REVISED REMEDIAL INVESTIGATION REPORT

Operable Unit No. 2 (OU-2)

Off-Site Areas

Former Columbia Cement Company, Inc. Facility
159 Hanse Avenue
Freeport, New York

SITE # 1-30-052

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TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

This Remedial Investigation Report ("RIR") presents the results of an investigation to further characterize conditions at Operable Unit No. 2 (OU-2) of the former Columbia Cement Company (CCC) site located at 159 Hanse Avenue in Freeport, New York ("Site"). URS Corporation (URS) has prepared this RIR on behalf of the Atlantic Richfield Company, a BP affiliate and in response to requests from the New York State Department of Environmental Conservation (NYSDEC) as partial fulfillment of requirements of the New York State Inactive Hazardous Waste Disposal Remedial (Superfund) Program.

1.1 BACKGROUND INFORMATION

The former Columbia Cement Company, which was owned by Burmah Castrol, produced adhesives for a variety of applications. In 1988, while CCC operated the facility, approximately 1,760 gallons of 1,1,1-trichloroethane (1,1,1-TCA) was released to an unlined storm drain during filling of an underground storage tank (UST) due to a failure of a contractor's tanker truck. The spill was reported and response measures were performed under regulatory oversight. In 1996, the property was sold to Illinois Tool Works (ITW). In 1998, Burmah Castrol entered into a Consent Agreement (Index WI #W2-02-0813-98-05) with the NYSDEC regarding the 1,1,1-TCA spill. In 2001, BP purchased all Burmah Castrol holdings and assumed responsibility for the 1,1,1-TCA spill.

Numerous phases of a Remedial Investigation were conducted by Delaware Engineering (1997 through 2003) and URS (2003 through 2006). In December 2006, URS submitted a Supplemental Remedial Investigation Report, summarizing all data obtained to date. In January 2007, URS submitted a Feasibility Study Report ("FSR") that evaluated remedial alternatives to address subsurface impacts. In its March 8, 2007 letter, NYSDEC requested installation of monitoring wells adjacent to Freeport Creek to assess the extent of the plume.

In September 2007, BP installed two monitoring wells (MW-07-16S and MW-07-17D) downgradient from the Site and adjacent to Freeport Creek. Sampling results indicated that chloroethane was present in well MW-07-16S at a concentration exceeding the NYSDEC Ambient Groundwater Quality Standard. Based on these results, NYSDEC divided the site into two Operable Units. Operable Unit No. 1 (OU-1) consists of the on-site project area owned by ITW, located at 159 Hanse Avenue, which is approximately 2 acres in size. OU-2 consists of the offsite areas immediately surrounding OU-1. In October 2008, BP presented a Remedial Action Work Plan (RIWP) to NYSDEC. The RIWP presented a scope of work to evaluate subsurface impacts to OU-2 resulting from the 1988 1,1,1-TCA spill in OU-1.

1.2 SITE DESCRIPTION

The former Columbia Cement facility consists of approximately 2 acres in an area of Freeport, New York that is highly developed with commercial and industrial facilities. Freeport is located in Nassau County on the south shore of Long Island. The site location is shown on Figure 1. The Site building covers approximately 65,000 square feet, and consists of former offices, material storage, production rooms, and warehousing. Ten 8,000-gallon underground storage tanks (USTs) were located near the southeast corner of the property.

The Site is bordered by a recycling facility to the north. The Rohm & Haas Electronic Components borders the property to the east. Apollo Fine Spirits is located to the south of the property. The property is bordered by Hanse Avenue to the West. Farber Plastics and Love & Quiches bakery are located on the opposite (west) side of Hanse Avenue. A Site Plan is presented as Figure 2.

The Site is located on a peninsula on the south side of Long Island. Freeport Creek is located 500 feet west of the Site, and Stadium Park Canal is 1,000 feet east of the site. Stadium Park Canal merges with Freeport Creek approximately 1,500 feet southeast of the site. From this point, surface water flows south through tidal marshes to the Atlantic Ocean, approximately 5 miles south of the Site. The Site is very flat, ranging from 5 to 10 feet above Mean Sea Level (MSL). Surface water at the site drains to the west toward Freeport Creek. Storm drains located on site, also drain to Freeport Creek.

1.2.1 Operable Unit No. 2 Properties

OU-2 consists of the offsite areas immediately surrounding OU-1. OU-2 includes the following properties:

191 Hanse Avenue: Immediately south of OU-1 is 191 Hanse Avenue. This property is currently occupied by Apollo Fine Spirits, a wine and spirits distributor. Prior to 2008, this property was utilized as warehouse space for various businesses.

162 Hanse Avenue: On the opposite side of Hanse Avenue, directly west of OU-1, is 162 Hanse Avenue. This property is currently occupied by Farber Plastics, Inc. Farber Plastics manufactures plastic sheeting products from pellets.

178 Hanse Avenue: On the opposite side of Hanse Avenue, southwest of OU-1, is 178 Hanse Avenue. This property is currently occupied by Love & Quiches, Inc. Love & Quiches is a large-scale bakery that produces quiches and desserts for commercial food service operations.

272 Buffalo Avenue: 272 Buffalo is located immediately east of OU-1. This property is currently owned by Rohm & Haas Electronic Materials. This facility produced electronic components, but the facility was ceased operations in the Fall of 2009. The property was previously occupied by Lea Ronal, which performed similar activities.

1.3 SITE CONCEPTUAL MODEL

Soil borings advanced during investigation activities at OU-1 and OU-2 encountered five stratigraphic units beneath the site. In order of increasing depth, these units are: fill material; tidal marsh deposits; gravelly sand; gray clay and silt; and gray sand. Stratigraphic cross-section A-A' is presented as Figure 3. The location of the stratigraphic cross-section is shown on Figure 2. Each of these units is discussed below.

- The fill material is encountered across the entire site and consists of reworked native soil and various debris related to previous Site use as a municipal landfill. The fill material ranges in thickness from 3.1 feet (ft) to 22.9 ft, with an average thickness of about 11 ft. at OU-1.

- The tidal marsh deposits are encountered beneath the fill material in most areas of OU-1, but are absent in some areas, including the UST/spill area. The tidal marsh deposits consist of brown, dark gray and black organic clayey silt with some fine to medium sand and varying amounts of roots, wood and peat. Where present, the tidal marsh material is encountered at an average depth of 9.5 ft and has an average thickness of 4 ft.

- The gravelly sand is a relatively thick and flat-lying unit encountered beneath the tidal marsh deposits, and beneath the fill material where the tidal marsh deposits are absent. The unit consists of medium dense, brown to light gray, coarse to fine sand, with little medium to fine subrounded gravel. Minor amounts of silt and clay were found in isolated samples. The gravelly sand thickness ranges from 15 to 30 ft and is thickest in the western portion of the site. The base of the gravelly sand is relatively flat and is encountered at about 35 ft below grade.

- The gray clay and silt underlies the gravelly sand. It consists of a medium gray clayey silt to silt and clay with little to trace sand and becomes clayier with depth. In the two borings at OU-1 that penetrated the entire clay unit, the thickness ranged from 14 ft to 15.3 ft. The gray clay and silt unit likely acts as a lower confining unit beneath the site.

- An undifferentiated light gray fine sand underlies the gray clay and silt. It is described as a gray to light gray medium to fine sand with little silt. Based on literature review, the thickness of this unit ranges from 20 to 30 ft beneath the Site.

The shallow water-bearing units beneath the Site are not utilized as a drinking water source. Deeper confined units include the Jameco, Magothy and Lloyd aquifers, which are used for drinking water in some areas of Long Island. Due to saltwater encroachment near the southern shore of Long Island, these units are not a source of drinking water near the Site. Groundwater beneath the site is classified as Class GA, which encompasses all fresh groundwater in New York State.

Shallow groundwater at OU-1 is encountered in the fill material at depths ranging from 5.5 to 8.0 feet below grade (ft bgs). In various areas of the site, the water table is encountered in the fill material, the tidal marsh deposits, or the gravelly sand. Due to this fact and extensive connectivity between these units, particularly where the tidal marsh unit is thin or absent, these units have been treated collectively as a single unconfined aquifer. Some shallow monitoring wells at OU-1 are screened across all three units. Deep monitoring wells screened at the base of the gravelly sand have nearly identical groundwater elevations as adjacent shallow wells, showing little or no vertical gradient. Groundwater from the shallow unconfined unit discharges to Freeport Creek. The gray clay and silt unit acts as a lower

confining layer or aquitard, separating the water table aquifer from the underlying gray sand. The gray sand is a separate confined water-bearing unit.

Groundwater flows primarily to the west; however, due to the Site's location, groundwater levels exhibit tidal influences, as described below. As is typical in coastal areas, shallow groundwater at the site is influenced by two tidal cycles per day.

As part of the RI, Delaware Engineering performed tidal monitoring of Site monitoring wells at OU-1. During tidal monitoring, groundwater level changes of 1 ft or less were recorded on Site. The tidal range is greatest to the west, suggesting a greater hydraulic connection to Freeport Creek than to Stadium Park Canal. The timing and degree of tidal response between the shallow and deep wells suggests that in some areas of OU-1, the tidal marsh unit may restrict flow between the fill material and the gravelly sand.

During high tide, flow was generally to the west with a very shallow hydraulic gradient of 0.00095 ft/ft. During low tide, a groundwater divide forms in the north-central portion of the site. Groundwater east of this divide flows to the east and groundwater west of the divide flows to the west. Based on this observation, the gradient in the spill area alternates from east to west with a very minimal gradient in both directions. This alternating flow direction should serve to minimize contaminant transport from OU-1. The mean tide flow direction is east to west, with a hydraulic gradient of 0.0002 ft/ft net flow to the west.

As noted above in Section 1.1, a 1988 spill of 1,1,1-trichloroethane (1,1,1-TCA) resulted in soil and groundwater contamination on OU-1. Numerous rounds of investigation were performed from 1997 through 2007. Results of the investigations indicate that:

- Spill-related soil contamination is restricted to the area immediately around the spill and former USTs;
- 1,1,1-TCA in OU-1 groundwater degrades fairly rapidly to 1,1-dichloroethane (1,1-DCA), and then to chloroethane;
- At the downgradient OU-1 boundary, chloroethane is the only spill-related compound present at levels exceeding the GWQS (chlorobenzene is also present, but is not related to the 1,1,1-TCA spill);
- The groundwater chloroethane impacts are restricted to the fill material, tidal march deposits and gray sand water-bearing unit. The gray clay at approximately 35 to 38 feet below grade acts as a lower confining layer.

To date, the only spill-related compound detected in OU-2 groundwater is chloroethane. No potable wells are located in the vicinity of OU-1 or OU-2 (Delaware Engineering, 2003). Freeport Creek, approximately 500 feet from the spill location, represents a potential groundwater discharge point and ecological receptor.

1.4 CONTAMINANTS OF CONCERN

The OU-2 RI focuses on select Contaminants of Concern (COCs). The COCs include the spill related compounds 1,1,1-TCA, and its degradation products 1,1-DCA and chloroethane. In addition to the spill related compounds, acetone is also included as a COC for OU-2. Acetone has not been detected in OU-2 groundwater to date. However, following the in-situ chemical oxidation (ISCO) Pilot Test at OU-1, acetone was detected in wells in OU-1 near Hanse Avenue. Given the proximity to OU-2 and the potential for migration, and as per discussions with NYSDEC, acetone is included as a COC for OU-2.

In addition to the COCs, other compounds that have been detected in or near OU-2 are noted where appropriate and will be monitored during future sampling events at OU-2. These compounds include chlorobenzene. Chlorobenzene has been detected in OU-2 groundwater, but has no history of use or storage at OU-1. The groundwater distribution of chlorobenzene does not suggest a release from OU-1 and it may be related to the former use of the area as a municipal landfill.

2.1 OBJECTIVES

The objectives of the OU-2 RI were to assess environmental impacts from the 1988 1,1,1-TCA spill on human and ecological receptors located in areas off site and downgradient from OU-1. Specifically, the RI objectives are:

- Delineate the lateral and vertical extent of the groundwater chloroethane plume migrating from OU-1;
- Assess potential for natural attenuation of the chloroethane plume;
- Evaluate the effects of tidal fluctuations in Freeport Creek on contaminant transport;
- Assess impacts for the groundwater chloroethane plume on Freeport Creek surface water and sediment;
- Evaluate the vapor intrusion pathway in adjacent buildings and buildings overlying the chloroethane plume downgradient from the Site.

To accomplish these objectives, BP conducted the scope of work described below.

2.2 GROUNDWATER SCREENING SAMPLING

Groundwater samples collected from well couplet MW-05-14S / MW-05-15D, located in Hanse Avenue, and from well couplet MW-07-16S / MW-07-17D, adjacent to Freeport Creek, show impacts from chloroethane extend from OU-1 westward, toward Freeport Creek. In December 2008 BP collected groundwater screening samples from temporary monitoring points to assess the width of the contaminated groundwater plume (See Figure 4). Samples were collected on the west side of Hanse Avenue, at approximately 50-foot intervals north and south of MW-05-14S and MW-05-15D. Samples were collected from two points north of the MW-05-14S / MW-05-15D well couplet on the 162 Hanse Avenue property, and from three points south of the MW-05-14S / MW-05-15D well couplet on the 178 Hanse Avenue Property. Groundwater screening samples were also collected on the east side of Hanse Avenue, at approximately 50-foot intervals north and south of MW-97-1S and MW-98-9D. Samples were collected from two points north of the MW-97-1S / MW-98-9D well couplet on the 159 Hanse Avenue property, and from two points south of the MW-97-1S / MW-98-9D well couplet on the 191 Hanse Avenue Property. At each location, groundwater samples were collected every five feet from 10 feet below grade (fbg) to 30 fbg.

Prior to drilling, a public utility markout of the drilling areas was requested. In addition, URS contracted XRay Locating to perform a utility clearance of the areas. At each location, the borings were also cleared using a hand auger to a depth of 5 feet below grade (fbg). Borings were advanced using direct push methods to a depth of 34 fbg with an expendable point. Continuous macro-core samples were collected from 5 fbg to the terminal depth of the boring. Soils were screened with a calibrated photoionization detector (PID) and logged by a URS geologist. Soil boring logs are presented in Appendix A.

From a depth of 34 fbg, the drill rods were pulled up four feet to expose a stainless steel retractable screen from 30 fbg to 34 fbg. Dedicated tubing with a check valve was inserted into the screen and attached to a peristaltic pump. Samples were collected using low-flow methods. The sample point was purged at 0.2 liters per minute (lpm) to 0.5 lpm. Field parameters, including temperature, pH, conductivity, dissolved oxygen and redox potential were also measured. When the field parameters stabilized, the sample was collected through the sample tubing. Groundwater samples were collected in laboratory-supplied pre-preserved glassware.

After the sample was collected, the rods and retractable screen were raised five feet to collect a sample from 25 to 29 feet below grade, and the sampling procedure described was repeated. This procedure was repeated every five feet to collect samples from the 20 fbg to 24 fbg interval, the 15 fbg to 19 fbg interval and the 10 fbg to 14 fbg interval.

Groundwater samples were analyzed for 1,1,1-TCA, 1,1-DCA, chloroethane, chlorobenzene and methylene chloride. Samples were submitted under chain of custody documentation to TestAmerica Buffalo, a NYSDOH-certified laboratory and were analyzed using CLP methods with ASP Category B deliverables.

2.3 MONITORING WELLS

2.3.1 Monitoring Well Installation

The groundwater screening results were presented to NYSDEC and NYSDOH in a letter report dated February 2, 2009. Based on the groundwater screening results, NYSDEC requested that BP install nine monitoring wells in OU-2 to enable future monitoring of the offsite volatile organic compound (VOC) plume. OU-2 monitoring well locations are shown on Figure 2. The wells were installed near the outer (north and south) edges of the groundwater chloroethane plume. At four locations, wells were installed as shallow and deep well couplets, similar to MW-05-14S and MW-05-15D. At one location, a single monitoring well was installed. The exact locations and depths of the wells were dependent on the results of the groundwater screening sampling. Wells MW-09-18S and MW-09-19D were installed near the northeast corner of the 162 Hanse Avenue property. Wells MW-09-24S and MW-09-25D were installed near the northwest corner of the 162 Hanse Avenue property, near Freeport Creek. Wells MW-09-20S and MW-09-21D were installed near the southeast corner of the 178 Hanse Avenue property. Wells MW-09-22S and MW-09-23D were installed near the southwest corner of the 178 Hanse Avenue property. Well MW-09-26D was installed near the southwest corner of the 191 Hanse Avenue property.

Each well location was cleared using a hand auger to a depth of 5 feet. The wells were advanced using 4 1/4 –inch hollow stem augers driven by a Geoprobe® Model 6620DT track-mounted drill rig. Continuous macro-core samples were collected from 5 feet below grade to the terminal depth of the boring for the deeper well in each couplet. Soil samples were not collected from the shallow well boring. Soils were screened with a calibrated photoionization detector (PID) and logged by a URS geologist. Soil boring logs are

presented in Appendix A. Soil cuttings were contained in 55-gallon drums and stored in the former Columbia Cement building pending subsequent off-site disposal.

The wells were constructed of 2-inch ID, Schedule 40 PVC screen and riser pipe with a threaded bottom cap. The screens were 10 feet in length with No. 10 slot (0.010 inch). In each well a sand pack was placed in the annular space from the bottom of the well to 1 foot above the top of the well screen. A bentonite seal was placed above the sand pack. The seal was at least 2 feet thick. A cement-bentonite grout was placed from the top of the bentonite seal to approximately 3 feet below grade. Each well was finished with a flush-mount steel cover set in concrete, and a water-tight locking cap. Monitoring well construction diagrams are presented in Appendix B.

2.3.2 Well Development

After installation, the wells were developed to remove residual materials from the well, increase hydraulic conductivity around the well and reduce turbidity of samples. Wells were developed using a submersible pump. In-situ parameters (pH, conductivity, dissolved oxygen, redox potential and turbidity) were monitored during well development. Development continued until in-situ parameters stabilized and the turbidity reached 50 Nephelometric Turbidity Units (NTU) or less. If this goal could not be reached, well development continued until a volume equal to at least 10 well volumes was evacuated. Development water was contained in 55-gallon drums and stored in the former Columbia Cement building pending subsequent off-site disposal.

2.3.3 Well Surveying

After installation, monitoring wells were surveyed by a licensed land surveyor. The location and elevation of the wells was surveyed for inclusion on Site maps. In addition, the location and elevation of several points on the Freeport Creek bulkhead near the new wells were surveyed.

2.3.4 2009 Monitoring Well Sampling

To assess groundwater conditions at OU-2, groundwater samples were collected from previously installed monitoring wells MW-97-1S, MW-98-9D, MW-97-2S, MW-98-10D, MW-05-14S, MW-15D, MW-07-16S, MW-07-17D, MW-03-13S and the nine monitoring wells installed as described in Section 2.3.1. Wells MW-97-1S and MW-98-9D were sampled on September 1, 2009, as part of the Enhanced Aerobic Bioremediation Pilot Test at OU-1. Most of the remaining wells were sampled from September 8 through September 11, 2009. During this period, wells MW-07-16S and MW-07-17D were covered by a 45 ft by 8 ft storage container. On September 30, 2009, the container was temporarily moved so the wells could be sampled.

At each well, the steel cover and locking cap was removed. The headspace in the casing was immediately screened with a PID. The depth to water and total depth of the well were

sounded using an electronic interface probe. Wells were purged and sampled using low-flow methods (Puls and Barcelona, 1996) using a peristaltic pump with dedicated polyethylene tubing. The tubing was suspended in the well approximately 1 foot above the well bottom. Wells were pumped at 0.2 to 0.5 liters per minute (lpm). Water was pumped through a Horiba U22 water quality meter flow cell. The U22 contains probes that measure pH, specific conductance, temperature, turbidity, dissolved oxygen (DO) and oxidation-reduction potential (ORP). Measurements of these in-situ field parameters were recorded every 3 to 5 minutes until they stabilized. A well was considered stabilized when the in-situ parameters changed less than 10% over 3 consecutive readings. After stabilization, the discharge was disconnected from the flow cell and the sample was collected from the discharge. Samples were submitted under chain of custody documentation to TestAmerica Buffalo and were analyzed using CLP methods with ASP Category B deliverables. Samples were analyzed for the VOCs 1,1,1-TCA, 1,1-DCA, chloroethane, chlorobenzene and methylene chloride, as well as dissolved gasses (methane, ethane and ethene), total iron, dissolved iron, chloride, sulfate, sulfide and total organic carbon.

2.3.5 2010 Monitoring Well Sampling

The OU-2 monitoring wells were sampled a second time in October 2010. Most of the OU-2 wells were sampled on October 13 and 14, 2010. During this period, wells MW-07-16S, MW-07-17D, MW-09-21S and MW-09-21D were covered by storage containers. On October 20, 2010, the container was temporarily moved so the wells could be sampled. In addition, wells MW-97-1S, MW-98-9D, MW-97-2S and MW-98-10D were sampled in September 2010, as part of ongoing activities at OU-1.

Sampling procedures used were similar to those used in the September 2009 sampling event (Section 2.3.4). Samples were submitted under chain of custody documentation to TestAmerica Buffalo and were analyzed using CLP methods with ASP Category B deliverables. Samples were analyzed for VOCs and sulfate.

2.3.6 2011 Monitoring Well Sampling

The OU-2 monitoring wells were also sampled in October 2011. Most of the OU-2 wells were sampled on October 10 and 11, 2010. During this period, wells MW-07-16S, MW-07-17D, MW-09-21S and MW-09-21D were covered by storage containers. On October 20, 2011, the container was temporarily moved so the wells could be sampled. Due to QA/QC issues identified during data validation, several OU-1 wells were re-sampled on January 12, 2012.

Sampling procedures used were similar to those used in the September 2009 sampling event (Section 2.3.4). Samples were submitted under chain of custody documentation to TestAmerica Buffalo and were analyzed using CLP methods with ASP Category B deliverables. Samples were analyzed for VOCs and sulfate.

2.3.7 Pilot Test Performance Monitoring Well Sampling

In addition to the sampling rounds described above, wells MW-97-1S and MW-98-9D were sampled on numerous other occasions as part of a monitoring program associated with pilot tests for In-Situ Chemical Oxidation (ISCO) and enhanced aerobic bioremediation conducted near those wells. The most recent sampling was conducted in January 2012.

2.4 SURFACE WATER AND SEDIMENT SAMPLING

Surface water and sediment samples were collected in April 2000 at the stormwater outfall to Freeport, as well as upstream and downstream of the outfall (Delaware Engineering, 2003). The sample results demonstrated that releases from the 1988 1,1,1-TCA spill through the storm sewer system to Freeport Creek did not result in significant impacts to creek surface water or sediment.

Groundwater sample results from monitoring wells along Freeport Creek did show concentrations of chloroethane. To evaluate whether the chloroethane has impacted Freeport Creek, BP collected surface water and sediment samples as per the sampling plan submitted to NYSDEC and NYSDOH on October 20, 2009 and approved on October 30, 2009. Based on previous groundwater monitoring data, the analytes included chloroethane and chlorobenzene, although only chloroethane is related to the 1988 spill.

Samples were collected from six locations Freeport Creek on November 17, 2009. Three sets of samples were collected from the eastern edge of Freeport Creek and three sets of samples were collected approximately 100 feet east of these, in the center of Freeport Creek. Samples SW-1 and SED-1 were collected approximately 100 feet north of well couplet MW-09-24S/MW-09-25D and samples SW-2 and SED-2 were collected 100 feet west of these. Samples SW-3 and SED-3 were collected adjacent to well couplet MW-07-16S/MW-07-17D and samples SW-4 and SED-4 were collected 100 feet west of these. Samples SW-5 and SED-5 were collected approximately 100 feet south of well couplet MW-09-22S/MW-09-23D and samples SW-6 and SED-6 were collected 100 feet west of SW-5 and SED-5.

2.4.1 Surface Water Sampling

To avoid getting suspended sediment in the surface water sample, the surface water sample was collected first at each location. At each location, an electronic water level indicator was used to measure the creek depth at that point. The sample was collected from the mid-point of the water column. Surface water samples were collected using a Kemmerer discrete interval sampling device. The sample was transferred into laboratory-supplied containers and stored on ice. Samples were submitted under chain of custody documentation to TestAmerica Buffalo laboratory and were analyzed using CLP methods with ASP Category B deliverables.

2.4.2 Sediment Sampling

At each sampling location, after the surface water sample was collected, a sediment sample was collected. The sediment samples were collected from the upper 12 inches of sediment using a hand auger or Ekman dredge sampler. The sampling device was dependent on water depth and sediment characteristics. The sample was transferred into laboratory-supplied containers and stored on ice. Samples were submitted under chain of custody documentation to TestAmerica Buffalo laboratory and were analyzed for VOCs using CLP methods with ASP Category B deliverables.

2.5 TIDAL MONITORING

To evaluate effects of tidal fluctuations in Freeport Creek on groundwater levels and flow directions, BP performed tidal monitoring. The tidal monitoring included monitoring water levels in Freeport Creek and 8 monitoring wells in OU-1 and OU-2 over a 48-hour period. Measurements were made in four well couplets:

- MW-97-1S and MW-98-9D
- MW-09-14S and MW-0-15D
- MW-09-18S and MW-0-19D
- MW-09-24S and MW-0-25D

The October 2008 Remedial Investigation Workplan (RIWP) called for tidal monitoring in wells MW-07-16S and MW-07-17D, but these wells were covered by a 45' x 8' container box. They were temporarily accessed for sampling (Section 2.3.4) but could not be accessed for the tidal monitoring. Measurements were also made at a surveyed point on the Freeport Creek bulkhead near wells MW-09-24S and MW-09-25D. The measurements were made using electronic MicroDiver™ pressure transducers/data loggers secured in the wells and in Freeport Creek. A BaroDiver™ was also installed in one well above the water column to record barometric pressure. The barometric pressure data was used to correct the other data for barometric pressure effects. The instruments were secured in place and programmed to record water levels every 15 minutes for the 48-hour monitoring period. At the end of the tidal monitoring, the loggers were removed from the wells and the data was downloaded to a computer.

The tidal monitoring data was tabulated and hydrographs for each point were prepared. Maps and cross-sections were prepared showing groundwater elevations at high, low and mean tides. Also, vertical hydraulic gradients at each of these points were calculated.

2.6 VAPOR INTRUSION SAMPLING

After the groundwater screening sampling described in Section 2.2 was completed, BP evaluated the results with respect to the extent of the chloroethane plume in OU-2. Based on the groundwater screening results and previous OU-1 sampling data, BP identified OU-2 buildings that may overly the chloroethane plume. BP presented the groundwater screening

sampling results to NYSDEC and NYSDOH for review. At the direction of NYSDEC and NYSDOH, on March 4, 2009, BP subsequently presented a sampling plan to NYSDEC and NYSDOH to assess the vapor intrusion pathway in buildings overlying the chloroethane plume. Sampling was conducted in accordance with NYSDOH guidance. A description of the sampling procedures is presented below:

To obtain the samples when the potential for vapor intrusion is greatest, sampling was conducted during the heating season (November 1 through March 31). Sub-slab vapor samples were collected by drilling a ½-inch diameter hole through the slab using an electric hammer drill. Dedicated Teflon sample tubing was inserted into the sub-slab aggregate. Samples were obtained using laboratory supplied pre-cleaned 6-liter SUMMA ® canisters with flow controllers set to collect the samples over an 8-hour period. To evaluate the potential for "short circuit" of ambient air into soil vapor samples, a small polyethylene bucket, equipped with purge and vent ports as well as a grommet equipped with a ¼-inch diameter hole for the sampling tube was placed upside down over the hole, with the sampling tube passing through the bottom of the bucket. A foam rubber gasket was placed around the bucket edge, which acted as a seal between the bucket and the slab surface around the sampling point. The purge and vent ports on the bucket were opened and helium was introduced into the bucket space until 90 to 100 percent concentration was measured at the vent port. Both ports were then closed.

The sampling line was purged at 200 cc/min and checked for helium intrusion and, if, 10 percent helium or less was measured, sampling for sub-slab vapors was initiated. The sub-slab vapor sampling line was then attached to the SUMMA Canister. After the pre-sampling vacuum was recorded, the valve was opened to begin sample collection. During the sampling period, the sampling line was monitored periodically for the presence of helium by means of a tee port on the sampling line. During the sampling period, the vacuum readings were monitored. At each sub-slab vapor sampling location, an indoor air sample was collected concurrently. The paired indoor air sample was collected by placing a SUMMA canister at breathing height (3 to 5 feet above the floor) and opening the flow control valve.

On March 12, 2009, vapor intrusion sampling was conducted at 162 Hanse Avenue and 191 Hanse Avenue. In each building, two sub-slab vapor samples and two indoor air samples were collected. At 178 Hanse Avenue, no vapor intrusion samples were collected because of access issues. Because the tenant prepares food products in the building, they were concerned about the potential for sub-slab vapors to contaminate the food preparation areas during sampling, and would not permit the sampling. At 272 Buffalo Avenue, because of the sensitive manufacturing processes, the owner requested that outdoor sub-slab samples be collected first as a screening tool. If these samples indicated a potential indoor vapor intrusion issue, indoor sub-slab sampling could then be conducted. On November 12, 2009, two outdoor sub-slab vapor and one outdoor ambient air sample were collected at 272 Buffalo Avenue. Because of the site operation hours, the sampling time on these samples was reduced from eight hours to four hours with the approval of NYSDOH. At the conclusion of the sampling period, the flow controllers were closed, the tubing was removed from the hole and the holes were patched with concrete.

After the completion of sampling, the SUMMA canisters were submitted under chain of custody documentation to TestAmerica Laboratory in Burlington, Vermont a NYSDOH and ELAP-certified laboratory and were analyzed using USEPA Method TO-15 with ASP Category B deliverables. Samples were analyzed for the VOCs identified and targeted in the OU-1 vapor intrusion investigation. These compounds include:

- Acetone;
- Benzene;
- Chlorobenzene;
- Chloroethane;
- 1,1-Dichloroethane;
- 1,1-Dichloroethene;
- cis-1,2-Dichloroethene;
- trans-1,2-Dichloroethene;
- Ethylbenzene;
- Freon 113;
- Freon 114;
- Heptane;
- Hexane;
- Methyl Cyclohexane (as a TIC);
- Methylene Chloride;
- Methyl Ethyl Ketone (MEK);
- Pentane;
- Tetrachloroethene;
- 1,1,1-Trichloroethane;
- Toluene;
- Trichloroethene;
- Vinyl Chloride.
- M&p-Xylene;
- Total Xylenes.

2.7 INVESTIGATION-DERIVED WASTE

During the OU-2 Remedial Investigation, waste materials were generated. This investigation-derived waste (IDW) included the following:

- soil generated from drilling activities (drill cuttings);
- groundwater from the development and purging of temporary groundwater sampling points and monitoring wells;
- decontamination fluids (water and detergents used to clean drilling/field equipment) and solids that may settle out of these fluids;

- personnel protection equipment (PPE) and associated debris produced during field activities.

The IDW generated during the drilling program monitoring well installation were contained in 55-gallon drums and staged in the former Columbia Cement Company building. Following review of laboratory data, the IDW was disposed of properly.

3.1 DATA USABILITY REPORT

All of the laboratory data generated during this remedial investigation was subject to a laboratory data Quality Assurance/Quality Control (QA/QC) Review in accordance with NYSDEC guidance for Data Usability Reports (DUSR). QA/QC reports for the data packages are presented in Appendix D. The only data found to be invalid was the chloroethane results from several samples in the October 2011 groundwater sampling event, due to field blank contamination. These wells were re-sampled in January 2012 and no issues were found with the results. Otherwise, the QA/QC review did not result in the rejection or alteration of any sampling results, although some data are estimated and data qualifiers were added to the data when necessary. Overall, the data was found to be acceptable for evaluating groundwater, vapor, surface water and sediment quality when used with the appropriate qualifiers.

3.2 2008 GROUNDWATER SCREENING SAMPLING

Between December 3 and December 9, 2008, groundwater screening samples were collected from temporary monitoring points GW-01 through GW-09. Groundwater screening locations are shown on Figure 4. Soil boring logs are presented in Appendix A. Groundwater screening samples were collected from each monitoring point at five intervals starting from 10 to 14 fbg to 30 to 34 fbg up. Groundwater was purged using a peristaltic pump following low-flow methods. When the field parameters were stabilized, the samples were collected and analyzed for the contaminants of concern (COCs) described in Section 1.4. Sampling results were compared to the New York State Ambient Groundwater Quality Standards (GWQS). The results are presented in Table 2 and on Figure 4.

159 Hanse Avenue

Temporary monitoring points GW-06 and GW-07 were installed east of Hanse Avenue in front of the Former Columbia Cement property (159 Hanse Avenue) on December 9, 2008. Groundwater screening location GW-06, located about sixty feet south of MW-97-2S/MW-98-10D well couplet, is the northern-most groundwater screening location east of Hanse Avenue. Chloroethane concentrations ranged from 23 µg/l in GW-06C (20 fbg to 24 fbg) to 2 µg/l in GW-06A (10 fbg to 14 fbg) and GW-06E (30 fbg to 34 fbg). Screening sample GW-06C (20 fbg to 24 fbg) exceeded GWQS of 5 µg/l. All other samples collected at location GW-06 were below the chloroethane GWQS. Chlorobenzene was also detected at location GW-06 and ranged from 28 µg/l in GW-06B (15 fbg to 19 fbg) to 3 µg/l in GW-06E (30 fbg to 34 fbg). Chlorobenzene concentrations exceeded GWQS in shallow screening intervals GW-06A (10 fbg to 14 fbg) and GW-06B (15 fbg to 19 fbg) and deeper screening interval GW-06D (25 fbg to 29 fbg).

At groundwater screening location GW-07, located approximately sixty feet south of GW-06, chloroethane concentrations increased with depth, ranging 8 µg/l in GW-07A (10 fbg to 14 fbg) to 1,500 µg/l in GW-07D (25 fbg to 29 fbg). The concentration of 1,500 µg/l in GW-07D is the highest concentration of chloroethane detected during the groundwater screening

sampling event. It also represents the highest chloroethane concentration detected outside the 1,1,1-TCA spill area. Chloroethane concentrations exceeded the GWQS in all screening intervals at location GW-07.

Chlorobenzene was not detected in the shallowest sample interval of GW-07; however, reportable concentrations were detected in the remaining screening intervals, ranging from 3 µg/l in GW-07B (15 fbg to 19 fbg) to 5 µg/l in GW-07C (20 fbg to 24 fbg) and GW-07D (25 fbg to 29 fbg). Reportable concentrations of chlorobenzene did not exceed GWQS in any screening intervals at location GW-07.

162 Hanse Avenue

Temporary monitoring points GW-01 and GW-02 were installed in front of the 162 Hanse Avenue property on December 5, 2008. Groundwater screening location GW-01, located due west of the Former Columbia Cement property (159 Hanse Avenue), is the northern-most groundwater screening location west of Hanse Avenue. Chloroethane concentrations decreased with depth, ranging from 56 µg/l in GW-01A (10 fbg to 14 fbg) to 3 µg/l in GW-01D (25 fbg to 29 fbg) and GW-01E (30 fbg to 34 fbg). Chloroethane concentrations exceeded the GWQS of 5 µg/l in the three uppermost samples (GW-01A, GW-01B and GW-01C). Chlorobenzene was also detected at groundwater screening location GW-01 and ranged from 3 µg/l in GW-01A (10 fbg to 14 fbg) to 7 µg/l in GW-01C (20 fbg to 24 fbg). Chlorobenzene concentrations exceeded GWQS in GW-01B (15 fbg to 19 fbg) and GW-01C (20 fbg to 24 fbg) only.

At groundwater screening location GW-02, located approximately sixty feet south-west of GW-01, chloroethane concentrations ranged from 5 µg/l in GW-02A (10 fbg to 14 fbg) to 360 µg/l in GW-02D (25 fbg to 29 fbg). Chloroethane concentrations exceeded the GWQS in each of the groundwater screening samples collected with the exception of the shallowest interval, GW-02A (10 fbg to 14 fbg). Chlorobenzene was also detected at groundwater screening location GW-02 and ranged from 4 µg/l in GW-02C (20 fbg to 24 fbg) and GW-02D (25 fbg to 29 fbg) to 1 µg/l in GW-02A (10 fbg to 14 fbg) and GW-02E (30 fbg to 34 fbg). Chlorobenzene concentrations did not exceed the GWQS in any screening intervals in groundwater screening location GW-02.

178 Hanse Avenue

Temporary monitoring points GW-03, GW-04 and GW-05 were installed in front of the 178 Hanse Avenue property on December 6 and 8, 2008. At groundwater screening location GW-03, located about fifty feet south of the MW-05-14S / MW-05-15D well couplet, chloroethane concentrations ranged from 310 µg/l in GW-03B (15 fbg to 19 fbg) to 72 µg/l in GW-03E (30 fbg to 34 fbg). Chloroethane concentrations exceeded GWQS in each of the five intervals sampled. Chlorobenzene was also detected at groundwater screening location GW-03 and ranged from 5 µg/l in GW-03E (30 fbg to 34 fbg) to 11 µg/l in GW-03B (15 fbg to 19 fbg), GW-03C (20 fbg to 24 fbg) and GW-03D (25 fbg to 29 fbg). Chlorobenzene concentrations exceeded GWQS in all screening intervals, with the exception of the deepest, GW-03E (30 fbg to 34 fbg).

At groundwater screening location GW-04, located approximately forty feet south of GW-03, chloroethane concentrations ranged from 2 µg/l in GW-04A (10 fbg to 14 fbg) to 160 µg/l in GW-04E (30 fbg to 34 fbg). Chloroethane concentrations increased with depth, and exceeded the GWQS in the three deepest sample intervals, GW-04C, GW-04D and GW-04E. Chlorobenzene was also detected at groundwater screening location GW-04 and ranged from 5 µg/l in GW-04A (10 fbg to 14 fbg) and GW-04E (30 fbg to 34 fbg) to 9 µg/l in GW-04B (15 fbg to 19 fbg). Chlorobenzene concentrations exceeded the GWQS in screening intervals GW-04B (15 fbg to 19 fbg), GW-04C (20 fbg to 24 fbg) and GW-04D (25 fbg to 29 fbg).

Groundwater screening location GW-05, located approximately sixty feet south of GW-04, is the southern-most screening location of all nine temporary monitoring points. Chloroethane was not detected in the three uppermost samples (GW-05A, GW-05B and GW-05C). Chloroethane was detected at 1 µg/l in GW-05D (25 fbg to 29 fbg) and at 15 µg/l in GW-05E (30 fbg to 34 fbg). Chloroethane concentration in sample GW-05E exceeded GWQS. Chlorobenzene was also detected at location GW-05 and ranged from 2 µg/l in GW-05C (20 fbg to 24 fbg) to 63 µg/l in GW-05E (30 fbg to 34 fbg). Chlorobenzene concentrations exceeded the GWQS in screening intervals GW-5A (10 fbg to 14 fbg), GW-05D (25 fbg to 29 fbg) and GW-05E (30 fbg to 34 fbg).

191 Hanse Avenue

Temporary monitoring points GW-08 and GW-09 were installed south of the Former Columbia Cement property, in front of the 191 Hanse Avenue property on December 3, 2008. Groundwater screening location GW-08 was installed about fifty feet south of MW-97-1S/MW-98-9D well couplet. Chloroethane was not detected in the three uppermost samples of GW-08 (GW-08A, GW-08B and GW-08C). Chloroethane was detected at 39 µg/l in GW-08D (25 fbg to 29 fbg) and at 150 µg/l in GW-08E (30 fbg to 34 fbg), both of which exceed GWQS. Chlorobenzene was not detected in the two shallowest intervals (GW-08A and GW-08B); however, concentrations were detected and exceeded GWQS in GW-08C (20 fbg to 24 fbg), GW-08D (25 fbg to 29 fbg) and GW-08E (30 fbg to 34 fbg). The highest concentration of chlorobenzene detected was 9 µg/l in GW-08E.

Groundwater screening location GW-09, located approximately fifty feet south of GW-08, is the southern-most groundwater screening location east of Hanse Avenue. Chloroethane was not detected in the three uppermost samples (GW-09A, GW-09B and GW-09C). Chloroethane was detected at 43 µg/l in GW-09D (25 fbg to 29 fbg) and at 120 µg/l in GW-09E (30 fbg to 34 fbg), both of which exceed GWQS. Chlorobenzene was not detected in the shallowest sample interval of location GW-09; however, reportable concentrations were detected in the remaining screening intervals. Concentrations decreased with depth, ranging from 15 µg/l in GW-09B (15 fbg to 19 fbg) to 6 µg/l in GW-09E (30 fbg to 34 fbg). All detected chlorobenzene concentrations exceeded GWQS.

The groundwater screening data are presented on Figure 4. Recent sampling results for the monitoring wells are presented for comparison purposes. Figure 4 shows the locations of cross-section B–B‘ on the east side of Hanse Avenue and cross-section C-C’ on the west side

of Hanse Avenue. Chloroethane concentrations along cross-section B-B' are presented in Figure 5 and chloroethane concentrations along cross-section C-C' are presented in Figure 6.

The highest concentration is in GW-07, directly west of the spill. This location is near the west end of storm drain line near the 1988 1,1,1-TCA spill (up to 1,500 g/l). From this high concentration, the levels decrease quickly moving away from GW-07. Fifty five feet to the north in GW-06, the highest chloroethane concentration is 23 µg/l and it was not detected in the well couplet located 125 feet north of GW-07. Ninety feet to the west, on the opposite side of Hanse Avenue, the highest chloroethane concentration in GW-02 was 360 µg/l. To the south of GW-07, the chloroethane concentration in MW-98-9D (880 µg/l) was about one half of the concentration in GW-07. The chloroethane concentration was an order of magnitude lower (150 µg/l) in GW-08, about 120 feet to the south.

On the west side of Hanse Avenue, the largest chloroethane impacts are similar and are restricted to three locations; GW-02 (360 µg/l), MW-05-15D (390 µg/l) and GW-03 (310 µg/l). To the north of GW-02, the highest concentration is 56 µg/l in GW-1. In the southernmost point, the highest concentration in GW-05 is 15 µg/l. At GW-01, the highest chloroethane impacts are in the upper samples (GW-01A and GW-01B); in GW-05, the only impacts were noted in the deeper samples (GW-05D and GW-05E).

To the north, the chloroethane plume is delineated on the east side of Hanse Avenue by wells MW-97-2S and MW-98-10D, where it was not detected in recent samples. The plume is also effectively delineated on the west side of Hanse Avenue at GW-01 where the highest concentration is 56 µg/l. To the south, the chloroethane plume is effectively delineated at GW-05, where the highest concentration is 15 µg/l. The chloroethane plume is vertically confined by the gray clay unit. The gray clay was encountered at depths ranging from 33 fbg to 37 fbg at points GW-01, MW-05-15D, GW-04, GW-05, MW-98-10D, GW-07 and MW-98-9D. The contact with this lower confining layer appears to be very flat in the OU-1 and OU-2 area.

3.3 GROUNDWATER MONITORING WELLS

3.3.1 OU-2 Monitoring Well Installation

Based on results of the groundwater screening, and discussions with NYSDEC, nine monitoring wells were installed near the outer edges (north and south) of the groundwater chloroethane plume to enable future monitoring of offsite contamination. At four locations, wells were installed as shallow and deep well couplets. At one location, a single monitoring well was installed. The exact locations and depths of the wells were dependent on the results of the groundwater screening sampling. OU-2 monitoring well locations are shown on Figure 7. Monitoring well construction diagrams are presented in Appendix B.

3.2.2 Groundwater Sampling

3.3.2.1 September 2009 Groundwater sampling

Groundwater was purged and sampled from existing wells MW-97-1S, MW-98-9D, MW-97-2S, MW-98-10D, MW-05-14S, MW-15D, MW-07-16S, MW-07-17D, MW-03-13S and the nine monitoring wells installed as described in Section 2.3.1, in September 2009. Samples were purged using low-flow methods and analyzed for the volatile organic COCs listed in Section 2.2, dissolved gasses (methane, ethane and ethane), total iron, dissolved iron, alkalinity, chloride, sulfate and total organic carbon. Sampling logs are presented in Appendix C. Field parameter measurements are presented in Table 3, and laboratory analytical results from the September 2009 groundwater sampling event are presented in Table 4. September 2009 and historical groundwater VOC results for all wells sampled are shown on Figure 7. The highest contaminant concentrations were detected adjacent to the spill location, in MW-98-9D and MW-97-1S. The highest chloroethane and chlorobenzene concentrations were detected in MW-98-9D at 3,000 µg/l and MW-97-1S and at 15 µg/l, respectively.

159 Hanse Avenue

Existing monitoring well couplets MW-97-2S / MW-98-10D and MW-97-1S / MW-98-9D are located along the western edge of the Former Columbia Cement property. MW-97-1S and MW-98-9D are almost due west of the spill area. The highest chloroethane concentrations were detected in MW-98-9D at 3,000 µg/l and MW-97-1S at 87 µg/l. The concentration of chloroethane detected in MW-98-9D is the highest detection of all monitoring wells sampled in the September 2009 sampling event. Chlorobenzene was detected in deep monitoring wells MW-98-9D and MW-98-10D at 8.5 µg/l and 15 µg/l, respectively. These results exceed GWQS of 5 µg/l. Chlorobenzene was not detected in either shallow monitoring well.

191 Hanse Avenue

In September 2009, monitoring well MW-09-26D was installed in close proximity to groundwater monitoring point GW-09, at the southwest corner of the 191 Hanse Avenue property. Chloroethane and chlorobenzene were detected at 36 µg/l and 13 µg/l, respectively. The detected concentrations exceed the GWQS of 5 µg/l.

162 & 178 Hanse Avenue

Existing monitoring well couplet MW-05-14S / MW-05-15D is located west of the MW-97-1S / MW-98-9D well couplet, near the northeast corner of The Love & Quiches property (178 Hanse Avenue). Downgradient, at the northwest corner of the property near Freeport Creek, are (existing) monitoring well couplet MW-07-16S / MW-07-17D. Of these four existing monitoring wells, chloroethane was detected at the highest concentration in MW-05-15D, at 490 µg/l. Concentrations decreased significantly downgradient, as chloroethane was detected at 5.1 µg/l in MW-07-17D. This concentration marginally exceeds GWQS of 5 µg/l. While chloroethane was not detected in shallow monitoring well MW-05-14S, concentrations

of 52 µg/l were detected downgradient, in MW-07-16S, also exceeding the GWQS. Chlorobenzene was detected above GWQS in monitoring wells MW-05-14S, MW-07-16S and MW-07-17D at 8.4 µg/l, 6.8 µg/l and 8.9 µg/l, respectively.

In September 2009, four additional well couplets were installed north and south of the existing monitoring well couplets; MW-09-18S / MW-09-19D and MW-09-24S / MW-09-25D were installed along the northern edge of the Farber Plastics property (162 Hanse Avenue) and well couplets MW-09-20S / MW-09-21D and MW-09-22S / MW-09-23D were installed along the southern edge of The Love & Quiches property (178 Hanse Avenue).

Monitoring well couplets MW-09-18S/MW-09-19D and MW-09-24S/MW-09-25D were sampled on September 9 and 11, 2009. Chloroethane was detected at 77 µg/l in MW-09-18S and 170 µg/l in MW-09-19D. Concentrations decreased downgradient, towards Freeport Creek, as chloroethane was detected in well couplet MW-09-24S/ MW-09-25D at 11 µg/l and 24 µg/l, respectively. All of these chloroethane concentrations exceeded the GWQS. Chlorobenzene concentrations were below GWQS in shallow wells MW-09-18S and MW-09-24S, while concentration marginally exceeded GWQS in deeper wells MW-09-19D (7 µg/l) and MW-09-25D (6.3 µg/l).

Monitoring well couplets MW-09-20S/MW-09-21D and MW-09-22S/MW-09-23D were sampled on September 10 and 11, 2009. Chloroethane was not detected in shallow monitoring well MW-09-20S or in the MW-09-22S/MW-09-23D couplet. Chloroethane and chlorobenzene were detected in deep monitoring well MW-09-21D at 9.8 µg/l and 5 µg/l, respectively, exceeding the GWQS for chloroethane. Chlorobenzene was also detected in monitoring well couplet MW-09-22S, MW-09-23D at 5.9 µg/l and 13 µg/l, exceeding GWQS of 5 µg/l.

The groundwater monitoring well sampling results support the groundwater screening sampling. Well couplets MW-97-1S / MW-98-9D, MW-05-14S / MW-05-15D and MW-07-16S / MW-07-07S effectively define a center line of the plume. Along this line, chloroethane concentrations decrease from OU-1 (3,000 µg/l), to Hanse Avenue (490 µg/l), to the edge of Freeport Creek (52 µg/l).

The monitoring wells also define the northern and southern fringes of the plume. To the north, chloroethane was not detected in OU-1 wells MW-97-2S and MW-98-10D. On the western side of Hanse Avenue, chloroethane was detected at 77 µg/l and 170 µg/l in the shallow and deep wells in front of 162 Hanse Avenue, respectively and at 11 µg/l and 24 µg/l in the wells behind 162 Hanse Avenue. Based on these results and the contaminant concentration decreases observed over short distances at the Site, the northern limit of chloroethane impacts is likely within several feet of these wells. To the south, chloroethane was detected at 36 µg/l in MW-09-26D, at the southwest of the 191 Hanse Avenue property. On the west side of Hanse Avenue, chloroethane was only detected in deep well MW-09-21D near southeast of the 178 Hanse Avenue Property. Chloroethane was not detected in the adjacent shallow well or either well located behind 178 Hanse Avenue.

Based on these results, the northern and southern limits of the chloroethane plume are effectively delineated. The plume is vertically confined by the clay unit encountered at about 35 fbg.

In seven of the well couplets along the western side of OU-1 and in OU-2, the chloroethane was detected at a higher concentration in the deep well than in the shallow well. This is to be expected with a denser-than-water compound such a chloroethane. The only exception is well couplet MW-07-16S and MW-07-17D, located at the northwest corner of the 178 Hanse Avenue property.

The lateral distribution of chloroethane follows the pattern of a plume originating from OU-1, with concentrations decreasing away from the source area, both to the west of the source, and to the north and south of the plume axis. This distribution pattern is not observed with chlorobenzene. The highest chlorobenzene concentration detected was in OU-1 well MW-97-2S (15 µg/l). Chloroethane has not been detected in this well since 2007. In several cases, chlorobenzene concentrations are higher in wells along Freeport Creek, than in wells closer to OU-1. This distribution indicates that the chlorobenzene impacts are not related to a release(s) from OU-1 but, rather, may be endemic to the area, which is a former municipal landfill that has been used for various industrial purposes for the last 40 to 50 years.

The groundwater monitoring well samples were also analyzed for a suite of parameters to evaluate the potential for natural attenuation VOCs in groundwater. These parameters include methane, ethane and ethene, total iron, dissolved iron, sulfate, sulfide and total organic carbon (TOC). The results presented in Table 4 are similar to those collected from OU-1 monitoring wells and show that the shallow groundwater in OU-2 is also anaerobic and reducing. This is supported by the low dissolved oxygen concentrations and negative redox potentials observed in most wells. Ethane and ethene were not detected in any of the wells sampled, but methane was detected in all the wells, indicating methanogenic activity in the subsurface. In most locations, the dissolved iron is a significant proportion of the total iron concentration, indicating that iron reducing conditions are also present. The sulfate concentrations are generally low in OU-2 groundwater, but trends in sulfate utilization can be observed. Sulfate is typically depleted in the center part of the plume and slightly elevated at the fringes with the exception of well MW-07-17D, indicating that sulfate reducing conditions are present. Sulfide was not detected in any of the wells. Given the landfill settings of the site, there are a variety of inorganic species in the aquifer that would rapidly precipitate any sulfide that would be generated. A detailed discussion of these parameters with respect to their significance in natural degradation of VOCs is presented in Section 6.4.3.1.

3.3.2.2 September – October 2010 Groundwater Sampling

A summary of the field measurements from the September - October 2010 groundwater sampling event are presented in Table 5. Laboratory analytical results for all wells sampled are presented in Table 6 and shown on Figure 7. Results from samples collected from wells at the downgradient (western) boundary of OU-1 are also presented. Sampling results are

compared to the NYSDEC Class GA Groundwater Quality Standards (GWQS). Results from all available OU-2 sampling events are presented on Figure 7. The results are discussed separately for each property. With the exception of MW-07-17D, in which chloroethane concentrations increased, the concentrations show a general decrease or are stable, when compared to previous data. These trends will be confirmed during future sampling events.

159 Hanse Avenue

Monitoring well couplets MW-97-2S / MW-98-10D and MW-97-1S / MW-98-9D are located along the western edge of the Former Columbia Cement property. MW-97-1S and MW-98-9D are west of the spill area. The highest chloroethane concentrations were detected in MW-98-9D at 790 µg/l and at 73 µg/l in MW-97-1S. These results exceed GWQS of 5 µg/l. The September 2010 concentrations represent a decrease from the 3,000 µg/l and 87 µg/l detected, respectively in MW-98-9D and MW-97-1S, detected in September 2009. Chloroethane was not detected in wells MW-97-2S and MW-98-10D, in the northwest corner of the 159 Hanse Avenue property in September 2010. Chlorobenzene was detected in shallow monitoring well MW-97-2S at 16 µg/l, which exceeds the GWQS of 5 µg/l. Chlorobenzene was detected at 3.5 µg/l in both wells MW-97-1S and MW-98-10D.

191 Hanse Avenue

In monitoring well MW-09-26D chlorobenzene was detected at 14 µg/l, which exceeds the GWQS of 5 µg/l. Chloroethane was detected below the GWQS at 4.2 µg/l. This represents a decrease from the 36 µg/l of chloroethane detected in September 2009. In October 2010, 1,4-dichlorobenzene was also detected in MW-09-26D at 2.1 µg/l which is below the GWQS of 5 µg/l.

162 Hanse Avenue

On October 13, 2010, two monitoring well couplets (MW-09-18S / MW-09-19D and MW-09-24S / MW-09-25D) along the northern edge of the Farber Plastics property (162 Hanse Avenue) were sampled. In the northeast corner of the property, chloroethane was detected in shallow well MW-09-18S and deep well MW-09-19D at 37 µg/l and 58 µg/l, respectively. These concentrations represent a decrease from the 77 µg/l and 170 µg/l detected in these wells in September 2009, respectively. Chlorobenzene was detected at 5.2 µg/l in MW-09-19D, but was not detected in MW-09-18S. 1,1-dichloroethane, which was detected at 4.1 µg/l in MW-09-19D in September 2009, was not detected in October 2010.

Wells MW-09-24S and MW-09-25D are located at the northeast corner of the 162 Hanse Avenue property, near Freeport Creek. In MW-09-24S, chloroethane, which had been detected at 11 µg/l in September 2009, was not detected in October 2010. Chlorobenzene, 1,4 dichlorobenzene and MTBE were detected in MW-09-24S at concentrations below their respective GWQS. Chloroethane (6.5 µg/l) and chlorobenzene (5.5 µg/l) were detected in well MW-09-25D at concentrations marginally above their GWQS of 5 µg/l, but below their September 2009 concentrations of 24 µg/l and 6.5 µg/l, respectively.

178 Hanse Avenue

Monitoring well couplet MW-05-14S / MW-05-15D is located west of the MW-97-1S / MW-98-9D well couplet, near the northeast corner of The Love & Quiches property (178 Hanse Avenue). Chloroethane was detected in wells MW-05-14S and MW-05-15D at 6.2 µg/l and 140 µg/l, respectively. No other VOCs were detected in these wells.

Downgradient, at the northwest corner of the property near Freeport Creek, is monitoring well couplet MW-07-16S / MW-07-17D. Chloroethane was detected in wells MW-07-16S and MW-07-17D at 13 µg/l and 31 µg/l, respectively. The 13 µg/l detected in MW-07-16S represents a decrease from the 52 µg/l detected in this well in September 2009. The 31 µg/l in MW-07-17D represents a decrease from the 140 µg/l in upgradient deep well MW-07-16D, but an increase from the 5.1 µg/l detected in September 2009.

Well couplets MW-09-20S / MW-09-21D and MW-09-22S / MW-09-23D are located in the southeast and southwest corners of the 178 Hanse Avenue property. No VOCs were detected in wells MW-09-20S or MW-09-21D. In September 2009, chloroethane (9.8 µg/l) and chlorobenzene (5.0 µg/l) were both detected in MW-09-21D. In well MW-09-22S, chlorobenzene was detected at 2.9 µg/l, but chloroethane was not detected. In well MW-09-23D, chlorobenzene was detected at 14 µg/l, which exceeds the GWQS of 5 µg/l. Chloroethane and 1,4-dichlorobenzene were detected at concentrations below the GWQS.

Sulfate was detected in wells MW-97-1S, MW-98-9D, MW-05-14S, MW-05-15D and MW09-19D at concentrations ranging from 25.6 mg/l to 106 mg/l. Sulfate was not detected in the other wells sampled.

3.3.2.3 October 2011 – January 2012 Groundwater Sampling

Laboratory analytical results from the October 2011 / January 2012 sampling event are presented in Table 7 and shown on Figure 7. Sampling results are compared to the NYSDEC Class GA Groundwater Quality Standards (GWQS). Results from all available OU-2 sampling events are presented on Figure 7. The results are discussed separately for each property.

159 Hanse Avenue

Monitoring well couplets MW-97-2S / MW-98-10D and MW-97-1S / MW-98-9D are located along the western edge of the Former Columbia Cement property. The only positive detection in either of these wells in October 2011 was chlorobenzene, which was detected at 13 µg/l in MW-97-2S. Chloroethane and acetone were not detected in either well. MW-97-1S and MW-98-9D are located near the southwest corner of the property, west of the spill area. ISCO pilot tests were conducted in this area in 2010 and 2011. In the last post-injection monitoring samples collected in January 2012, chloroethane was detected at 20 µg/l and 59 µg/l, respectively in MW-97-1S and MW-98-9D. Acetone was detected in MW-98-

9D at 95 µg/l, which exceeds the GWQS of 50 µg/l. Chloroethane was detected at 87 µg/l and 200 µg/l, resectively in deep wells OW-2 and OW-4 in the loading dock. No exceedences of the GWQS were detected in shallow wells OW-1 and OW-2

191 Hanse Avenue

In monitoring well MW-09-26D chlorobenzene was detected at 13 µg/l, which exceeds the GWQS of 5 µg/l. Chloroethane was detected above the GWQS, at 35 µg/l. Chloroethane had been detected in this well at 36 µg/l in September 2009, but at only 4.2 µg/l in October 2010. No other exceedences of the GWQS were detected in this well in October 2011.

162 Hanse Avenue

On October 10, 2011, two monitoring well couplets (MW-09-18S / MW-09-19D and MW-09-24S / MW-09-25D) along the northern edge of the Farber Plastics property (162 Hanse Avenue) were sampled. The chloroethane results from this sampling round were rejected during data validation and the wells were re-sampled in January 2012. In the northeast corner of the property in January 2012, chloroethane was detected in shallow well MW-09-18S at 130 µg/l, but was not detected at the laboratory detection limit in deep well MW-09-19D. The 130 µg/l represents an increase from the 37 µg/l detected in these October 2010, but the non-detect in MW-09-19D is a decrease from the 58 µg/l detected in October 2010. In MW-09-19D, 1,4-dichlorobenzene was detected at 130 µg/l in October 2011, but was not detected in January 2012. No other VOCs were detected in these wells in October 2010 or January 2012.

Wells MW-09-24S and MW-09-25D are located at the northeast corner of the 162 Hanse Avenue property, near Freeport Creek. In MW-09-24S, chloroethane was detected at 14 µg/l, after being detected at 11 µg/l in September 2009 and not detected in October 2010. Chloroethane was detected at 19 µg/l in MW-09-25D, after being detected at 24 µg/l in September 2009 and 6.5 µg/l in October 2010. No other VOCs were detected at their GWQS in October 2011 or January 2012 in these wells.

178 Hanse Avenue

Monitoring well couplet MW-05-14S / MW-05-15D is located west of the MW-97-1S / MW-98-9D well couplet, near the northeast corner of The Love & Quiches property (178 Hanse Avenue). Chloroethane was not detected in well MW-05-14S in January 2012, following a detrection of 6.2 µg/l in October 2010. Chloroethane was detected in MW-05-15D at 100 µg/l, a decrease from the 490 µg/l in September 2009 and 140 µg/l in October 2011. No other VOCs were detected above their GWQS in these wells in October 2011 or January 2012.

Downgradient, at the northwest corner of the property near Freeport Creek, is monitoring well couplet MW-07-16S/MW-07-17D. Chloroethane was detected in wells MW-07-16S and MW-07-17D at 42 µg/l and 55 µg/l, respectively. These concentrations represent increases from the 13 µg/l and 31 µg/l, respectively, detected in these wells in October 2011.

Chlorobenzene was also detected in MW-07-16S and MW-07-17D at 7.6 µg/l and 14 g/l, respectively, in October 2011.

Well couplets MW-09-20S / MW-09-21D and MW-09-22S / MW-09-23D are located in the southeast and southwest corners of the 178 Hanse Avenue property. Chloroethane was detected in MW-09-21D at 21 µg/l in October 2011, but was not detected at laboratory detection limits in the other wells in this area. Chlorobenzene was detected in MW-09-21D and 1,4-dichlorobenzene was detected in MW-09-20S, MW-09-21D and MS-09-23, but at levels below their respective GWQS.

Hanse Avenue

Monitoring well MW-13S was sampled in October 2011. 1,1-dichloroethane was detected at 5.1 µg/l, which marginally exceeds the GWQS of 5 µg/l. No other VOCs were detected above their GWQS. The COC chloroethane was not detected.

3.4 TIDAL MONITORING

Tidal monitoring was conducted from December 2 to December 4, 2009. Water levels were monitored in wells MW-97-1S, MW-98-9D, MW-05-14S, MW-05-15D, MW-09-18S, MW-09-19D, MW-09-24S and MW-09-25D. Surface water levels were also measured in Freeport Creek near wells MW-09-24S and MW-09-25D. Barometric pressure was monitored over the same period so that water levels could be corrected for barometric pressure effects.

Serfes (1991) found that hydraulic gradients of tidally influenced groundwater can be determined by calculating mean groundwater elevations over a 25-hour period. The mean hydraulic gradient over a 25-hour period approximates the overall groundwater flow direction and gradient. For this purpose, the interval between 14:00 on December 2, 2009 and 15:00 on December 3 was chosen for analysis. A graph water of levels over this period is presented on Figure 8. A summary of tidal monitoring results is presented in Table 8. All of the wells monitored displayed tidal influence, which was greater in wells closer to Freeport Creek. The tidal range in Freeport Creek was 5.41 feet; the range in MW-09-24S and MW-09-25D was approximately 3 feet; while the tidal range in the remaining wells along Hanse Avenue was between 0.41 feet and 0.59 feet. The lag time between high or low tides in Freeport Creek and those on Hanse Avenue was generally about 1 hour.

At low tide, groundwater flow is to the west (toward Freeport Creek) and the hydraulic gradient between Hanse Avenue and Freeport (across OU-2) was 2.3×10^{-3} ft/ft, which is very low and similar to gradients observed in OU-1. At high tide, the elevation of Freeport Creek is higher than the elevation of the OU-2 wells and groundwater flow is to the east (toward OU-1) with a hydraulic gradient of 6.67×10^{-3} ft/ft. When the mean tide is calculated from this data, the overall groundwater flow gradient and direction at OU-2 is 2.33×10^{-3} ft/ft toward the west. This indicates that the overall flow direction at OU-2 is to the

west (from OU-1 toward OU-2), but with a very low hydraulic gradient. Groundwater elevation contour maps for low tide, high tide and mean tide are presented as Figures 9 through 11, respectively

3.5 SURFACE WATER AND SEDIMENT SAMPLING

Surface water and sediment samples were collected from six locations in Freeport on November 17, 2009 based on the October 20, 2009 sampling plan, approved by NYSEDC on October 30, 2009. Sample locations are shown in Figure 12. The samples were analyzed for chloroethane and chlorobenzene, as these compounds were detected in wells adjacent to Freeport Creek (Section 3.2.2). The surface water and sediment sample results are presented in Table 9. Chloroethane and chlorobenzene were not detected in any of the surface water or sediment samples at the laboratory detection limits.

These results confirm those from the surface water and sediment samples collected by Delaware Engineering in 2000. In addition, the results demonstrate that constituents detected in OU-2 groundwater are not impacting Freeport Creek.

3.6 VAPOR INTRUSION SAMPLING

Vapor intrusion samples were collected at three OU-2 properties. On March 12, 2009, sub-slab vapor and indoor air samples were collected at 162 Hanse Avenue and 191 Hanse Avenue. As agreed to by NYSDEC and NYSDOH, outdoor sub-slab vapor samples and an ambient air sample were collected at 272 Buffalo Avenue on November 12, 2009. Sampling results are presented in Table 10 and are shown on Figure 13.

162 Hanse Avenue

At 162 Hanse Avenue, paired sub-slab vapor and indoor air samples were collected at two locations. An area along the northern side of the 162 Hanse Avenue building contains a machine shop. An inventory of the products stored in this area revealed various lubricants, degreasers, cleaners and adhesives that contain many of the chemicals identified in the building's indoor air.

A duplicate indoor air sample and an outdoor ambient air sample were also collected. The compounds detected in the sub-slab vapor samples (SS-162-01 and/or SS-162-02) include acetone, 1,1-DCA, Freon-114, methyl ethyl ketone, pentane, PCE, toluene, 1,1,1-TCA and vinyl chloride. The compounds detected in the indoor air samples (IA-162-01 and/or IA-162-02) include acetone, benzene, carbon tetrachloride, ethylbenzene, methylene chloride, PCE, toluene, TCE, and xylene isomers. The only compounds detected in the ambient air sample were carbon disulfide and toluene.

Chloroethane and chlorobenzene were detected in the groundwater screening and monitoring well samples collected at 162 Hanse Avenue, but were not detected in the vapor intrusion samples. Therefore, the groundwater impacts originating at OU-1 have not impacted sub-slab vapor or indoor air at 162 Hanse Avenue.

191 Hanse Avenue

At 191 Hanse Avenue, paired sub-slab vapor and indoor air samples were collected at two locations. The compounds detected in the sub-slab vapor samples (SS-191-01 and/or SS-191-02) include acetone, benzene, ethylbenzene, heptane, hexane, methylene chloride, methyl ethyl ketone, pentane, PCE, toluene, 1,1,1-TCA and xylene isomers. The compounds detected in the indoor air samples (IA-191-01 and/or IA-191-02) include benzene, carbon tetrachloride, pentane and toluene. Carbon tetrachloride was detected in both indoor air samples at concentrations similar to the ambient air sample collected at 162 Hanse Avenue. PCE, TCE and 1,1,1-TCA were not detected in the indoor air.

Wells MW-97-1S and MW-98-9D are located adjacent to the 191 Hanse Avenue building, about 120 feet from samples SS-191-02 and IA-191-02. Well MW-09-26D and groundwater screening point GW-09 are located about 100 feet from samples SS-191-01 and IA-191-01.

The only VOCs detected in groundwater samples from these locations in 2008 and 2009 are chloroethane and chlorobenzene. These compounds were not detected in sub-slab or indoor air samples at 191 Hanse Avenue; therefore the groundwater impacts originating at OU-1 have not impacted sub-slab vapor or indoor air at 191 Hanse Avenue.

272 Buffalo Avenue

At 272 Buffalo Avenue, two sub-slab vapor samples (SS-272-01 and SS-272-02) were collected beneath the concrete pavement outside the site building. One ambient air sample was collected adjacent to SS-272-01. The compounds detected in the sub-slab vapor samples include acetone, 1,1-DCA, cis-1,2-DCE, trans-1,2-DCE, Freon 114, heptane, hexane, methyl ethyl ketone, pentane, PCE, toluene, 1,1,1-TCA and TCE. The compounds detected in the ambient air sample (AA-272-01) include acetone, methyl ethyl ketone, pentane and toluene.

In 2005, soil gas sampling was conducted at OU-1 (URS, 2007). Soil gas sampling point SG-05-02 is located approximately 45 feet southwest of SS-272-01. Compounds detected in SS-272-01, but not detected in SG-05-02 include cis-1,2-DCE, trans-1,2-DCE, methyl ethyl ketone and pentane. Also, 1,1-DCA was detected in SG-05-02 at 9,470 $\mu g/m^3$, over 4 orders of magnitude higher than in SS-272-01.

The TCE concentration in SS-272-02 (86 $\mu g/m^3$) is more than an order of magnitude greater than the TCE concentration in SS-272-01 (5.9 $\mu g/m^3$), although SS-272-01 is 80 feet closer to the OU-1 spill area. Of the four compounds detected in both SS-272-01 and SS-272-02, all four had higher concentrations in SS-272-02. This data suggests that the compounds detected could be from a source other than the OU-1 spill area.

In OU-1 the original spill contaminant was 1,1,1-TCA and it has subsequently degraded to its daughter products 1,1-DCA and chloroethane. Within OU-2;

- 1,1,1-TCA has not been detected in groundwater at OU-2; 1,1-DCA has detected sporadically in 2 wells at OU-2.
- Chloroethane has been detected in groundwater throughout OU-2.
- Chlorobenzene is also present, although there is no record of use or storage at the Site and its distribution does not suggest an on-site point source.
- Acetone has been detected in wells at the downgradient boundary of OU-1 but, to date has not been detected in OU-2.

Therefore, this discussion will focus on the fate and transport of chloroethane. If subsequent data show impacts of acetone in OU-2, its fate and transport will be discussed.

Contaminant fate and transport is controlled by physical, chemical and biological processes including advection, dispersion, sorption, desorption, volatilization, dehalogenation and hydrolysis. From the downgradient border of OU-1, several factors affect the fate and transport of contaminants as they move further downgradient. Some factors related to the contaminants themselves include solubility, density, volatility (vapor pressure and Henry's Law constant), biodegradability, and organic carbon partition coefficient. Important factors related to the aquifer environment include aquifer hydraulic conductivity, hydraulic gradient, soil organic carbon content, groundwater geochemistry (pH, dissolved oxygen, redox potential), subsurface microbial population, and the presence of other compounds (either beneficial or toxic). A summary of the physical properties of the contaminants of concern at OU-2 is presented in Table 11.

Solubility is the amount of a compound that will dissolve into water. Compounds with higher solubilities will tend to dissolve into groundwater and be transported with flowing groundwater. Compounds that are highly soluble tend to partition into the liquid phase rather than sorbing onto soil or volatilizing. As groundwater flows past the contaminant ganglia, the more soluble compounds will dissolve into the groundwater, while the less soluble compounds will remain in the pore spaces or sorbed onto soil particles. As indicated on Table 11, the chlorinated VOCs of concern at the site are soluble, chloroethane being the most soluble of the three.

The Henry's Law constant for a compound indicates the tendency of a compound to partition between the vapor and liquid phases. Compounds with high Henry's Law constants will tend to volatilize into the vapor phase. Chloroethane has a fairly high Henry's Law constants that would suggest they would partition readily into the vapor phase. The absence of chloroethane in OU-2 sub-slab vapor samples at locations where it is present in groundwater is likely due to the fact that at most location, the greatest concentrations are in deeper wells, where it is less subject to volatilization.

The octanol/water partitioning coefficient (K_{ow}) reflects the tendency of a compound to partition between octanol and water at equilibrium. Octanol is seen as a surrogate for natural organic matter and the K_{ow} is used to predict the tendency of a compound to bioaccumulate. The K_{ow} of chloroethane indicates that it does not significantly bioaccumulate.

The organic carbon partition coefficient (K_{OC}) indicates the tendency of an organic compound to sorb onto organic matter rather than dissolving into groundwater. Compounds with a high K_{OC} will sorb onto soil organic material, which slows release of residual contamination into groundwater and also slows transport. The degree of sorption related to the compound's K_{OC} is also a factor of the amount of solid phase organic matter in the saturated zone. As a result of retardation, contaminant sources remain active for longer periods of time and contaminant transport rates are decreased. This retardation is expressed as the "retardation factor." In simplest terms, the retardation factor (R) can be defined as:

$$R = \frac{V}{V_c} \qquad \text{Eq. 4-1}$$

where,
R = retardation factor
V = average groundwater seepage velocity
V_c = average contaminant transport velocity.

This equation describes the transport velocity of a contaminant relative to groundwater flow velocity. The retardation factor can also be described as:

$$R = 1 + \frac{\rho_b K_d}{n} \qquad \text{Eq. 4-2}$$

where,
ρ_b = bulk density of the aquifer
K_d = distribution coefficient
n = porosity.

The distribution coefficient can be described as

$K_d = K_{oc} \times f_{oc}$
where,
f_{oc} = the organic carbon content of the aquifer material.

The K_{OC} of chloroethane is below 10, indicating it is very weakly sorbed and will not be retarded to a significant extent. Table 12 displays calculated contaminant retardation factors and transport velocities, based on the equations above and values reported in previous section of this RIR and the OU-1 Supplemental RI (URS, 2006). Also included on Table 12 are the estimated travel times estimated for individual contaminants from Hanse Avenue area to the Freeport Creek based on these computed values. As shown on Table 12 the estimated travel time for chloroethane is. 3.1 years, compared to the groundwater flow time of 3.0 years. This suggests that if contaminant levels at the downgradient edge of OU-1 are significantly reduced, this would result in cleanup of OU-2 groundwater in a fairly short period of time.

4.1 SUMMARY

- The Henry's Law Constants of the contaminants of concern suggest they will volatilize, but since the highest concentrations are in deeper groundwater, this is limited, as evidenced by their absence in sub-slab vapor.

- The K_{OC} of chloroethane indicates it does not have a high affinity to sorb to organic matter, and their transport is not retarded to a significant extent.

- The K_{OW}s of the COCs suggest they do not tend to bioaccumulate.

- The anaerobic conditions prevalent in the shallow groundwater suggest natural degradation of chloroethane will be slow.

- Because of the short transport times from Hanse Avenue to Freeport Creek (3.1 years), remedial measures at OU-1 will result in rapid constituent reductions in OU-2.

The purpose of a human health exposure assessment (HHEA) is to identify pathways by which human populations may be exposed to site-related contaminants. The HHEA includes an evaluation of existing site conditions, as well as conditions of surrounding areas and uses, and potential exposure pathways by which site contaminants may impact receptor populations. The HHEA also includes projections of future uses of the site and surrounding areas and resulting potential exposure pathways.

An exposure pathway is process by which Site contaminants may potentially impact a receptor population. An exposure pathway includes these five elements:

1. **Contaminant Source:** a source or sources where contaminants are released into the environment;
2. **Environmental media and transport mechanism:** environmental media include media to which contaminants are released and/or may be transported to receptors. These media include surficial soil, subsurface soil, groundwater, air, surface water, sediment or waste materials;
3. **Point of exposure:** an actual or potential location of human contact with Site contaminants, including businesses, residences, recreational areas, water bodies, surface water or groundwater withdrawal points, etc.;
4. **Route of exposure:** the process by which the contaminant could potentially enter a human body. These routes of exposure include ingestion, inhalation and dermal contact;
5. **Receptor population:** persons at the point of exposure who could potentially be exposed to site contaminants.

A completed exposure pathway provides a connection between a contaminant source and a receptor population and must include all five elements listed above. If one of the elements is not present, the exposure pathway is not complete and there is no potential for a human exposure. An evaluation of each of these elements with respect to OU-2 contaminants is presented in the following sections:

5.1 CONTAMINANT SOURCE

The contaminants identified at OU-2 consist of dissolved chloroethane and chlorobenzene in groundwater. The original source of OU-2 chloroethane contamination is the 1988 spill of 1,1,1-TCA at OU-1. The source of the chlorobenzene is not known, but groundwater chlorobenzene concentrations are greater along the west side of OU-1 and in OU-2 than in the OU-1 spill area. The chlorobenzene distribution and the fact that OU-1 and OU-2 are largely underlain by a former landfill suggest that the chlorobenzene source is not related to releases at OU-1.

5.2 ENVIRONMENTAL MEDIA AND TRANSPORT MECHANISM

Environmental media that people could typically be exposed to include soil, groundwater, surface water and sediment. Section 3.0 provides a detailed description of affected environmental media at OU-2. An evaluation of these media with respect to exposure pathways is presented in the following sections.

5.2.1 Groundwater

As described in Section 3.0, groundwater at OU-2 has been impacted by chloroethane. In September and October 2010, groundwater from shallow wells MW-05-14S, MW-07-16S, and MW-09-18S contained chloroethane at concentrations exceeding NYSDEC GWQS. During the same sampling event, chloroethane was detected at levels exceeding the GWQS in deep wells MW-05-15D, MW-07-17D, MW-09-19D, MW-09-23D, MW-09-25D and MW-09-26. The data indicates that the impacts are more widespread and at higher levels in the deeper portion of the gravelly sand unit. At 272 Buffalo Avenue, no groundwater data is available. However, groundwater data collected at OU-1 well MW-98-8D indicated that 1,1,1-TCA, 1,1-DCA, 1,1-DCE, chloroethane and vinyl chloride are present near the 272 Buffalo Avenue boundary at levels exceeding the NYSDEC GWQS.

5.2.2 Sub-Slab Vapor and Indoor Air Data

Sub-slab vapor samples collected at OU-2 properties south and west of OU-1 (191 and 162 Hanse Avenue) did not include any detections of any of the VOCs detected in groundwater in the same area (chloroethane and chlorobenzene), therefore, soil vapor in these areas is not impacted. Similarly, these compounds were not detected in indoor air in these properties. No sub-slab vapor or indoor air samples were collected at 178 Hanse Avenue because access was not granted for sampling. At 272 Buffalo Avenue, sub-slab vapor samples collected beneath outdoor pavement contained VOCs detected in OU-1 soil and groundwater, but no indoor air samples were collected because of access restrictions.

5.2.3 Freeport Creek Surface Water and Sediment Data

The groundwater hydraulic gradient at OU-2 indicates that, although there are variations due to tidal fluctuations, the average groundwater flow direction at OU-2 is to the west, toward Freeport Creek. Delaware Engineering collected surface water and sediment data in Freeport Creek in 2000. These samples were collected at the stormwater outfall to Freeport Creek, as well as upstream and downstream from the outfall. During this sampling event, no COCs were detected in any of the surface water samples collected. The only detection in the sediment samples of a compound listed as a COC for OU-1 was a detection of 1,1,1-TCA approximately 200 feet south of the outfall, at 9 µg/kg.

In 2009, URS collected surface water and sediment samples in Freeport Creek immediately west of OU-2, as well as upstream and downstream of OU-2. The six surface water and six

sediment samples were analyzed for chloroethane and chlorobenzene and neither compound was detected in any sample above laboratory detection limits (Section 3.4).

5.3 POINT OF EXPOSURE

The point of exposure is the point at which people could come into contact with a contaminated environmental medium. The point(s) of exposure will depend on the impacted media, and local land and natural resource use.

5.3.1 Local Land Use and Natural Resource Use

The land use at OU-2 and surrounding areas is a mixture of industrial and commercial and can reasonably be expected to continue as such for the foreseeable future. The OU-2 properties on Hanse Avenue and Buffalo Avenue consist of industrial manufacturing facilities, warehouses and commercial facilities. Some residential homes are located approximately 750 feet north of OU-2 on St. Mary's Place. On the west side of Freeport Creek, several marinas and commercial properties line Freeport Creek. A residential community is located west of these properties. Freeport Creek, in the vicinity of OU-2 is utilized for recreational boating and fishing.

5.3.2 Environmental Media

As described in Section 5.2, the environmental media that could be part of an exposure pathway include groundwater, soil vapor, surface water and sediment. In addition, consumption of fish and shell fish from Freeport represent a potential exposure point.

Data indicates that OU-2 groundwater is impacted by Site contaminants of concern. OU-2 groundwater is encountered in the water table aquifer which encompasses a sand unit, as well as the former municipal landfill debris, tidal marsh deposits (peat) and fill material, and extends to a depth of approximately 35 feet. Freeport Creek is also located along the southern shore of Long Island and subject to salt water encroachment. For these reasons, the water table aquifer at OU-2 is not utilized for water supply. The Village of Freeport obtains its water supply from 11 supply wells at least 1 mile upgradient from OU-2, drilled into the Magothy Aquifer, ranging from 500 to 700 feet below grade. Therefore, OU-2 groundwater does not represent a point of exposure, and based on the setting of OU-2 shallow groundwater, it is reasonable to assume it will not be utilized in the future as a potable water supply.

Since groundwater is encountered approximately 5 to 6 feet below grade, primarily under paved areas, the potential for human contact is minimal, with the exception of potential excavation activities that may intercept the saturated zone. The groundwater from OU-2 discharges to Freeport Creek. As described in Section 5.2.3, Freeport Creek surface water is not impacted by Site contaminants. Therefore, OU-2 groundwater does not represent a completed exposure pathway to Site related contaminants.

Since Freeport Creek is utilized for recreational boating and fishing, surface water and sediment in Freeport represent a potential for dermal and/or ingestion exposures. However, since sampling data indicates that surface water and sediment are not impacted by OU-2 contaminants of concern, these media are not part of a completed exposure pathway. Similarly, Freeport Creek fish and shellfish do not currently represent a potential point of exposure. Since the spill occurred in 1988, it is unlikely that surface water and sediment will be further degraded in the future from OU-2 contaminants.

At 162 Hanse Avenue and 191 Hanse Avenue, site-related contaminants were not detected in sub-slab vapor or indoor air, indicating that vapor intrusion in these building is currently not a completed exposure pathway. Given the fact that the 1,1,1-TCA spill occurred in 1988 and that remedial activities have been implemented at OU-1, it is unlikely that the vapor intrusion exposure pathway will be completed in the future. No sub-slab vapor or indoor air sampling was conducted at 178 Hanse Avenue, so the condition at this property is not known, although given that groundwater VOC concentrations below 178 Hanse Avenue are similar to those at 162 Hanse Avenue, sub-slab vapor concentrations could reasonably be expected to be similar also. At 272 Buffalo Avenue, outdoor sub-slab vapor (shallow soil gas) samples collected outside the site building contained compounds detected in soil and groundwater in the OU-1 spill area. However, because of access restrictions, no sub-slab vapor samples beneath the site building or indoor air samples were collected. Therefore, no data is available to further evaluate this pathway.

5.4 RECEPTOR POPULATIONS

The potential receptor populations for OU-2 are based on current and projected future land use in and around OU-2. As described above, the current land use in the area is industrial/commercial. There are several marinas on the west side of Freeport Creek, but since the sampling data indicates that surface water is not impacted by Site COCs, the marinas do not represent receptor populations.

Indoor air sampling data from 162 Hanse Avenue and 191 Hanse indicate that workers in these buildings do not currently represent a receptor population. Due to access restrictions, no indoor air data sampling was conducted at 178 Hanse Avenue or 272 Buffalo Avenue. Although the construction of these buildings, which consists of a concrete floor slab, will minimize movement of any sub-slab vapors into the building, workers in these buildings would represent potential receptor populations. It should be noted that as of January 2011, the 272 Buffalo Avenue has been vacant since December 2009. Groundwater VOC concentrations at 178 Hanse Avenue are similar to those at 162 Hanse Avenue where chloroethane and chlorobenzene were not detected in sub-slab vapor or indoor air, so similar conditions can reasonably be expected at 178 Hanse Avenue.

Based on available data, no completed exposure pathways are currently identified at OU-2 so there are no receptor populations. A potential receptor population would be workers at these properties engaged in excavation activities that intercept the shallow groundwater

(approximately 5 to 6 feet below grade.). These exposures could be mitigated through the use of appropriate personal protective equipment during excavation.

5.5 ROUTE OF EXPOSURE

An exposure route is a means by which contaminants can enter the body. Typical potential routes of exposure include:

Water

1. Direct ingestion
2. Dermal or ocular contact

Soil and/or Sediment

1. Direct ingestion (primarily by young children)
2. Dermal or ocular contact
3. Inhalation of dust
4. Inhalation of volatilized chemicals

Air

1. Inhalation
2. Dermal or ocular contact

Biota / Food Chain

1. Ingestion of products impacted by intake of contaminated water, soil/sediment or air
2. Dermal or ocular contact with contaminated products.

The routes of exposure are dependent on several factors discussed in the preceding sections, including land use, environmental media, point of exposure and receptor populations. As discussed in these sections, there are currently no identified completed human exposure pathways.

5.6 SUMMARY

This section summarizes the HHEA for OU-2 of the Former Columbia Cement Company Site. The contaminant source is dissolved phase VOCs in groundwater migrating from OU-1 to OU-2. Contaminants of concern include chloroethane and chlorobenzene. The environmental media evaluated include groundwater, soil vapor and Freeport Creek surface water and sediment. A summary for reach of these media is presented below.

5.6.1 Groundwater

Sampling data indicate that groundwater at 162, 178 and 191 Hanse Avenue is impacted by chloroethane and chlorobenzene. No groundwater data is available from 272 Buffalo

Avenue but groundwater sampling data from OU-1 wells near the property boundary indicate that impacts are possible. Groundwater in the area is saline and the saturated zone includes former landfill debris, so no potable water supply wells are present near the Site and are not likely to be installed in the foreseeable future. Public water supply wells are located some distance from the site and receive water from the Magothy aquifer, approximately 500 to 700 feet below grade. OU-2 groundwater discharges to Freeport Creek, but sampling data indicates that the groundwater has not impacted Freeport Creek surface water quality. For these reasons, there is no current point of exposure and, therefore, no completed exposure pathway associated with groundwater. One potential exposure would be to workers at an excavation that intercepts the water table within the limits of the plume. Exposures for this pathway could be mitigated through the use of personal protective equipment.

5.6.2 Freeport Creek Surface Water and Sediment

The west side of Freeport is lined by several marinas. Freeport Creek and downstream water bodies are utilized for recreational boating and fishing. Surface and sediment data collected by Delaware Engineering in 2000 and by URS in 2009 both indicate that OU-2 contamination has not impacted Freeport Creek surface water or sediment quality. Therefore, the surface water and sediment, as well as fish and shellfish collected in Freeport Creek do not represent a completed exposure pathway. Based on the fact that the OU-1 spill occurred in 1988 and that remedial measures are being implemented at OU-1, it is unlikely that future impacts will create a completed exposure pathway in these media.

5.6.3 Soil Vapor

Sub-slab vapor and indoor air samples collected at 162 Hanse Avenue and 191 Hanse Avenue indicate that VOCs originating from the 1,1,1-TCA spill at OU-1 are currently not impacting either sub-slab vapor or indoor air in these buildings. Due to access restrictions, no sub-slab vapors or indoor air samples were collected at 178 Hanse Avenue. Because there are groundwater chloroethane and chlorobenzene impacts at the 178 Hanse Avenue property, there is a potential for sub-slab vapor and/or indoor air sampling at this property, although similar groundwater conditions at 162 Hanse Avenue suggest a similar lack of sub-slab vapor impact. At 272 Buffalo Avenue, outdoor sub-slab vapor (shallow soil gas) samples collected outside the site building contained compounds detected in soil and groundwater in the OU-1 spill area. The sub-slab vapor near the 272 Buffalo Avenue building had higher VOC concentrations than the sample collected near the OU-1 property boundary. However, due to access restrictions, no sub-slab vapor samples beneath the 272 Buffalo Avenue site building or indoor air samples were collected. Therefore, the conditions within this building are not known and there is a potential for sub-slab vapor and/or indoor air exposure at this property. The 272 Buffalo Avenue building is currently vacant. All of the buildings at the OU-2 properties where RI activities occurred are constructed on concrete slabs, so the potential for vapor migration into the buildings is limited. Based on available data, soil vapor / indoor is not currently a completed exposure pathway at OU-2.

The purpose of the FWIA is to evaluate whether site-related contaminants have, or have the potential to impact ecological receptor populations. The FWIA consists of a Site Description (Step 1) and a Pathway Analysis (Step 2). Similar to the HHEA, the FWIA Pathway Analysis includes a description of contamination sources and a list of the contaminants of concern, identification of potential ecological receptors and an evaluation of pathways by with the contaminants of concern could impact the receptors. Ecological receptors can only be affected by contaminants if two conditions are met: 1) A pathway by which fish and wildlife can be exposed to contaminants must exist (i.e. a completed exposure pathway); and 2) the contaminants within the pathway must exist at levels sufficient to cause an impact.

6.1 2003 FWIA

Delaware Engineering conducted a Fish and Wildlife Impact Assessment that was included in the Draft Remedial Investigation Report for the Columbia Cement Company Site in March 2001. This RIR was submitted prior to NYSDEC dividing the Site into OU-1 and OU-2. Delaware Engineering submitted revised RIRs in July 2003 and December 2003. The NYSDEC Division of Fish and Wildlife accepted the findings of Delaware Engineering's FWIA. Because of the proximity of OU-1 and OU-2, NYSDEC has agreed that the previous FWIA may be used as a basis for an FWIA updated with newly collected data. The FWIA section from the 2003 RIR is presented as Appendix E. The following sections presents a summary of the 2001 FWIA and an updated evaluation of the findings of that FWIA with respect to data collected during the OU-2 Remedial Investigation

6.1.1 Site Description

The existing FWIA (Delaware Engineering, 2003) provided a Site Description, which included a review of site topography and drainage, local land use, a review of New York State regulated wetlands and potential wildlife habitats within one-half mile of the site and identification of potential fish, wildlife and plant species in the area. Because of the highly developed nature of the area, leaving little open space, along with development along both Freeport Creek and Stadium Park Canal, very little fish and wildlife habitat was identified near the site. Within one-half mile of OU-2, the banks of Freeport Creek have been developed with bulkheads and are occupied by industrial and commercial facilities or marinas. Tidal wetlands are present within one-half mile of OU-2 along Stadium Park Canal, in East Bay, on Fighting Island and in Cow Meadow Preserve. Due to the setting, these tidal wetlands are likely of moderate quality.

6.1.2 Pathway Analysis

The components of an exposure pathway include: 1) a contaminant source; 2) contaminants of concern; 3) potential pathways of contaminant migration; and 4) habitats and fish and wildlife resources that could potentially be impacted by the contaminants of concern. As presented in the 2003 FWIA, the contaminant sources included soil, storm drain sediment and groundwater impacts at OU-1 and the contaminants of concern include the VOCs related

to the 1988 TCA spill and other site-related contaminants. Based on the fact that the OU-2 land surface is largely paved, the only potential exposure point for fish and wildlife identified in the 2003 FWIA is Freeport Creek surface water and sediment. As described in Section 4.2.3, the results of surface water and sediment sampling conducted in 2000 indicated that contamination originating from OU-1 has not adversely impacted Freeport Creek surface water and sediment. Based on these conditions, Delaware Engineering concluded that ecological receptors associated with Freeport Creek have not been significantly impacted by contamination from OU-1 and that, based on the age of the releases, OU-1 did not represent a potential threat to Freeport Creek fish and wildlife habitats.

6.2 FWIA UPDATE

This section presents an update to the FWIA presented in the 2003 OU-1 RIR. This update focuses only on aspects applicable to OU-2 and incorporates relevant data collected since the 2003 RI. The site description provided in the 2003 FWIA is still applicable as land use in the area has not changed notably since 2003. As such, the only potential ecological receptor habitats are those associated with Freeport Creek.

The pathway analysis for OU-2 differs from that for OU-1. Whereas contaminant sources in the existing FWIA included subsurface soils and storm drains at OU-1 as contaminant sources, the only contaminant source associated with OU-2 is shallow groundwater migrating from OU-1 toward OU-2. The contaminants of concern consist of chloroethane, a daughter product related to the 1,1,1-TCA spill, and chlorobenzene. Again, since OU-2 is largely paved, the only potential point of exposure for ecological receptors is Freeport Creek, where shallow OU-2 groundwater discharges. Sampling conducted by Delaware Engineering in 2000 indicated that Freeport Creek habitats had not been significantly impacted through releases from the storm sewer associated with the 1,1,1-TCA spill. In 2009, URS collected surface water samples and sediment samples at six locations in Freeport Creek, immediately west of OU-2. The samples were analyzed for chloroethane and chlorobenzene. Chloroethane and chlorobenzene were not detected at laboratory detection limits in any of the six surface water or sediment samples collected (Section 3.4).

The 2003 FWIA concluded that contamination originating from OU-1 had not impacted nearby ecological receptors, namely Freeport Creek and associated habitats. This FWIA update narrowed the focus to OU-2 groundwater discharging to Freeport Creek and included an evaluation of data from surface water and sediment samples collected in 2009. Based on this evaluation, groundwater impacts at OU-2 have not had significant impacts on ecological habitats in Freeport Creek. In addition, considering the age of the OU-1 release and the implementation of remedial measures at OU-1, it is not likely that OU-2 groundwater impacts represent a potential future threat to fish and wildlife habitats in Freeport Creek. A completed Fish and Wildlife Resource Impact Analysis Decision Key (Appendix 3C of DER-10) is included in Appendix E. Based on available data, a Fish and Wildlife Resources Impact Analysis is not needed at this time.

BP conducted a RI at four offsite properties and public right-of-way adjacent to and near the former Columbia Cement Company site (OU-1) at 159 Hanse Avenue in Freeport, New York. The objective of the RI was to assess impacts to human and ecological receptors resulting from a release of 1,1,1-TCA at OU-1. The RI included groundwater screening, installation of groundwater monitoring wells, groundwater sampling, soil vapor intrusion assessment, surface water and sediment sampling in Freeport Creek and tidal monitoring. A summary of the Remedial Investigation sampling data is presented as Table 13.

7.1 GROUNDWATER

The spill of 1,1,1-TCA resulted in soil and groundwater contamination in the southeast portion of OU-1. The RI conducted at OU-1 revealed that soil and groundwater impacts from several other compounds were present in the spill area. The OU-2 RI focuses on select COCs that represent spill-related compounds (1,1,1-TCA, 1,1-DCA, chloroethane). Acetone, although not detected in OU-2 groundwater to date, could potentially migrate from OU-1 to OU-2, and as discussed with NYSDEC, is included in the Site COCs. Other compounds detected in and near OU-2 that will be monitored during future sampling events include chlorobenzene. Chlorobenzene has been detected throughout OU-2, although it is not related to the spill event and there is no record of storage or use at OU-1.

Groundwater at OU-1 and OU-2 is tidally influenced, but primarily flows to the west (Delaware Engineering, 2003). The soils beneath the site include peat and municipal landfill material. These materials have created very anaerobic groundwater conditions, which are conducive to the breakdown of 1,1,1-TCA. The reductive dechlorination of 1,1,1-TCA yields 1,1-DCA, which subsequently breaks down to chloroethane by the same process. As the sequential dechlorination proceeds, the less chlorinated ethane is relatively more difficult to degrade under reducing and anerobic conditions compared to the parent compound. Chloroethane follows the same path and it is relatively easy to degrade it under aerobic and oxic conditions. In groundwater monitoring wells at the western boundary (MW-97-1S and MW-98-9D) and southern (MW-97-6S), chloroethane is the only spill-related compound detected. Chlorobenzene is also detected but it is not related to any chemicals known to have been used at OU-1 and its distribution is erratic. Therefore, the only spill-related compound migrating toward OU-2 to the west and south is chloroethane.

Forty-five groundwater screening samples were collected at nine locations in December 2008 and were analyzed for 1,1,1-TCA, 1,1-DCA, chloroethane, chlorobenzene, and methylene chloride. The only compounds detected in the groundwater screening samples were chloroethane and chlorobenzene. This further indicates the only potentially spill-related compound migrating from OU-1 toward the west is chloroethane.

Based on the results of the groundwater screening samples, nine monitoring wells were installed at three OU-2 properties. These newly installed wells, four previously existing OU-2 wells and four OU-1 wells were sampled in September 2009. In four wells on the east side of Hanse Avenue, only chloroethane and chlorobenzene were detected. The highest chloroethane concentration detected was 3,000 µg/l in MW-98-9D. In six wells on the west

side of Hanse Avenue, chloroethane, chlorobenzene and 1,1,-DCA were detected. 1,1-DCA was detected in only one well (MW-09-19D) at a concentration below the GWQS. The highest chloroethane concentration was 170 µg/l. In six wells along Freeport Creek, chloroethane was detected at concentrations up to 52 µg/l and chlorobenzene was detected at concentrations up to 13 µg/l.

The highest chloroethane concentrations were detected along the centerline of the plume (MW-98-9D, MW-05-15D and MW-07-16S). Lower concentrations were detected along the northern edge of the plume (MW-09-25D) and along the southern edge of the plume (MW-09-23D), effectively defining the width of the chloroethane impacts. The distribution of chlorobenzene, however, does not follow a plume-type pattern. In some cases, the chlorobenzene concentrations were higher at the plume edges (MW-97-2S and MW-09-23D) than in the center of the plume (MW-98-9D) where the highest chloroethane concentrations are found. This distribution indicates that the source of the chlorobenzene is not related to a point source release at OU-1, like the chloroethane. In fact, the chlorobenzene concentrations detected in offsite wells are greater than any that have been detected in OU-1 source area wells. and 2011 in the ISCO pilot test area, but has not been detected in any OU-2 wells.

During the 2009 groundwater sampling, chloroethane was detected in eight OU-2 monitoring wells. In seven of these eight wells, chloroethane was detected at lower concentrations or not detected during the 2010 sampling event. In eight of the ten OU-2 wells in which chlorobenzene was detected in 2009, the concentration detected in 2010 was lower or not detected. In the October 2011 / January 2012 sampling, chloroethane was detected in 8 of 14 OU-2 wells at levels exceeding the GWQS.

As stated previously, OU-2 groundwater is encountered in the water table aquifer which encompasses a sand unit, as well as the former municipal landfill, tidal marsh deposits (peat) and fill material, and extends to a depth of approximately 35 feet. Freeport is also along the southern shore of Long Island and subject to salt water encroachment. For these reasons, the water table aquifer at OU-2 is not utilized for water supply. The Village of Freeport obtains its water supply from 11 supply wells drilled into the Magothy Aquifer, ranging from 500 to 700 feet below grade. Thus, the groundwater impacts do not impact, or have the potential to impact public water supply.

7.2 SOIL VAPOR

Because the groundwater screening sampling indicated that chloroethane groundwater impacts underlay three OU-2 buildings (162, 178 and 191 Hanse Avenue), sampling was conducted to assess the vapor intrusion. Sub-slab vapor and indoor air sampling was conducted at 162 and 191 Hanse Avenue in March 2009. Access was not granted to conduct sampling at 178 Hanse Avenue. Outdoor sub-slab sampling was conducted at 272 Buffalo Avenue in November 2009.

Compounds detected in sub-slab vapor and/or indoor air at 162 Hanse Avenue include acetone, methylene chloride, BTEX, PCE, 1,1,1-TCA, vinyl chloride and carbon tetrachloride. At 191 Hanse Avenue, compounds detected in sub-slab vapor and/or indoor air include acetone, heptane, hexane, methylene chloride, BTEX, PCE, 1,1,1-TCA, vinyl chloride and carbon tetrachloride. However, the compounds detected in groundwater at 162 and 191 Hanse Avenue, chloroethane, chlorobenzene and 1,1-dichloroethane, were not detected in any of the sub-slab vapor or indoor air samples at 162 or 191 Hanse Avenue. This indicates that the source of the compounds detected are not related to the 1,1,1-TCA release at OU-1.

In November 2009, two outdoor sub-slab vapor samples and one ambient air sample were collected at the 272 Buffalo Avenue property, immediately east of the OU-1 spill area. Compounds detected in the sub-slab vapor samples include acetone, 1,1-DCA, cis-1,2-DCE, trans-1,2-DCE, Freon 114, heptane, hexane, methyl ethyl ketone (MEK), pentane, PCE, toluene, 1,1,1-TCA and TCE. The compounds detected in the ambient air sample (AA-272-01) include acetone, MEK, pentane and toluene. These compounds were also detected in nearby soil gas and sub-slab vapor samples at OU-1. The TCE concentration in SS-272-02 (86 $\mu g/m^3$) is more than an order of magnitude greater than the TCE concentration in SS-272-01 (5.9 $\mu g/m^3$), although SS-272-01 is 80 feet closer to the OU-1 spill area. Of the four compounds detected in both SS-272-01 and SS-272-02, all four had higher concentrations in SS-272-02, which is further from the spill area (Figure 13). This result suggests that there could be another source for these compounds.

7.3 SURFACE WATER AND SEDIMENT

Surface water and sediment samples were collected from six location in Freeport Creek west of OU-2. Samples were analyzed for chloroethane and chlorobenzene, the only compounds detected in wells adjacent to Freeport Creek. These compounds were not detected in any of the surface water or sediment samples at the laboratory detection limits. This indicates that groundwater impacts resulting from the 1,1,1-TCA release at OU-1 have not impacted Freeport Creek.

7.4 SUMMARY

- Groundwater samples collected from properties south and west of OU-1 indicate that chloroethane impacts are present in groundwater at these properties at concentrations exceeding NYSDEC Class GA Groundwater Quality Standards.

- Chloroethane is a product of the breakdown of 1,1,1-TCA, a compound that was released to a storm drain at OU-1 in 1988. Chlorobenzene, although not related to the spill, is also present in OU-2 groundwater at concentrations exceeding NYSDEC Class GA Groundwater Quality Standards.

- The groundwater is not utilized for public water supply. Local drinking water comes from wells that are 500 to 700 feet deep. The impacted water-bearing unit is

underlain by a clay unit approximately 20 to 30 feet thick, which acts as a lower confining layer. The impacted water-bearing unit is partially composed of municipal landfill debris and is subject to salt water encroachment.

- Sub-slab vapor and indoor samples indicate that the chloroethane and chlorobenzene detected in OU-2 groundwater are not impacting indoor air in buildings south and west of OU-1.

- Results from surface water and sediment samples indicate that these compounds have not impacted Freeport Creek.

Based on the results of the Operable Unit No. 2 Remedial Investigation, the following conclusions can be drawn:

- Groundwater impacts resulting from a 1988 release of 1,1,1-TCA at OU-1 are present in groundwater at properties south and west of OU-1. However, based on public water supply, vapor intrusion sampling and surface water and sediment sampling, the groundwater contamination has not impacted any human or ecological receptors in this area.

- With the exception of MW-07-17D, the decrease in groundwater constituent concentrations moving downgradient from OU-1 to OU-2 demonstrates that these compounds are attenuating naturally, and will continue to do so at an accelerated rate as a result of remedial measures undertaken for soil and groundwater at OU-1.

- This chlorobenzene distribution indicates that the impacts are not from the release from OU-1 but, rather, may be endemic to the area, which is a former municipal landfill that has been used for various industrial purposes for the last 40 to 50 years.

- Outdoor sub-slab vapor sampling conducted at 272 Buffalo Avenue near the OU-1 spill area indicated the presence of compounds also detected in soil gas and sub-slab vapor samples at OU-1. In the two samples collected at this property, TCE concentrations are higher in the sample collected further away from the spill area.

- BP is treating the OU-1 spill area through in-situ chemical oxidation. This treatment is designed to reduce/eliminate the source of groundwater and soil vapor. As a result, these impacts will attenuate over time.

- Based on evaluation of site conditions and data, groundwater constituents at OU-2 are currently not impacting any human or ecological receptors. Because of the age of the spill and implementation of remedial measures at OU-1, the potential for future exposures is low.

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TABLES

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

GROUNDWATER SCREENING SAMPLES					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
GW-01	GW-01A	Groundwater	10 to 14	Direct-Push	COCs [1]
	GW-01B	Groundwater	15 to 19	Direct-Push	COCs
	GW-01C	Groundwater	20 to 24	Direct-Push	COCs
	GW-01D	Groundwater	25 to 29	Direct-Push	COCs
	GW-01E	Groundwater	30 to 34	Direct-Push	COCs
GW-02	GW-02A	Groundwater	10 to 14	Direct-Push	COCs
	GW-02B	Groundwater	15 to 19	Direct-Push	COCs
	GW-02C	Groundwater	20 to 24	Direct-Push	COCs
	GW-02D	Groundwater	25 to 29	Direct-Push	COCs
	GW-02E	Groundwater	30 to 34	Direct-Push	COCs
GW-03	GW-03A	Groundwater	10 to 14	Direct-Push	COCs
	GW-03B	Groundwater	15 to 19	Direct-Push	COCs
	GW-03C	Groundwater	20 to 24	Direct-Push	COCs
	GW-03D	Groundwater	25 to 29	Direct-Push	COCs
	GW-03E	Groundwater	30 to 34	Direct-Push	COCs
GW-04	GW-04A	Groundwater	10 to 14	Direct-Push	COCs
	GW-04B	Groundwater	15 to 19	Direct-Push	COCs
	GW-04C	Groundwater	20 to 24	Direct-Push	COCs
	GW-04D	Groundwater	25 to 29	Direct-Push	COCs
	GW-04E	Groundwater	30 to 34	Direct-Push	COCs
GW-05	GW-05A	Groundwater	10 to 14	Direct-Push	COCs
	GW-05X	Groundwater	15 to 19	Direct-Push	COCs
	GW-05B	Groundwater	20 to 24	Direct-Push	COCs
	GW-05C	Groundwater	25 to 29	Direct-Push	COCs
	GW-05D	Groundwater	30 to 34	Direct-Push	COCs
	GW-05E	Groundwater	30 to 34	Direct-Push	COCs
GW-06	GW-06A	Groundwater	10 to 14	Direct-Push	COCs
	GW-06B	Groundwater	15 to 19	Direct-Push	COCs
	GW-06C	Groundwater	20 to 24	Direct-Push	COCs
	GW-06D	Groundwater	25 to 29	Direct-Push	COCs
	GW-06E	Groundwater	30 to 34	Direct-Push	COCs

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

GROUNDWATER SCREENING SAMPLES (cont.)					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
GW-07	GW-07A	Groundwater	10 to 14	Direct-Push	COCs
	GW-07B	Groundwater	15 to 19	Direct-Push	COCs
	GW-07C	Groundwater	20 to 24	Direct-Push	COCs
	GW-07D	Groundwater	25 to 29	Direct-Push	COCs
	GW-07E	Groundwater	30 to 34	Direct-Push	COCs
GW-08	GW-08A	Groundwater	10 to 14	Direct-Push	COCs
	GW-08B	Groundwater	15 to 19	Direct-Push	COCs
	GW-08C	Groundwater	20 to 24	Direct-Push	COCs
	GW-08D	Groundwater	25 to 29	Direct-Push	COCs
	GW-08E	Groundwater	30 to 34	Direct-Push	COCs
GW-09	GW-09A	Groundwater	10 to 14	Direct-Push	COCs
	GW-09B	Groundwater	15 to 19	Direct-Push	COCs
	GW-09C	Groundwater	20 to 24	Direct-Push	COCs
	GW-09D	Groundwater	25 to 29	Direct-Push	COCs
	GW-09E	Groundwater	30 to 34	Direct-Push	COCs

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

MONITORING WELL GROUNDWATER SAMPLES (September 2009)					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
MW-97-1S	MW-97-1S	Groundwater	14 to 24	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-98-9D	MW-98-9D	Groundwater	27 to 37	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-97-02S	MW-97-02S	Groundwater	15 - 25	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-98-10D	MW-98-10D	Groundwater	27 to 37	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-00-13S	MW-00-13S	Groundwater	27 to 37	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-05-14S	MW-05-14S	Groundwater	15 to 25	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-05-15D	MW-05-15D	Groundwater	28 to 38	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-07-16S	MW-07-16S	Groundwater	15 to 25	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-07-17D	MW-07-17D	Groundwater	27 to 37	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-18S	MW-09-18S	Groundwater	5 to 15	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-19D	MW-09-19D	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-20S	MW-09-20S	Groundwater	10 to 20	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-21D	MW-09-21D	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-22S	MW-09-22S	Groundwater	10 to 20	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-23D	MW-09-23D	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-23D	DUP091009	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-24S	MW-09-24S	Groundwater	10 to 20	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-25D	MW-09-25D	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters
MW-09-26D	MW-09-26D	Groundwater	25 to 35	Low-Flow	COCs, Bio Parameters, Field Parameters

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

MONITORING WELL GROUNDWATER SAMPLES (September - October 2010)					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
MW-97-1S	MW-97-1S	Groundwater	14 to 24	Low-Flow	VOCs, Sulfate
MW-98-9D	MW-98-9D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-97-02S	MW-97-02S	Groundwater	15 - 25	Low-Flow	VOCs, Sulfate
MW-98-10D	MW-98-10D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-05-14S	MW-05-14S	Groundwater	15 to 25	Low-Flow	VOCs, Sulfate
MW-05-15D	MW-05-15D	Groundwater	28 to 38	Low-Flow	VOCs, Sulfate
MW-07-16S	MW-07-16S	Groundwater	15 to 25	Low-Flow	VOCs, Sulfate
MW-07-17D	MW-07-17D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-09-18S	MW-09-18S	Groundwater	5 to 15	Low-Flow	VOCs, Sulfate
MW-09-19D	MW-09-19D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-20S	MW-09-20S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-21D	MW-09-21D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-22S	MW-09-22S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-22S	DUP101410	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-23D	MW-09-23D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-24S	MW-09-24S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-25D	MW-09-25D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-26D	MW-09-26D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

MONITORING WELL GROUNDWATER SAMPLES (October 2011)					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
MW-97-1S	MW-97-1S	Groundwater	14 to 24	Low-Flow	VOCs, Sulfate
MW-98-9D	MW-98-9D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-97-02S	MW-97-02S	Groundwater	15 - 25	Low-Flow	VOCs, Sulfate
MW-98-10D	MW-98-10D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-00-13S	MW-00-13S	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-05-14S	MW-05-14S	Groundwater	15 to 25	Low-Flow	VOCs, Sulfate
MW-05-15D	MW-05-15D	Groundwater	28 to 38	Low-Flow	VOCs, Sulfate
MW-07-16S	MW-07-16S	Groundwater	15 to 25	Low-Flow	VOCs, Sulfate
MW-07-17D	MW-07-17D	Groundwater	27 to 37	Low-Flow	VOCs, Sulfate
MW-09-18S	MW-09-18S	Groundwater	5 to 15	Low-Flow	VOCs, Sulfate
MW-09-19D	MW-09-19D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-20S	MW-09-20S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-21D	MW-09-21D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-22S	MW-09-22S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-22S	DUP101410	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-23D	MW-09-23D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-24S	MW-09-24S	Groundwater	10 to 20	Low-Flow	VOCs, Sulfate
MW-09-25D	MW-09-25D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate
MW-09-26D	MW-09-26D	Groundwater	25 to 35	Low-Flow	VOCs, Sulfate

MONITORING WELL GROUNDWATER SAMPLES (January 2012)					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
MW-05-14S	MW-05-14S	Groundwater	15 to 25	Low-Flow	VOCs
MW-05-15D	MW-05-15D	Groundwater	28 to 38	Low-Flow	VOCs
MW-09-18S	MW-09-18S	Groundwater	5 to 15	Low-Flow	VOCs
MW-09-19D	MW-09-19D	Groundwater	25 to 35	Low-Flow	VOCs
MW-09-22S	MW-09-22S	Groundwater	10 to 20	Low-Flow	VOCs
MW-09-23D	MW-09-23D	Groundwater	25 to 35	Low-Flow	VOCs
MW-09-24S	MW-09-24S	Groundwater	10 to 20	Low-Flow	VOCs
MW-09-25D	MW-09-25D	Groundwater	25 to 35	Low-Flow	VOCs

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

SURFACE WATER SAMPLES					
SAMPLE LOCATION	SAMPLE ID	SAMPLE MATRIX	SAMPLE DEPTH (ft below creek surface)	SAMPLE METHOD	ANALYTICAL PARAMETERS
SW-1	SW-1	Surface Water	3	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-2	SW-2	Surface Water	10	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-3	SW-3	Surface Water	3.5	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-7	SW-7	Surface Water	3.5	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-4	SW-4	Surface Water	10	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-5	SW-5	Surface Water	3	Kemmerer Sampler	Chloroethane, chlorobenzene
SW-6	SW-6	Surface Water	4.5	Kemmerer Sampler	Chloroethane, chlorobenzene

SEDIMENT SAMPLES					
SAMPLE LOCATION	SAMPLE ID	SAMPLE MATRIX	SAMPLE DEPTH (ft below creek bottom)	SAMPLE METHOD	ANALYTICAL PARAMETERS
SED-1	SED-1	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-2	SED-2	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-3	SED-3	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-3	SED-7	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-4	SED-4	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-5	SED-5	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene
SED-6	SED-6	Sediment	0 to 0.5	Eckman Dredge	Chloroethane, chlorobenzene

TABLE 1
SUMMARY OF SAMPLING PROGRAM
REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

VAPOR INTRUSION SAMPLES					
SAMPLE LOCATION	**SAMPLE ID**	**SAMPLE MATRIX**	**SAMPLE DEPTH (ft below grade)**	**SAMPLE METHOD**	**ANALYTICAL PARAMETERS**
162 Hanse Ave.	SS-162-01	Sub-Slab Vapor	0.5	Summa Canister	VOCs
162 Hanse Ave.	IA-162-01	Indoor Air	NA	Low-Flow	VOCs
162 Hanse Ave.	20090312_FD-1	Indoor Air	NA	Low-Flow	VOCs
162 Hanse Ave.	SS-162-02	Sub-Slab Vapor	0.5	Low-Flow	VOCs
162 Hanse Ave.	IA-162-02	Indoor Air	NA	Low-Flow	VOCs
162 Hanse Ave.	AA-162-02	Ambient Air	NA	Low-Flow	VOCs
191 Hanse Ave.	SS-191-01	Sub-Slab Vapor	0.5	Low-Flow	VOCs
191 Hanse Ave.	IA-191-01	Indoor Air	NA	Low-Flow	VOCs
191 Hanse Ave.	SS-191-02	Sub-Slab Vapor	0.5	Low-Flow	VOCs
191 Hanse Ave.	IA-191-02	Indoor Air	NA	Low-Flow	VOCs
272 Buffalo Ave.	SS-272-01	Sub-Slab Vapor*	0.5	Low-Flow	VOCs
272 Buffalo Ave.	SS-272-02	Sub-Slab Vapor*	0.5	Low-Flow	VOCs
272 Buffalo Ave.	AA-272-01	Ambient Air	NA	Low-Flow	VOCs

1 : COCs include chloroethane, chlorobenzene, 1,1,1-TCA, 1,1-DCA and methylene chloride.
2 : Field Paramameters include temperature, pH, conductivity, dissolved oxygen and redox potential
3 : Bio Parameters include dissolved gasses (methane, ethane, ethene), total organic carbon, total iron and dissolved iron

TABLE 2
SUMARY OF GROUNDWATER SCREENING SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

159 HANSE AVENUE

URS SAMPLE ID	**GW-06A**	**GW-06B**	**GW-06C**	**GW-06D**	**GW-06E**
LAB SAMPLE ID	**A8F71015**	**A8F71014**	**A8F71013**	**A8F71012**	**A8F71011**
SAMPLE DEPTH (ft)	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**
SAMPLE DATE	**12/09/08**	**12/09/08**	**12/09/08**	**12/09/08**	**12/09/08**
DILUTION FACTOR	**1.0**	**2.0**	**1.0**	**2.0**	**1.0**
UNITS	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.3 U	0.6 U	0.3 U	0.6 U	0.3 U
1,1-Dichloroethane	0.3 U	0.6 U	0.3 U	0.6 U	0.3 U
Chloroethane	2 J	0.6 U	**23**	4 J	2 J
Chlorobenzene	**7 J**	**28**	4 J	**6 J**	3 J
Methylene Chloride	0.4 U	0.8 U	0.4 U	0.8 U	0.4 U
TOTAL TARGET VOCS	9	28	27	10	5
FIELD PARAMETERS					
pH	6.28	6.26	6.48	6.45	6.44
Dissolved Oxygen (mg/l)	4.17	9.18	1.48	1.40	1.10
Redox Potential (mV)	-85	-83	-93	-92	-64

URS SAMPLE ID	**GW-07A**	**GW-07B**	**GW-07C**	**GW-07D**	**GW-07E**
LAB SAMPLE ID	**A8F71010**	**A8F71009**	**A8F71008**	**A8F71007**	**A8F71006**
SAMPLE DEPTH (ft)	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**
SAMPLE DATE	**12/09/08**	**12/09/08**	**12/09/08**	**12/09/08**	**12/09/08**
DILUTION FACTOR	**2.0**	**2.0**	**1.0/10.0**	**1.0/20.0**	**1.0/20.0**
UNITS	**µg/l**	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U
Chloroethane	**8 J**	**30**	**760 D**	**1500 D**	**1400 D**
Chlorobenzene	1.0 U	3 J	5 J	5 J	4 J
Methylene Chloride	0.8 U	0.8 U	0.4 U	0.4 U	0.3 U
TOTAL TARGET VOCS	8	33	765	1505	1404
FIELD PARAMETERS					
pH	6.38	6.33	6.44	6.35	6.34
Dissolved Oxygen (mg/l)	1.27	1.20	1.17	1.19	1.30
Redox Potential (mV)	-104	-97	-89	-78	-67

TABLE 2
SUMARY OF GROUNDWATER SCREENING SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

191 HANSE AVENUE

URS SAMPLE ID	GW-08A	GW-08B	GW-08C	GW-08D	GW-08E
LAB SAMPLE ID	A8F53605	A8F53604	A8F53603	A8F53602	A8F53601
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/03/08	12/03/08	12/03/08	12/03/08	12/03/08
DILUTION FACTOR	4.0	4.0	4.0	4.0	4.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds					
1,1,1-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	**39 J**	**150**
Chlorobenzene	3.0 U	3.0 U	**8 J**	**6 J**	**9 J**
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
TOTAL TARGET VOCS	0	0	8	45	159
FIELD PARAMETERS					
pH	6.97	6.71	6.51	6.53	7
Dissolved Oxygen (mg/l)	1.01	5.27	19.99	19.79	13
Redox Potential (mV)	-88	-135	-116	-112	-117

URS SAMPLE ID	GW-09A	GW-09B	GW-09C	GW-09D	GW-09E
LAB SAMPLE ID	A8F53410	A8F53409	A8F53408	A8F53407	A8F53406
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/03/08	12/03/08	12/03/08	12/03/08	12/03/08
DILUTION FACTOR	2.0	2.0	2.0	2.0	2.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethane	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Chloroethane	0.6 U	0.6 U	0.6 U	**43**	**120**
Chlorobenzene	1.0 U	**15 J**	**13 J**	**7 J**	**6 J**
Methylene Chloride	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
TOTAL TARGET VOCS	0	15	13	50	126
FIELD PARAMETERS					
pH	6.61	6.45	6.41	6.39	6
Dissolved Oxygen (mg/l)	3.79	4.12	3.42	8.33	9
Redox Potential (mV)	-181	-152	-114	-122	-93

TABLE 2
SUMARY OF GROUNDWATER SCREENING SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

162 HANSE AVENUE

URS SAMPLE ID	GW-01A	GW-01B	GW-01C	GW-01D	GW-01E
LAB SAMPLE ID	A8F53405	A8F53404	A8F53403	A8F53402	A8F5340E
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/05/08	12/05/08	12/05/08	12/05/08	12/05/08
DILUTION FACTOR	2.0	2.0	2.0	2.0	2.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1-Dichloroethane	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Chloroethane	**56**	**54**	**16 J**	3 J	3 J
Chlorobenzene	3 J	**6 J**	**7 J**	5 J	5 J
Methylene Chloride	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
TOTAL TARGET VOCS	59	60	23	8	8
FIELD PARAMETERS					
pH	6.50	6.44	6.47	6.51	7
Dissolved Oxygen (mg/l)	3.16	5.66	4.25	1.57	1
Redox Potential (mV)	-97	-101	-100	-94	-88

URS SAMPLE ID	GW-02A	GW-02B	GW-02C	GW-02X(Dup)	GW-02D	GW-02E
LAB SAMPLE ID	A8F53610	A8F53609	A8F53608	A8F606	A8F53607	A8F5340E
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	25 - 29	30 - 34
SAMPLE DATE	12/05/08	12/05/08	12/05/08	12/05/08	12/05/08	12/05/08
DILUTION FACTOR	1.0	4.0	4.0	4.0	1.0/2.0	1.0/2.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.3 U	1.0 U	1.0 U	1.0 U	0.3 U	0.3 U
1,1-Dichloroethane	0.3 U	1.0 U	1.0 U	1.0 U	0.3 U	0.3 U
Chloroethane	5 J	**50**	**300**	**320**	**360 D**	**240 D**
Chlorobenzene	1 J	3.0 U	4 J	4 J	4 J	1 J
Methylene Chloride	0.4 U	2.0 U	2.0 U	2 U	0.4 U	0.4 U
TOTAL TARGET VOCS	6	50	304	364	364	241
FIELD PARAMETERS						
pH	6.74	6.50	6.54	NA	6.52	7
Dissolved Oxygen (mg/l)	1.40	1.37	1.39	NA	1.24	1
Redox Potential (mV)	-137	-121	-120	NA	-112	-115

TABLE 2
SUMARY OF GROUNDWATER SCREENING SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

178 HANSE AVENUE

URS SAMPLE ID	GW-03A	GW-03B	GW-03C	GW-03D	GW-03E
LAB SAMPLE ID	A8F70905	A8F70904	A8F70903	A8F70902	A8F70904
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/06/08	12/06/08	12/06/08	12/06/08	12/06/08
DILUTION FACTOR	2.0	2.0	1.0/2.0	1.0	1.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U
Chloroethane	**75**	**310**	**290 D**	**120**	**72**
Chlorobenzene	**7 J**	**11 J**	**11**	**11**	5 J
Methylene Chloride	0.8 U	0.8 U	0.4 U	0.4 U	0.4 U
TOTAL TARGET VOCS	82	321	301	131	77
FIELD PARAMETERS					
pH	6.42	6.38	6.37	6.26	6.27
Dissolved Oxygen (mg/l)	5.04	5.73	1.26	7.92	2.99
Redox Potential (mV)	-96	-92	-79	-81	-53

URS SAMPLE ID	GW-04A	GW-04B	GW-04C	GW-04D	GW-04E
LAB SAMPLE ID	A8F70910	A8F70909	A8F70908	A8F70907	A8F70906
SAMPLE DEPTH (ft)	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/06/08	12/06/08	12/06/08	12/06/08	12/06/08
DILUTION FACTOR	2.0	2.0	1.0	2.0	1.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.6 U	0.6 U	0.3 U	0.6 U	0.3 U
1,1-Dichloroethane	0.6 U	0.6 U	0.3 U	0.6 U	0.3 U
Chloroethane	2 J	4 J	**80**	**150**	**160**
Chlorobenzene	5 J	**9 J**	**8 J**	**7 J**	5 J
Methylene Chloride	0.8 U	0.8 U	0.4 U	0.8 U	0.4 U
TOTAL TARGET VOCS	7	13	88	157	165
FIELD PARAMETERS					
pH	6.44	6.34	6.38	6.40	6.44
Dissolved Oxygen (mg/l)	2.71	4.47	7.81	7.67	3.15
Redox Potential (mV)	-100	-88	-86	-69	-51

URS SAMPLE ID	GW-05A	GW-05X(Dup)	GW-05B	GW-05C	GW-05D	GW-05E
LAB SAMPLE ID	A8F71003	A8F71004	A8F71002	A8F71001	A8F70912	A8F70911
SAMPLE DEPTH (ft)	10 - 14	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
SAMPLE DATE	12/08/08	12/08/08	12/08/08	12/08/08	12/08/08	12/08/08
DILUTION FACTOR	2.0	2.0	2.0	1.0	1.0	2.0
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U	0.6 U
1,1-Dichloroethane	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U	0.6 U
Chloroethane	0.6 U	0.6 U	0.6 U	0.3 U	1 J	**15 J**
Chlorobenzene	**10 J**	**10 J**	3 J	2 J	**22**	**63**
Methylene Chloride	0.8 U	0.8 U	0.8 U	0.4 U	0.4 U	0.8 U
TOTAL TARGET VOCS	10	10	3	2	23	78
FIELD PARAMETERS						
pH	6.43	NA	6.28	6.30	6.28	6.28
Dissolved Oxygen (mg/l)	2.83	NA	12.39	1.49	1.60	1.31
Redox Potential (mV)	-87	NA	-83	-68	-72	-70

TABLE 2
SUMARY OF GROUNDWATER SCREENING SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

QA/QC SAMPLES

URS SAMPLE ID	**FB120508**	**TB120508**	**FB120808**	**TB120808**
LAB SAMPLE ID	**A8F53612**	**A8F53613**	**A8F71005**	**A8F53613**
SAMPLE DATE	**12/05/08**	**12/05/08**	**12/08/08**	**12/08/08**
DILUTION FACTOR	**1.0**	**1.0**	**1.0**	**1.0**
UNITS	**µg/l**	**µg/l**	**µg/l**	**µg/l**
Volatile Organic Compounds				
1,1,1-Trichloroethane	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	0.3 U	0.3 U	0.3 U	0.3 U
Chloroethane	0.3 U	0.3 U	0.3 U	0.3 U
Chlorobenzene	0.7 U	0.7 U	0.7 U	0.7 U
Methylene Chloride	0.4 U	0.4 U	0.4 U	0.4 U
TOTAL TARGET VOCS	0	0	0	0

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
mV : MilliVolts
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
NA : Not applicable

TABLE 3
SUMMARY OF MONITORING WELL FIELD MEASUREMENTS - 2009
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NY

Well	MW-03-13S	MW-05-14S	MW-05-15D	MW-07-16S	MW-07-17D	MW-09-18S	MW-09-19D	MW-09-20S	MW-09-21D
Data	9/10/2009	9/10/2009	9/9/2009	9/30/2009	9/30/2009	9/11/2009	9/11/2009	9/11/2009	9/10/2009
Ref. Elevation (ft MSL)	6.83	5.76	5.74	6.95	6.88	7.33	7.32	7.34	7.39
DTW (ft)	5.35	5.13	4.83	5.63	5.61	6.31	6.33	5.68	5.71
GW Elev. (ft MSL)	1.48	0.63	0.91	1.32	1.27	1.02	0.99	1.66	1.68
TD (ft)	24.36	25.03	38.25	24.45	36.33	15.24	35.32	20.55	34.35
pH (Std. Units)	6.55	6.38	6.34	6.48	6.42	6.34	6.29	6.19	6.26
ORP (mV)	-156	-168	-103	-127	-172	-141	-137	-151	-146
Temp. (Deg. C)	22.84	19.15	18.44	18.85	18.53	19.47	16.83	18.60	18.29
Spec. Cond. (mS/cm)	1.32	16.4	0.514	2.18	17.2	2.43	1.66	2.13	1.21
D.O. (mg/l)	0.94	0.50	0.78	0.0	0.0	12.06	0.0	19.72	0.43
Turbidity (NTU)	47.2	0.0	0.0	303.0	157.0	9.8	247.0	0.0	0.0

NOTES:

Ref. Elevation (ft MSL) : Elevation of top of well casing measured in feet above Mean Seal Level
(ft) : Feet
DTW : Depth to water from top of casing
GW Elev. (ft MSL) : Groundwater elevation measued in feet above Mean Sea Level
TD : Total depth from top of casing
ph (Std. Units) : pH measured in Standard Units
ORP (mV) : Oxidation-Reduction Potential measured in millivolts
Temp. (Deg. C) : Temperature measured in degrees centigrade
Spec. Cond. (mS/cm) : Specific Conductance measured in micro-Siemens per centimeter
D.O. (mg/l) : Dissolved Oxygen measured in milligrams per liter.
Turbidity (NTU) : Turbidity measured in nephelometric turbidity units

TABLE 3
SUMMARY OF MONITORING WELL FIELD MEASUREMENTS - 2009
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NY

Well	MW-09-22S	MW-09-23D	MW-09-24S	MW-09-25D	MW-09-26D	MW-97-2S	MW-98-10D
Data	**9/10/2009**	**9/10/2009**	**9/9/2009**	**9/9/2009**	**9/8/2009**	**9/9/2009**	**9/8/2009**
Ref. Elevation (ft MSL)	7.26	7.32	5.52	5.38	6.91	7.60	7.40
DTW (ft)	5.07	5.59	4.03	3.74	5.88	6.92	6.89
GW Elev. (ft MSL)	2.19	1.73	1.49	1.64	1.03	0.68	0.51
TD (ft)	20.56	34.84	20.01	35.82	34.52	24.02	36.97
pH (Std. Units)	6.39	6.24	6.52	6.42	6.26	6.28	6.33
ORP (mV)	-182	-116	-181	-142	-122	-117	-105
Temp. (Deg. C)	17.59	17.60	17.80	17.38	17.77	18.31	18.38
Spec. Cond. (mS/cm)	2.43	2.35	6.57	7.98	1.01	1.33	1.36
D.O. (mg/l)	0.45	1.84	0.41	0.01	0.07	1.07	0.24
Turbidity (NTU)	0.0	80.7	0.0	48.8	711.0	234.0	101.0

NOTES:

Ref. Elevation (ft MSL) : Elevation of top of well casing measured in feet above Mean Seal Level
(ft) : Feet
DTW : Depth to water from top of casing
GW Elev. (ft MSL) : Groundwater elevation measued in feet above Mean Sea Level
TD : Total depth from top of casing
ph (Std. Units) : pH measured in Standard Units
ORP (mV) : Oxidation-Reduction Potential measured in millivolts
Temp. (Deg. C) : Temperature measured in degrees centigrade
Spec. Cond. (mS/cm) : Specific Conductance measured in micro-Siemens per centimeter
D.O. (mg/l) : Dissolved Oxygen measured in milligrams per liter.
Turbidity (NTU) : Turbidity measured in nephelometric turbidity units

TABLE 4
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2009
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

159 HANSE AVENUE

URS SAMPLE ID	MW-97-2S	MW-98-10D	MW-97-1S	MW-98-9D
LAB SAMPLE ID	RSI0351-03	RSI0351-02	RSI0098-04	RSI0098-03
SAMPLE DEPTH (ft)	10 - 20	25 - 35	20 - 24	25 - 29
SAMPLE DATE	09/09/09	09/09/09	9/1/09	9/1/09
UNITS	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds				
1,1,1-Trichloroethane	0.66 U	0.66 U	0.66 U	0.66 U
1,1-Dichloroethane	0.31 U	0.31 U	0.31 U	0.31 U
Chlorobenzene	**15**	5 J	2.9 J	**8.5**
Chloroethane	0.69 U	0.69 U	**87**	**3000**
Methylene Chloride	0.46 U	0.46 U	0.46 U	0.46 U
TOTAL TARGET VOCS	15	5 J	89.9 J	3008.5
Volatile Organic Aromatics				
Ethane	180 U	180 U	180 U	180 U
Ethene	150 U	150 U	150 U	150 U
Methane	9400	11000	12000	11000
Metals				
Iron (mg/l)	35900	17600	NR	NR
Dissolved Iron (mg/l)	13300	3120	37.1	34.6
Miscellaneous				
Sulfate (mg/l)	19.1	2.72 J	1.90	1.49 U
Sulfide (mg/l)	0.7 U	0.7 U	0.7 U	0.7 U
TOC (mg/l)	13.9	11.5	9.9	10.0

191 HANSE AVENUE

URS SAMPLE ID	MW-09-26D
LAB SAMPLE ID	RSI0351-01
SAMPLE DEPTH (ft)	25 - 35
SAMPLE DATE	9/8/09
UNITS	µg/l
Volatile Organic Compounds	
1,1,1-Trichloroethane	0.66 U
1,1-Dichloroethane	0.31 U
Chlorobenzene	**13**
Chloroethane	**36**
Methylene Chloride	0.46 U
TOTAL TARGET VOCS	49
Volatile Organic Aromatics	
Ethane	180 U
Ethene	150 U
Methane	11000
Metals	
Iron (mg/l)	22700
Dissolved Iron (mg/l)	7530
Miscellaneous	
Sulfate (mg/l)	2.16 J
Sulfide (mg/l)	0.7 U
TOC (mg/l)	9

TABLE 4
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2009
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

162 HANSE AVENUE

URS SAMPLE ID	MW-09-24S	MW-09-25D	MW-09-18S	MW-09-19D
LAB SAMPLE ID	RSI0347-01	RSI0347-02	RSI0437-07	RSI0437-06
SAMPLE DEPTH (ft)	10 - 20	25 - 35	5 - 10	25 - 35
SAMPLE DATE	09/09/09	09/09/09	9/11/09	9/11/09
UNITS	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds				
1,1,1-Trichloroethane	0.66 U	0.66 U	3.3 U	3.3 U
1,1-Dichloroethane	0.31 U	0.31 U	1.6 U	4.1
Chloroethane	**11**	**24**	**77**	**170**
Chlorobenzene	4.5 J	**6.3 J**	1.4 U	**7 J**
Methylene Chloride	0.46 U	0.46 U	2.3 U	2.3 U
TOTAL TARGET VOCS	15.5 J	30.3 J	77	181.7 J
Volatile Organic Aromatics				
Ethane	180 U	180 U	180 U	180 U
Ethene	150 U	150 U	150 U	150 U
Methane	8900	5400	7300	9300
Metals				
Iron (mg/l)	8780	26700	25300	23500
Dissolved Iron (mg/l)	887	11400	19.3 U	19.3 U
Miscellaneous				
Sulfate (mg/l)	4.09 J	145	1.49 U	1.49 U
Sulfide (mg/l)	1.6	0.7 U	0.7 U	0.7 U
TOC (mg/l)	12.7	10	9.1	11.2

178 HANSE AVENUE

URS SAMPLE ID	MW-09-22S	MW-09-23D	DUP091009	MW-09-20S	MW-09-21D	MW-07-16S	MW-07-17D
LAB SAMPLE ID	RSI0437-04	RSI0437	RSI0351-01	RSI0437-08	RSI0437-08	RSJ0221-02	RSJ0221-03
SAMPLE DEPTH (ft)	10 - 15	25 - 35	NA	10 - 20	25 - 35	10 - 20	25 - 35
SAMPLE DATE	9/10/09	9/10/09	09/10/09	9/11/09	9/11/09	9/30/09	9/30/09
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds							
1,1,1-Trichloroethane	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	2.6 U	2.6 U
1,1-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.3 U	1.3 U
Chloroethane	3.5 U	3.5 U	3.5 U	3.5 U	**9.8 J**	**52**	**5.1 J**
Chlorobenzene	**5.9 J**	**13 J**	**13**	1.4 U	5.0 J	**6.8 J**	**8.9 J**
Methylene Chloride	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	1.8 U	1.8 U
TOTAL TARGET VOCS	5.9 J	13 J	13	0	14.8 J	58.8 J	14 J
Volatile Organic Aromatics							
Ethane	180 U	180 U	180 U	180 U	180 U	180 U	180 U
Ethene	150 U	150 U	150 U	150 U	150 U	150 U	150 U
Methane	11000	9900	10000	9200	9200	8600	7400
Metals							
Iron (mg/l)	1280	25700	23000	8420	20000	13000	18000
Dissolved Iron (mg/l)	1230	196	55.6 J	597	113	257	7220
Miscellaneous							
Sulfate (mg/l)	1.49 U	39.3	1.49 U	64.2	1.49 U	1.64	467
Sulfide (mg/l)	4.4	0.7 U	0.7 U	0.8 J	0.7 U	0.7 U	0.8
TOC (mg/l)	21.7	14.1	9.4	26.7	12.7	13.5	9.7

TABLE 4
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2009
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

HANSE AVENUE RIGHT-OF-WAY

URS SAMPLE ID	MW-03-13S	MW-05-14S	MW-05-15D
LAB SAMPLE ID	RSI0437-03	RSI0437-01	RSI0351-06
SAMPLE DEPTH (ft)	10 - 20	10 - 20	25 - 35
SAMPLE DATE	9/10/09	09/10/09	9/9/09
UNITS	µg/l	µg/l	µg/l
Volatile Organic Compounds			
1,1,1-Trichloroethane	3.3 U	3.3 U	3.3 U
1,1-Dichloroethane	1.6 U	1.6 U	1.6 U
Chloroethane	3.5 U	3.5 U	**490 D**
Chlorobenzene	1.4 U	**8.4 J**	2.9 J
Methylene Chloride	2.3 U	2.3 U	**13 DJ**
TOTAL TARGET VOCS	0	8.4 J	505.9
Volatile Organic Aromatics			
Ethane	90 U	180 U	180 U
Ethene	75 U	150 U	150 U
Methane	9400	8100	4300
Metals			
Iron (mg/l)	25700	17800	5950
Dissolved Iron (mg/l)	19.3 U	179	1090
Miscellaneous			
Sulfate (mg/l)	1.49 U	1.49 U	1.49 U
Sulfide (mg/l)	0.7 U	0.7 U	0.7 U
TOC (mg/l)	9.5	10.7	3.5

QA/QC SAMPLES

URS SAMPLE ID	FB091009	TB090909	TB091109	TB091109-2	FB093009	TB093009
LAB SAMPLE ID	RSI0351-02	RSI0351-07	RSI0437-11	RSI0437-12	RSJ0221-01	RSJ0221-04
SAMPLE DATE	09/10/09	9/09/09	9/11/09	9/11/09	09/30/09	09/30/09
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
1,1-Dichloroethane	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Chloroethane	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Chlorobenzene	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Methylene Chloride	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
TOTAL TARGET VOCS	0	0	0	0	0	0
Volatile Organic Aromatics						
Ethane	0.18 U	NR	NR	NR	0.18 U	NR
Ethene	0.15 U	NR	NR	NR	0.15 U	NR
Methane	0.22 U	NR	NR	NR	0.22 U	NR
Metals						
Iron (mg/l)	19.3 U	NR	NR	NR	19.3 U	NR
Dissolved Iron (mg/l)	19.3 u	NR	NR	NR	19.3 U	NR
Miscellaneous						
Sulfate (mg/l)	1.49 U	NR	NR	NR	1.9 J	NR
Sulfide (mg/l)	0.7 U	NR	NR	NR	0.7 U	NR
TOC (mg/l)	0.7 J	NR	NR	NR	0.4 U	NR

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
NR : Analysis not requested

TABLE 5
SUMMARY OF MONITORING WELL FIELD MEASUREMENTS - 2010
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NY

WELL ID	MW-97-1S	MW-98-9D	MW-97-2S	MW-98-10D	MW-05-14S	MW-05-15D	MW-07-16S	MW-07-17D	MW-09-18S
DATE	9/24/2010	9/24/2010	9/15/2010	9/15/2010	10/14/2010	10/14/2010	10/20/2010	10/20/2010	10/13/2010
Ref. Elevation (ft MSL)	6.46	6.43	7.52	7.72	5.76	5.74	6.95	6.88	7.33
DTW (ft)	5.45	5.42	6.58	6.86	4.68	4.62	6.45	7.05	6.35
GW Elev. (ft MSL)	1.01	1.01	0.94	0.86	1.08	1.12	0.50	-0.17	0.98
TD (ft)	24.02	33.52	23.87	34.85	24.76	37.85	24.45	36.33	14.98
pH (Std. Units)	7.34	7.45	6.76	6.98	6.73	6.87	7.29	7.25	6.78
ORP (mV)	-85	-102	-82	-105	-190	-134	-130	-100	-141
Temp. (Deg. C)	19.31	18.97	20.00	18.84	20.78	18.09	17.22	17.25	19.77
Spec. Cond. (mS/cm)	0.993	1.17	1.25	1.27	13.2	0.393	2.16	1.94	2.12
D.O. (mg/l)	2.07	2.11	1.51	0.59	0.12	0.00	0.00	0.00	0.00
Turbidity (NTU)	9.8	19.9	128.0	5.1	1.3	23.3	59.2	246.0	3.0

NOTES:

Ref. Elevation (ft MSL) : Elevation of top of well casing measured in feet above Mean Seal Level
(ft) : Feet
DTW : Depth to water from top of casing
GW Elev. (ft MSL) : Groundwater elevation measued in feet above Mean Sea Level
TD : Total depth from top of casing
ph (Std. Units) : pH measured in Standard Units
ORP (mV) : Oxidation-Reduction Potential measured in millivolts
Temp. (Deg. C) : Temperature measured in degrees centigrade
Spec. Cond. (mS/cm) : Specific Conductance measured in micro-Siemens per centimeter
D.O. (mg/l) : Dissolved Oxygen measured in milligrams per liter.
Turbidity (NTU) : Turbidity measured in nephelometric turbidity units

TABLE 5
SUMMARY OF MONITORING WELL FIELD MEASUREMENTS - 2010
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NY

WELL ID	MW-09-19D	MW-09-20S	MW-09-21D	MW-09-22S	MW-09-23D	MW-09-24S	MW-09-25D	MW-09-26D
DATE	10/13/2010	10/20/2010	10/20/2010	10/14/2010	10/14/2010	10/13/2010	10/13/2010	10/13/2010
Ref. Elevation (ft MSL)	7.32	7.34	7.39	7.26	7.32	5.52	5.38	6.91
DTW (ft)	7.00	6.74	6.83	6.60	5.85	4.46	3.99	5.36
GW Elev. (ft MSL)	0.32	0.60	0.56	0.66	1.47	1.06	1.39	1.55
TD (ft)	35.00	20.22	34.3	20.20	34.45	19.74	35.5	34.5
pH (Std. Units)	6.75	7.30	7.06	6.77	6.63	6.86	6.78	6.68
ORP (mV)	-130	-177	-97	-215	-136	-315	-175	-119
Temp. (Deg. C)	17.69	21.00	18.84	18.55	18.34	17.94	17.14	17.67
Spec. Cond. (mS/cm)	2.41	1.97	1.12	2.07	1.21	10.7	5.23	0.60
D.O. (mg/l)	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	16.5	2.8	73.8	5.4	9.9	4.6	94.9	103.0

NOTES:

Ref. Elevation (ft MSL) : Elevation of top of well casing measured in feet above Mean Seal Level
(ft) : Feet
DTW : Depth to water from top of casing
GW Elev. (ft MSL) : Groundwater elevation measued in feet above Mean Sea Level
TD : Total depth from top of casing
ph (Std. Units) : pH measured in Standard Units
ORP (mV) : Oxidation-Reduction Potential measured in millivolts
Temp. (Deg. C) : Temperature measured in degrees centigrade
Spec. Cond. (mS/cm) : Specific Conductance measured in micro-Siemens per centimeter
D.O. (mg/l) : Dissolved Oxygen measured in milligrams per liter.
Turbidity (NTU) : Turbidity measured in nephelometric turbidity units

TABLE 6
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2010
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

URS SAMPLE ID LAB SAMPLE ID DILUTION FACTOR SAMPLE DATE UNITS	NYSDEC CLASS GA GW QUALITY STANDARD µg/l	MW-05-14S RTJ1427-08 1 10/14/10 µg/l	MW-05-15D RTJ1427-09 1 10/14/10 µg/l	MW-07-16S RTJ1777-04 4 10/20/10 µg/l	MW-07-17D RTJ1777-05 4 10/20/10 µg/l	MW-09-18S RTJ1427-01 1 10/13/10 µg/l	MW-09-19D RTJ1427-02 2 10/13/10 µg/l
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	4.2 U
1,1,2,2-Tetrachloroethane	5	1.5 U	1.5 U	6 U	6 U	1.5 U	3 U
1,1,2-Trichloroethane	1	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	3.8 U
1,1,2-Trichlorotrifluoroethane	NE	1.5 U	1.5 U	6 U	6 U	1.5 U	3 U
1,1-Dichloroethane	5	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	3.4 U
1,1-Dichloroethene	5	2.5 U	2.5 U	10 U	10 U	2.5 U	5 U
1,2,4-Trichlorobenzene	NE	0.57 U	0.57 U	2.3 U	2.3 U	0.57 U	1.1 U
1,2-Dibromo-3-chloropropane	NE	5 U	5 U	20 U	20 U	5 U	10 U
1,2-Dibromoethane (EDB)	NE	2 U	2 U	8 U	8 U	2 U	4 U
1,2-Dichlorobenzene	NE	1.2 U	1.2 U	4.8 U	4.8 U	1.2 U	2.4 U
1,2-Dichloroethane	0.6	0.83 U	0.83 U	3.3 U	3.3 U	0.83 U	1.7 U
1,2-Dichloropropane	1	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	3.4 U
1,3-Dichlorobenzene	NE	1.2 U	1.2 U	4.8 U	4.8 U	1.2 U	2.4 U
1,4-Dichlorobenzene	NE	1.3 J	1.1 U	4.4 U	4.4 U	1.1 U	2.2 U
2-Butanone (MEK)	50	1.5 U	1.5 U	6 U	6 U	1.5 U	3 U
2-Hexanone	50	1.8 U	1.8 U	7.2 U	7.2 U	1.8 U	3.6 U
4-Methyl-2-pentanone (MIBK)	NE	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	3.4 U
Acetone	50	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	3.8 U
Benzene	1	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	3.2 U
Bromodichloromethane	5	1.5 U	1.5 U	6 U	6 U	1.5 U	3 U
Bromoform	5	5 U	5 U	20 U	20 U	5 U	10 U
Bromomethane	5	4.3 U	4.3 U	17 U	17 U	4.3 U	8.6 U
Carbon disulfide	NE	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	4.2 U
Carbon Tetrachloride	5	2 U	2 U	8 U	8 U	2 U	4 U
Chlorobenzene	5	**6.2 J**	1.6 U	**6.5 J**	**9.1 J**	1.6 U	**5.2** J
Chlorodibromomethane	5	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	3.4 U
Chloroethane	5	2.5 U	**140**	**13 J**	**31 J**	**37**	**58**
Chloroform	7	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	3.8 U
Chloromethane	5	2.3 U	2.3 U	9.2 U	9.2 U	2.3 U	4.6 U
cis-1,2-Dichloroethene	NE	1.8 U	1.8 U	7.2 U	7.2 U	1.8 U	3.6 U
cis-1,3-Dichloropropene	0.4	1.4 U	1.4 U	5.6 U	5.6 U	1.4 U	2.8 U
Cyclohexane	NE	0.59 U	0.59 U	2.3 U	2.3 U	0.59 U	1.2 U
Dichlorodifluoromethane	NE	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	4.2 U
Ethylbenzene	5	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	3.2 U
Isopropylbenzene	NE	0.37 U	0.37 U	1.5 U	1.5 U	0.37 U	0.75 U
Methyl Acetate	NE	0.66 U	0.66 U	2.7 U	2.7 U	0.66 U	1.3 U
Methyl tert-Butyl Ether	NE	0.46 U	0.46 U	1.8 U	1.8 U	0.46 U	0.91 U
Methylcyclohexane	NE	0.59 U	0.59 U	2.4 U	2.4 U	0.59 U	1.2 U
Methylene Chloride	5	1.3 U	1.3 U	5.2 U	5.2 U	1.3 U	2.6 U
Styrene	5	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	3.4 U
Tetrachloroethene	5	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	4.2 U
Toluene	5	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	3.2 U
trans-1,2-Dichloroethene	NE	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	3.8 U
trans-1,3-Dichloropropene	0.4	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	3.2 U
Trichloroethene	5	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	3.8 U
Trichlorofluoromethane	NE	1.3 U	1.3 U	5.2 U	5.2 U	1.3 U	2.6 U
Vinyl chloride	2	2.3 U	2.3 U	9.2 U	9.2 U	2.3 U	4.6 U
Xylenes, total	5	0.82 U	0.82 U	3.3 U	3.3 U	0.82 U	1.6 U
TOTAL TARGET VOCs	NE	6.2 J	140	19.5	40.1	37	63.2
TOTAL VOC TICs	NE	ND	ND	51 J	44 J	9.4 J	12 J
General Chemistry							
Sulfate (mg/l)	NE	106	49.6	5 U	5 U	5 U	20.4

Notes:

NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested

TABLE 6
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2010
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

URS SAMPLE ID LAB SAMPLE ID DILUTION FACTOR SAMPLE DATE UNITS	NYSDEC CLASS GA GW QUALITY STANDARD µg/l	MW-09-20S RTJ1777-03 5 10/20/10 µg/l	MW-09-21D RTJ1777-06 5 10/20/10 µg/l	MW-09-22S RTJ1427-13 1 10/14/10 µg/l	MW-09-23D RTJ1427-10 1 10/14/10 µg/l	MW-09-24S RTJ1427-03 1 10/13/10 µg/l	MW-09-25D RTJ1427-04 1 10/13/10 µg/l
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	10 U	10 U	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	5	7.5 U	7.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1,2-Trichloroethane	1	9.5 U	9.5 U	1.9 U	1.9 U	1.9 U	1.9 U
1,1,2-Trichlorotrifluoroethane	NE	7.5 U	7.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethane	5	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U	1.7 U
1,1-Dichloroethene	5	12 U	12 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene	NE	2.9 U	2.9 U	0.57 U	0.57 U	0.57 U	0.57 U
1,2-Dibromo-3-chloropropane	NE	25 U	25 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	NE	10 U	10 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	NE	6 U	6 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	0.6	4.2 U	4.2 U	0.83 U	0.83 U	0.83 U	0.83 U
1,2-Dichloropropane	1	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U	1.7 U
1,3-Dichlorobenzene	NE	6 U	6 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NE	5.5 U	5.5 U	1.1 U	2.9 J	1.8 J	1.8 J
2-Butanone (MEK)	50	7.5 U	7.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Hexanone	50	9 U	9 U	1.8 U	1.8 U	1.8 U	1.8 U
4-Methyl-2-pentanone (MIBK)	NE	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U	1.7 U
Acetone	50	9.5 U	9.5 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzene	1	8 U	8 U	1.6 U	1.6 U	1.6 U	1.6 U
Bromodichloromethane	5	7.5 U	7.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Bromoform	5	25 U	25 U	5 U	5 U	5 U	5 U
Bromomethane	5	22 U	22 U	4.3 U	4.3 U	4.3 U	4.3 U
Carbon disulfide	NE	10 U	10 U	2.1 U	2.1 U	2.1 U	2.1 U
Carbon Tetrachloride	5	10 U	10 U	2 U	2 U	2 U	2 U
Chlorobenzene	5	8 U	8 U	2.9 J	**14**	3.3 J	**5.5 J**
Chlorodibromomethane	5	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U	1.7 U
Chloroethane	5	12 U	12 U	2.5 U	3.1 J	2.5 U	**6.5 J**
Chloroform	7	9.5 U	9.5 U	1.9 U	1.9 U	1.9 U	1.9 U
Chloromethane	5	12 U	12 U	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,2-Dichloroethene	NE	9 U	9 U	1.8 U	1.8 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	0.4	7 U	7 U	1.4 U	1.4 U	1.4 U	1.4 U
Cyclohexane	NE	2.9 U	2.9 U	0.59 U	0.59 U	0.59 U	0.59 U
Dichlorodifluoromethane	NE	10 U	10 U	2.1 U	2.1 U	2.1 U	2.1 U
Ethylbenzene	5	8 U	8 U	1.6 U	1.6 U	1.6 U	1.6 U
Isopropylbenzene	NE	1.9 U	1.9 U	0.37 U	0.37 U	0.37 U	0.37 U
Methyl Acetate	NE	3.3 U	3.3 U	0.66 U	0.66 U	0.66 U	0.66 U
Methyl tert-Butyl Ether	NE	2.3 U	2.3 U	0.46 U	0.46 U	0.79 J	0.46 U
Methylcyclohexane	NE	3 U	3 U	0.59 U	0.59 U	0.59 U	0.59 U
Methylene Chloride	5	6.5 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U
Styrene	5	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U	1.7 U
Tetrachloroethene	5	10 U	10 U	2.1 U	2.1 U	2.1 U	2.1 U
Toluene	5	8 U	8 U	1.6 U	1.6 U	1.6 U	1.6 U
trans-1,2-Dichloroethene	NE	9.5 U	9.5 U	1.9 U	1.9 U	1.9 U	1.9 U
trans-1,3-Dichloropropene	0.4	8 U	8 U	1.6 U	1.6 U	1.6 U	1.6 U
Trichloroethene	5	9.5 U	9.5 U	1.9 U	1.9 U	1.9 U	1.9 U
Trichlorofluoromethane	NE	6.5 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U
Vinyl chloride	2	12 U	12 U	2.3 U	2.3 U	2.3 U	2.3 U
Xylenes, total	5	4.1 U	4.1 U	0.82 U	0.82 U	0.82 U	0.82 U
TOTAL TARGET VOCs	NE	ND	ND	2.9 J	20	5.89	13.8
TOTAL VOC TICs	NE	ND	ND	13 J	25 J	14 J	66.8 J
General Chemistry							
Sulfate (mg/l)	NE	5 U	5 U	5 U	5 U	10.1	5 U

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested

TABLE 6
SUMMARY OF MONITORING WELL SAMPLING RESULTS - 2010
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

URS SAMPLE ID LAB SAMPLE ID DILUTION FACTOR SAMPLE DATE UNITS	NYSDEC CLASS GA GW QUALITY STANDARD µg/l	MW-09-26D RTJ1427-05 1 10/13/10 µg/l	DUP 101410 RTJ1427-11 2 10/14/10 µg/l	TB 101410 RTJ1427-06 1 10/14/10 µg/l	FB 101410 RTJ1427-07 1 10/14/10 µg/l	FB102010 RTJ1777-01 1 10/20/10 µg/l	TB102010 RTJ1777-02 1 10/20/10 µg/l
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	2.1 U	4.2 U	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	5	1.5 U	3 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1,2-Trichloroethane	1	1.9 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U
1,1,2-Trichlorotrifluoroethane	NE	1.5 U	3 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethane	5	1.7 U	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U
1,1-Dichloroethene	5	2.5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene	NE	0.57 U	1.1 U	0.57 U	0.57 U	0.57 U	0.57 U
1,2-Dibromo-3-chloropropane	NE	5 U	10 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	NE	2 U	4 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	NE	1.2 U	2.4 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	0.6	0.83 U	1.7 U	0.83 U	0.83 U	0.83 U	0.83 U
1,2-Dichloropropane	1	1.7 U	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U
1,3-Dichlorobenzene	NE	1.2 U	2.4 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NE	2.1 J	2.2 U	1.1 U	1.1 U	1.1 U	1.1 U
2-Butanone (MEK)	50	1.5 U	3 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Hexanone	50	1.8 U	3.6 U	1.8 U	1.8 U	1.8 U	1.8 U
4-Methyl-2-pentanone (MIBK)	NE	1.7 U	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U
Acetone	50	1.9 U	3.8 U	1.9 U	1.9 U	3.1 J	1.9 U
Benzene	1	1.6 U	3.2 U	1.6 U	1.6 U	1.6 U	1.6 U
Bromodichloromethane	5	1.5 U	3 U	1.5 U	1.5 U	1.5 U	1.5 U
Bromoform	5	5 U	10 U	5 U	5 U	5 U	5 U
Bromomethane	5	4.3 U	8.6 U	4.3 U	4.3 U	4.3 U	4.3 U
Carbon disulfide	NE	2.1 U	4.2 U	2.1 U	2.1 U	2.1 U	2.1 U
Carbon Tetrachloride	5	2 U	4 U	2 U	2 U	2 U	2 U
Chlorobenzene	5	**14**	3.2 U	1.6 U	1.6 U	1.6 U	1.6 U
Chlorodibromomethane	5	1.7 U	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U
Chloroethane	5	4.2 J	5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	7	1.9 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U
Chloromethane	5	2.3 U	4.6 U	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,2-Dichloroethene	NE	1.8 U	3.6 U	1.8 U	1.8 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	0.4	1.4 U	2.8 U	1.4 U	1.4 U	1.4 U	1.4 U
Cyclohexane	NE	0.59 U	1.2 U	0.59 U	0.59 U	0.59 U	0.59 U
Dichlorodifluoromethane	NE	2.1 U	4.2 U	2.1 U	2.1 U	2.1 U	2.1 U
Ethylbenzene	5	1.6 U	3.2 U	1.6 U	1.6 U	1.6 U	1.6 U
Isopropylbenzene	NE	0.37 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U
Methyl Acetate	NE	0.66 U	1.3 U	0.66 U	0.66 U	0.66 U	0.66 U
Methyl tert-Butyl Ether	NE	0.46 U	0.91 U	0.46 U	0.46 U	0.46 U	0.46 U
Methylcyclohexane	NE	0.59 U	1.2 U	0.59 U	0.59 U	0.59 U	0.59 U
Methylene Chloride	5	1.3 U	2.6 U	1.3 U	1.3 U	1.3 U	1.3 U
Styrene	5	1.7 U	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U
Tetrachloroethene	5	2.1 U	4.2 U	2.1 U	2.1 U	2.1 U	2.1 U
Toluene	5	1.6 U	3.2 U	1.6 U	1.6 U	1.6 U	1.6 U
trans-1,2-Dichloroethene	NE	1.9 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U
trans-1,3-Dichloropropene	0.4	1.6 U	3.2 U	1.6 U	1.6 U	1.6 U	1.6 U
Trichloroethene	5	1.9 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U
Trichlorofluoromethane	NE	1.3 U	2.6 U	1.3 U	1.3 U	1.3 U	1.3 U
Vinyl chloride	2	2.3 U	4.6 U	2.3 U	2.3 U	2.3 U	2.3 U
Xylenes, total	5	0.82 U	1.6 U	0.82 U	0.82 U	0.82 U	0.82 U
TOTAL TARGET VOCs	NE	14	ND	ND	ND	ND	ND
TOTAL VOC TICs	NE	51.5 J	11 J	ND	ND	ND	ND
General Chemistry							
Sulfate (mg/l)	NE	5 U	5 U	NR	5 U	5 U	NR

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested

TABLE 7
SUMMARY OF MONITORING WELL SAMPLING RESULTS - OCTOBER 2011 - JANUARY 2012
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

URS SAMPLE ID	NYSDEC	MW-05-14S	MW-05-14S	MW-05-15D	MW-05-15D	MW-09-18S	MW-09-18S
LAB SAMPLE ID	CLASS GA	480-11107-6	480-14987-5	480-11107-7	480-14987-6	480-11107-4	480-14987-3
DILUTION FACTOR	GW QUALITY	1	1	1	4	1	1
SAMPLE DATE	STANDARD	10/11/11	1/12/2012	10/11/11	1/12/2012	10/10/11	1/12/2012
UNITS	µg/l	µg/l	ug/L	µg/l	ug/L	µg/l	ug/L
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	5	1.5 U	1.5 U	6.0 U	6 U	1.5 U	1.5 U
1,1,2-Trichloroethane	1	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	1.9 U
1,1,2-Trichlorotrifluoroethane	NE	1.5 U	1.5 U	6.0 U	6 U	1.5 U	1.5 U
1,1-Dichloroethane	5	1.7 U	1.7 U	**140**	6.8 U	1.7 U	1.7 U
1,1-Dichloroethene	5	2.5 U	2.5 U	10 U	10 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene	NE	0.57 U	0.57 U	2.3 U	2.3 U	0.57 U	0.57 U
1,2-Dibromo-3-chloropropane	NE	5 U	5 U	20 U	20 U	5 U	5 U
1,2-Dibromoethane (EDB)	NE	2 U	2 U	8.0 U	8 U	2 U	2 U
1,2-Dichlorobenzene	NE	1.2 U	1.2 U	4.8 U	4.8 U	1.2 U	1.2 U
1,2-Dichloroethane	0.6	0.83 U	0.83 U	3.3 U	3.3 U	0.83 U	0.83 U
1,2-Dichloropropane	1	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	1.7 U
1,3-Dichlorobenzene	NE	1.2 U	1.2 U	4.8 U	4.8 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NE	1.1 U	1.1 U	4.4 U	4.4 U	1.1 U	1.5 J
2-Butanone (MEK)	50	1.5 U	1.5 U	6 U	6 U	1.5 U	1.5 U
2-Hexanone	50	1.8 U	1.8 U	7.2 U	7.2 U	1.8 U	1.8 U
4-Methyl-2-pentanone (MIBK)	NE	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	1.7 U
Acetone	50	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	1.9 U
Benzene	1	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	1.6 U
Bromodichloromethane	5	1.5 U	1.5 U	6.0 U	6 U	1.5 U	1.5 U
Bromoform	5	5 U	5 U	20 U	20 U	5 U	5 U
Bromomethane	5	4.3 U	4.3 U	17 U	17 U	4.3 U	4.3 U
Carbon disulfide	NE	2.1 U	2.1 U	8.4 U	9.6 J	2.1 U	2.1 U
Carbon Tetrachloride	5	2 U	2 U	8.0 U	8 U	2 U	2 U
Chlorobenzene	5	1.6 U	1.6 U	6.4 U	6.4 U	1.6 J	1.6 U
Chlorodibromomethane	5	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	1.7 U
Chloroethane	5	4.7 JR	2.5 U	**430 R**	**100**	**79 R**	**130**
Chloroform	7	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	1.9 U
Chloromethane	5	2.3 U	2.3 U	9.2 U	9.2 U	2.3 U	2.3 U
cis-1,2-Dichloroethene	NE	1.8 U	1.8 U	7.2 U	7.2 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	0.4	1.4 U	1.4 U	5.6 U	5.6 U	1.4 U	1.4 U
Cyclohexane	NE	0.59 U	0.59 U	2.3 U	2.3 U	0.59 U	0.59 U
Dichlorodifluoromethane	NE	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	2.1 U
Ethylbenzene	5	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	1.6 U
Isopropylbenzene	NE	0.37 U	0.37 U	1.5 U	1.5 U	0.37 U	0.37 U
Methyl Acetate	NE	0.66 U	0.66 U	2.7 U	2.7 U	0.66 U	0.66 U
Methyl tert-Butyl Ether	NE	0.46 U	0.46 U	1.8 U	1.8 U	0.46 U	0.46 U
Methylcyclohexane	NE	0.59 U	0.59 U	2.4 U	2.4 U	0.59 U	0.59 U
Methylene Chloride	5	1.3 U	1.3 U	5.2 U	5.2 U	1.3 U	1.3 U
Styrene	5	1.7 U	1.7 U	6.8 U	6.8 U	1.7 U	1.7 U
Tetrachloroethene	5	2.1 U	2.1 U	8.4 U	8.4 U	2.1 U	2.1 U
Toluene	5	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	1.6 U
trans-1,2-Dichloroethene	NE	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	1.9 U
trans-1,3-Dichloropropene	0.4	1.6 U	1.6 U	6.4 U	6.4 U	1.6 U	1.6 U
Trichloroethene	5	1.9 U	1.9 U	7.6 U	7.6 U	1.9 U	1.9 U
Trichlorofluoromethane	NE	1.3 U	1.3 U	5.2 U	5.2 U	1.3 U	1.3 U
Vinyl chloride	2	2.3 U	2.3 U	9.2 U	9.2 U	2.3 U	2.3 U
Xylenes, total	5	0.82 U	0.82 U	3.3 U	3.3 U	0.82 U	0.82 U
TOTAL TARGET VOCs	NE	4.7 J	ND	570	100	80.6	131.5
TOTAL VOC TICs	NE	ND	NR	ND J	NR	ND J	NR
Dissolved Gasses							
Ethane	NE	49 U	NR	49 U	NR	49 U	NR
Ethene	NE	52 U	NR	52 U	NR	52 U	NR
Methane	NE	5,500	NR	1,200	NR	6,600	NR
General Chemistry							
Sulfate (mg/l)	NE	23.2	NR	9.1 J	NR	1.6 J	NR
Total Organic Carbon (mg/l)	NE	7.2	NR	9.6	NR	7.3	NR

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested
R : Result rejected due to limititations identified in the QA/QC review.

TABLE 7
SUMMARY OF MONITORING WELL SAMPLING RESULTS - OCTOBER 2011 - JANUARY 2012
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

URS SAMPLE ID	NYSDEC	MW-09-19D	MW-09-19D	MW-09-22S	MW-09-22S	MW-09-23D	MW-09-23D
LAB SAMPLE ID	CLASS GA	480-11107-3	480-14987-4	480-11107-10	480-14987-7	480-11107-9	480-14987-8
DILUTION FACTOR	GW QUALITY	1/4	4	2	2	2	2
SAMPLE DATE	STANDARD	10/10/11	1/12/2012	10/11/11	1/12/2012	10/11/11	1/12/2012
UNITS	µg/l	µg/l	ug/L	µg/l	ug/L	µg/l	ug/L
Volatile Organic Compounds							
1,1,1-Trichloroethane	5	3.3 J	8.4 U	4.2 U	4.2 U	4.2 U	4.2 U
1,1,2,2-Tetrachloroethane	5	1.5 U	6 U	3 U	3 U	3 U	3 U
1,1,2-Trichloroethane	1	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U
1,1,2-Trichlorotrifluoroethane	NE	1.5 U	6 U	3 U	3 U	3 U	3 U
1,1-Dichloroethane	5	**130**	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U
1,1-Dichloroethene	5	2.5 U	10 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	0.57 U	2.3 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromo-3-chloropropane	NE	5 U	20 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane (EDB)	NE	2 U	8 U	4 U	4 U	4 U	4 U
1,2-Dichlorobenzene	NE	1.2 U	4.8 U	2.4 U	2.4 U	2.4 U	2.4 U
1,2-Dichloroethane	0.6	0.83 U	3.3 U	1.7 U	1.7 U	1.7 U	1.7 U
1,2-Dichloropropane	1	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U
1,3-Dichlorobenzene	NE	1.2 U	4.8 U	2.4 U	2.4 U	2.4 U	2.4 U
1,4-Dichlorobenzene	NE	1.9 J	4.4 U	2.6 J	2.2 U	2.2 U	2.4 J
2-Butanone (MEK)	50	1.5 U	6 U	3 U	3 U	3 U	3 U
2-Hexanone	50	1.8 U	7.2 U	3.6 U	3.6 U	3.6 U	3.6 U
4-Methyl-2-pentanone (MIBK)	NE	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U
Acetone	50	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U
Benzene	1	1.6 U	6.4 U	3.2 U	3.2 U	3.2 U	3.2 U
Bromodichloromethane	5	1.5 U	6 U	3 U	3 U	3 U	3 U
Bromoform	5	5 U	20 U	10 U	10 U	10 U	10 U
Bromomethane	5	4.3 U	17 U	8.6 U	8.6 U	8.6 U	8.6 U
Carbon disulfide	NE	2.1 U	8.4 U	4.2 U	4.2 U	4.2 U	4.2 U
Carbon Tetrachloride	5	2 U	8 U	4 U	4 U	4 U	4 U
Chlorobenzene	5	1.6 U	6.4 U	3.2 U	3.2 U	3.2 U	3.2 U
Chlorodibromomethane	5	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U
Chloroethane	5	**340 DR**	10 U	5 UR	5 U	5 UR	5 U
Chloroform	7	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U
Chloromethane	5	2.3 U	9.2 U	4.6 U	4.6 U	4.6 U	4.6 U
cis-1,2-Dichloroethene	NE	1.8 U	7.2 U	3.6 U	3.6 U	3.6 U	3.6 U
cis-1,3-Dichloropropene	0.4	1.4 U	5.6 U	2.8 U	2.8 U	2.8 U	2.8 U
Cyclohexane	NE	0.59 U	2.3 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichlorodifluoromethane	NE	2.1 U	8.4 U	4.2 U	4.2 U	4.2 U	4.2 U
Ethylbenzene	5	1.6 U	6.4 U	3.2 U	3.2 U	3.2 U	3.2 U
Isopropylbenzene	NE	0.37 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U
Methyl Acetate	NE	0.66 U	2.7 U	1.3 U	1.3 U	1.3 U	1.3 U
Methyl tert-Butyl Ether	NE	0.72 J	1.8 U	0.91 U	0.91 U	0.91 U	0.91 U
Methylcyclohexane	NE	0.59 U	2.4 U	1.2 U	1.2 U	1.2 U	1.2 U
Methylene Chloride	5	1.3 U	5.2 U	2.6 U	2.6 U	2.6 U	2.6 U
Styrene	5	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	5	2.1 U	8.4 U	4.2 U	4.2 U	4.2 U	4.2 U
Toluene	5	1.6 U	6.4 U	3.2 U	3.2 U	3.2 U	3.2 U
trans-1,2-Dichloroethene	NE	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U
trans-1,3-Dichloropropene	0.4	1.6 U	6.4 U	3.2 U	3.2 U	3.2 U	3.2 U
Trichloroethene	5	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U
Trichlorofluoromethane	NE	1.3 U	5.2 U	2.6 U	2.6 U	2.6 U	2.6 U
Vinyl chloride	2	2.3 U	9.2 U	4.6 U	4.6 U	4.6 U	4.6 U
Xylenes, total	5	0.82 U	3.3 U	1.6 U	1.6 U	1.6 U	1.6 U
TOTAL TARGET VOCs	NE	475.92	ND	2.6 J	ND	ND	2.4 J
TOTAL VOC TICs	NE	ND	NR	ND	NR	ND	NR
Dissolved Gasses							
Ethane	NE	49 U	NR	49 U	NR	49 U	NR
Ethene	NE	52 U	NR	52 U	NR	52 U	NR
Methane	NE	6,600	NR	8,500	NR	5,700	NR
General Chemistry							
Sulfate (mg/l)	NE	7.5	NR	2.0 JB	NR	2.2 JB	NR
Total Organic Carbon (mg/l)	NE	9.4	NR	11.2	NR	10.9	NR

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested
R : Result rejected due to limititations identified in the QA/QC review.

TABLE 7
SUMMARY OF MONITORING WELL SAMPLING RESULTS - OCTOBER 2011 - JANUARY 2012
OPERABLE UNIT NO. 2
FORMER COLUMBIA CEMENT COMPANY FACILITY
FREEPORT, NEW YORK

URS SAMPLE ID	NYSDEC	MW-09-24S	MW-09-24S	MW-09-25D	MW-09-25D	MW-09-26D
LAB SAMPLE ID	CLASS GA	480-11107-1	480-14987-1	480-11107-2	480-14987-2	480-11107-5
DILUTION FACTOR	GW QUALITY	1	1	1	1	1
SAMPLE DATE	STANDARD	10/10/11	1/11/2012	10/10/11	1/11/2012	10/11/11
UNITS	µg/l	µg/l	mg/L	µg/l	ug/L	µg/l
Volatile Organic Compounds						
1,1,1-Trichloroethane	5	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	5	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1,2-Trichloroethane	1	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
1,1,2-Trichlorotrifluoroethane	NE	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethane	5	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
1,1-Dichloroethene	5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene	NE	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
1,2-Dibromo-3-chloropropane	NE	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	NE	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	NE	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	0.6	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
1,2-Dichloropropane	1	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
1,3-Dichlorobenzene	NE	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NE	1.7 J	1.8 J	1.9 J	1.6 J	2.4 J
2-Butanone (MEK)	50	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
2-Hexanone	50	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
4-Methyl-2-pentanone (MIBK)	NE	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Acetone	50	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzene	1	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Bromodichloromethane	5	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Bromoform	5	5 U	5 U	5 U	5 U	5 U
Bromomethane	5	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Carbon disulfide	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Carbon Tetrachloride	5	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	5	1.6 U	1.6 U	1.6 U	1.6 U	**13**
Chlorodibromomethane	5	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Chloroethane	5	**13 R**	**14**	**16 R**	**19**	**35**
Chloroform	7	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Chloromethane	5	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,2-Dichloroethene	NE	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	0.4	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Cyclohexane	NE	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
Dichlorodifluoromethane	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Ethylbenzene	5	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Isopropylbenzene	NE	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Methyl Acetate	NE	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
Methyl tert-Butyl Ether	NE	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
Methylcyclohexane	NE	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
Methylene Chloride	5	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Styrene	5	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Tetrachloroethene	5	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Toluene	5	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
trans-1,2-Dichloroethene	NE	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
trans-1,3-Dichloropropene	0.4	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Trichloroethene	5	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Trichlorofluoromethane	NE	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Vinyl chloride	2	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Xylenes, total	5	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
TOTAL TARGET VOCs	NE	14.7	15.8	17.9	20.6	50.4
TOTAL VOC TICs	NE	ND	NR	ND	NR	ND
Dissolved Gasses						
Ethane	NE	49 U	NR	49 U	NR	49 U
Ethene	NE	52 U	NR	52 U	NR	52 U
Methane	NE	3,100	NR	6,500	NR	11,000
General Chemistry						
Sulfate (mg/l)	NE	23.7 J	NR	1.5 U	NR	1.7 J
Total Organic Carbon (mg/l)	NE	10.7	NR	14	NR	5.3

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
mg/l : Milligrams per liter
U : Analyte not detected at stated detection limit.
J : The result is a quantitatively estimated value.
D : Concentration reported is from dilution run.
BOLD : Concentration exceeds NYSDEC Ambient Water Quality Standard
ND : Not detected.
NR : Analysis not requested
R : Result rejected due to limititations identified in the QA/QC review.

TABLE 8
SUMMARY OF TIDAL MONITORING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT No. 2
FREEPORT, NEW YORK

Monitoring Point	Freeport Creek	MW-97-1S	MW-98-9D	MW-05-14S	MW-05-15D	MW-09-18S	MW-09-19D	MW-09-24S	MW-09-25D
Minimum Elevation (ft MSL)	-2.66	0.29	0.34	0.34	0.31	0.34	0.34	-1.27	-1.39
Maximum Elevation (ft MSL)	2.75	0.76	0.81	0.77	0.91	0.76	0.89	1.75	1.65
Average Elevation (ft MSL)	-0.11	0.52	0.58	0.54	0.61	0.55	0.62	0.26	0.14
Elevation Range (ft)	5.41	0.47	0.47	0.43	0.59	0.41	0.55	3.02	3.04
Freeport Low Tide (ft MSL) 12/2/09 14:15	-2.66	0.43	0.48	0.54	0.45	0.48	0.48	-1.27	-1.39
Freeport Creek High Tide (ft MSL) 12/2/09 7:30	2.75	0.69	0.75	0.63	0.84	0.68	0.83	1.74	1.65

Notes:
ft MSL : Elevation in feet above or below Mean Sea Level

TABLE 9
SUMMARY OF SURFACE WATER AND SEDIMENT SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

SURFACE WATER SAMPLES

URS SAMPLE ID	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-07	FB111709
LAB SAMPLE ID	RK0906-01	RK0906-07	RK0906-03	RK0906-06	RK0906-04	RK0906-05	RK0906-08	RK0906-09
SAMPLE DEPTH (ft)	3 ft	10 ft	3.5 ft	10 ft	3 ft	4.5 ft	3.5 ft	Field Blank
SAMPLE DATE	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09
UNITS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Volatile Organic Compounds								
Chlorobenzene	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Chloroethane	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U

SEDIMENT SAMPLES

URS SAMPLE ID	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6	SED-7
LAB SAMPLE ID	RK0906-02	RK0906-14	RK0906-10	RK0906-13	RK0906-11	RK0906-12	RK0906-15
SAMPLE DEPTH (ft)	6.05 ft	20.35 ft	6.85 ft	20.5 ft	6.45 ft	9.35 ft	6.85 ft
SAMPLE DATE	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09	11/17/09
UNITS	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Volatile Organic Compounds							
Chlorobenzene	0.38 U	1.2 U	0.48 U	1.1 U	0.39 U	0.42 U	0.42 U
Chloroethane	0.66 U	2.2 U	0.83 U	1.8 U	0.67 U	0.73 U	0.73 U

Notes:
NYSDEC : New York State Department of Environmental Conservation
µg/l : Micrograms per liter
µg/kg : Micrograms per kilogram
U : Analyte not detected at stated detection limit.
SW-7 and SED-7 are duplicates of SW-3 and SED-3, respectively.
Surface water sample depth is the midpoint of the water column.
Sediment samples collected from the top 12 inches of sediment. Depth shown is the depth to creek bottom.

TABLE 10
SUMMARY OF VAPOR INTRUSION SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY SITE
OPERABLE UNIT No. 2
FREEPORT, NEW YORK

	SAMPLE LOCATION	162 HANSE AVENUE											
	SAMPLE TYPE	SUB-SLAB		INDOOR AIR		DUPLICATE		SUB-SLAB		INDOOR AIR		AMBIENT AIR	
	SAMPLE ID	SS-162-01		IA-162-01		20090312-FD-1		SS-162-02		IA-162-02		AA-162-01	
	LAB SAMPLE ID	789496		789497		789500		789498		789499		789501	
	SAMPLE DATE	3/12/2009		3/12/2009		3/12/2009		3/12/2009		3/12/2009		3/12/2009	
	DILUTION FACTOR	1		1		1		1		1		1	
	UNITS	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv
67-64-1	Acetone	26	11	100	44	93	39	190	81	50	21	12 U	5 U
71-43-2	Benzene	0.64 U	0.2 U	3.5	1.1	3.2	1	1.6 U	0.5 U	0.64 U	0.2 U	0.64 U	0.2 U
56-23-5	Carbon Tetrachloride	NR	NR	0.63	0.1	0.63	0.1	NR	NR	0.25 U	0.04 U	0.63	0.1
108-90-7	Chlorobenzene	0.92 U	0.2 U	1.4 U	0.3 U	1.6 U	0.34 U	2.3 U	0.5 U	0.92 U	0.2 U	0.92 U	0.2 U
75-00-3	Chloroethane	1.3 U	0.5 U	2 U	0.75 U	2.2 U	0.85 U	3.4 U	1.3 U	1.3 U	0.5 U	1.3 U	0.5 U
75-34-3	1,1-Dichloroethane	0.81 U	0.2 U	1.2 U	0.3 U	1.4 U	0.34 U	3.9	0.96	0.81 U	0.2 U	0.81 U	0.2 U
107-06-2	1,2-Dichloroethane	0.81 U	0.2 U	1.2 U	0.3 U	1.4 U	0.34 U	2 U	0.5 U	0.81 U	0.2 U	0.81 U	0.2 U
75-35-4	1,1-Dichloroethene	0.79 U	0.2 U	1.2 U	0.3 U	1.3 U	0.34 U	2 U	0.5 U	0.79 U	0.2 U	0.79 U	0.2 U
156-59-2	cis-1,2-Dichloroethene	0.79 U	0.2 U	1.2 U	0.3 U	1.3 U	0.34 U	2 U	0.5 U	0.79 U	0.2 U	0.79 U	0.2 U
156-60-5	trans-1,2-Dichloroethene	0.79 U	0.2 U	1.2 U	0.3 U	1.3 U	0.34 U	2 U	0.5 U	0.79 U	0.2 U	0.79 U	0.2 U
100-41-4	Ethylbenzene	0.87 U	0.2 U	4.3	1	4	0.92	2.2 U	0.5 U	0.87 U	0.2 U	0.87 U	0.2 U
76-13-1	Freon 113	1.2 U	0.2 U	2.3 U	0.3 U	2.6 U	0.34 U	3.8 U	0.5 U	1.5 U	0.2 U	1.5 U	0.2 U
76-14-2	Freon 114	5.3	0.76	2.1 U	0.3 U	2.4 U	0.34 U	3.5 U	0.5 U	1.4 U	0.2 U	1.4 U	0.2 U
142-82-5	n-Heptane	0.82 U	0.2 U	1.2 U	0.3 U	1.4 U	0.34 U	2 U	0.5 U	0.82 U	0.2 U	0.82 U	0.2 U
110-54-3	n-Hexane	1.8 U	0.5 U	2.6 U	0.75 U	3 U	0.85 U	4.6 U	1.3 U	1.8 U	0.5 U	1.8 U	0.5 U
75-09-2	Methylene Chloride	1.7 U	0.5 U	73	21	69	20	4.5 U	1.3 U	24	6.9	1.7 U	0.5 U
78-93-3	Methl Ethyl Ketone	2.6	0.87	2.2 U	0.75 U	2.5 U	0.85 U	7.4	2.5	1.5 U	0.5 U	1.5 U	0.5 U
109-66-0	Pentane	1.5 U	0.5 U	2.2 U	0.75 U	2.5 U	0.85 U	4.1	1.4	1.5 U	0.5 U	1.5 U	0.5 U
127-18-4	Tetrachloroethene	16	2.4	2.8	0.41	2.8	0.42	17	2.5	1.4 U	0.2 U	1.4 U	0.2 U
108-88-3	Toluene	1.3	0.35	4.1	1.1	4.1	1.1	2.2	0.59	0.75 U	0.2 U	1.1	0.29
71-55-6	1,1,1-Trichloroethane	1.1 U	0.2 U	1.6 U	0.3 U	1.9 U	0.34 U	6	1.1	1.1 U	0.2 U	1.1 U	0.2 U
79-01-6	Trichloroethene	1.1 U	0.2 U	0.21 U	0.04 U	0.21 U	0.04 U	2.7 U	0.5 U	0.33	0.06	0.21 U	0.04 U
75-01-4	Vinyl Chloride	0.51 U	0.2 U	0.2 U	0.08 U	0.2 U	0.08 U	1.4	0.55	0.2 U	0.08 U	0.2 U	0.08 U
1330-20-7	m,p-Xylene	2.2 U	0.5 U	9.6	2.2	8.3	1.9	5.6 U	1.3 U	2.2 U	0.5 U	2.2 U	0.5 U
95-47-6	o-Xylene	0.87 U	0.2 U	3.8	0.88	3.2	0.74	2.2 U	0.5 U	0.87 U	0.2 U	0.87 U	0.2 U
1330-20-7	Xylene (total)	0.87 U	0.2 U	13	3.1	12	2.7	2.2 U	0.5 U	0.87 U	0.2 U	0.87 U	0.2 U

Notes:
µg/m3 : Micrograms per cubic meter
ppbv : Parts per million by volume
U : Analyte not detected at stated detection limit.
NR : Analysis not requested

TABLE 10
SUMMARY OF VAPOR INTRUSION SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY SITE
OPERABLE UNIT No. 2
FREEPORT, NEW YORK

	SAMPLE LOCATION	191 HANSE AVENUE							
	SAMPLE TYPE	SUB-SLAB		INDOOR AIR		SUB-SLAB		INDOOR AIR	
	SAMPLE ID	SS-191-01		IA-191-01		SS-191-02		IA-191-02	
	LAB SAMPLE ID	789502		789503		789504		789505	
	SAMPLE DATE	3/12/2009		3/12/2009		3/12/2009		3/12/2009	
	DILUTION FACTOR	1		1		1		1	
	UNITS	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv
67-64-1	Acetone	13	5.4	12 U	5 U	38	16	12 U	5 U
71-43-2	Benzene	0.64 U	0.2 U	0.93	0.29	0.7	0.22	1.1	0.33
56-23-5	Carbon Tetrachloride	NR	NR	0.82	0.13	NR	NR	0.39	0.062
108-90-7	Chlorobenzene	0.92 U	0.2 U	0.92 U	0.2 U	0.92 U	0.2 U	0.92 U	0.2 U
75-00-3	Chloroethane	1.3 U	0.5 U	1.3 U	0.5 U	1.3 U	0.5 U	1.3 U	0.5 U
75-34-3	1,1-Dichloroethane	0.81 U	0.2 U	0.81 U	0.2 U	0.81 U	0.2 U	0.81 U	0.2 U
107-06-2	1,2-Dichloroethane	0.81 U	0.2 U	0.81 U	0.2 U	0.81 U	0.2 U	0.81 U	0.2 U
75-35-4	1,1-Dichloroethene	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U
156-59-2	cis-1,2-Dichloroethene	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U
156-60-5	trans-1,2-Dichloroethene	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U	0.79 U	0.2 U
100-41-4	Ethylbenzene	0.87 U	0.2 U	0.87 U	0.2 U	2.8	0.65	0.87 U	0.2 U
76-13-1	Freon 113	1.5 U	0.2 U	1.5 U	0.2 U	1.5 U	0.2 U	1.5 U	0.2 U
76-14-2	Freon 114	1.4 U	0.2 U	1.4 U	0.2 U	1.4 U	0.2 U	1.4 U	0.2 U
142-82-5	n-Heptane	0.82 U	0.2 U	0.82 U	0.2 U	49	12	0.82 U	0.2 U
110-54-3	n-Hexane	1.8 U	0.5 U	1.8 U	0.5 U	8.1	2.3	1.8 U	0.5 U
75-09-2	Methylene Chloride	1.7 U	0.5 U	1.7 U	0.5 U	1.9	0.56	1.7 U	0.5 U
78-93-3	Methl Ethyl Ketone	1.5	0.52	1.5 U	0.5 U	12	3.9	1.5 U	0.5 U
109-66-0	Pentane	1.5 U	0.5 U	2.6	0.88	68	23	3.8	1.3
127-18-4	Tetrachloroethene	9.5	1.4	1.4 U	0.2 U	9.5	1.4	1.4 U	0.2 U
108-88-3	Toluene	1.4	0.36	1.7	0.46	3.1	0.82	1.4	0.38
71-55-6	1,1,1-Trichloroethane	1.1 U	0.2 U	1.1 U	0.2 U	5	0.91	1.1 U	0.2 U
79-01-6	Trichloroethene	1.1 U	0.2 U	0.21 U	0.04 U	1.1 U	0.2 U	0.21 U	0.04 U
75-01-4	Vinyl Chloride	0.51 U	0.2 U	0.2 U	0.08 U	0.51 U	0.2 U	0.2 U	0.08 U
1330-20-7	m,p-Xylene	2.2 U	0.5 U	2.2 U	0.5 U	14	3.2	2.2 U	0.5 U
95-47-6	o-Xylene	0.87 U	0.2 U	0.87 U	0.2 U	4.8	1.1	0.87 U	0.2 U
1330-20-7	Xylene (total)	0.87 U	0.2 U	0.87 U	0.2 U	19	4.4	0.87 U	0.2 U

Notes:
µg/m3 : Micrograms per cubic meter
ppbv : Parts per million by volume
U : Analyte not detected at stated detection limit.
NR : Analysis not requested

TABLE 10
SUMMARY OF VAPOR INTRUSION SAMPLING RESULTS
FORMER COLUMBIA CEMENT COMPANY SITE
OPERABLE UNIT No. 2
FREEPORT, NEW YORK

	SAMPLE LOCATION	272 BUFFALO AVENUE					
	SAMPLE TYPE	SUB-SLAB		SUB-SLAB		AMBIENT AIR	
	SAMPLE ID	SS-272-01		SS-272-02		AA-272-01	
	LAB SAMPLE ID	813511		813512		813513	
	SAMPLE DATE	11/12/09		11/12/09		11/12/09	
	DILUTION FACTOR	1.00		1.25		1.00	
	UNITS	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv
67-64-1	Acetone	18	7.7	120	49	12	5
71-43-2	Benzene	0.64 U	0.2 U	2.6	0.81	0.64 U	0.2 U
108-90-7	Chlorobenzene	0.92 U	0.2 U	1.2 U	0.25 U	0.92 U	0.2 U
75-00-3	Chloroethane	1.3 U	0.5 U	1.7 U	0.63 U	1.3 U	0.5 U
75-34-3	1,1-Dichloroethane	4.5	1.1	8.1	2	0.81 U	0.2 U
107-06-2	1,2-Dichloroethane	0.81 U	0.2 U	1 U	0.25 U	0.81 U	0.2 U
75-35-4	1,1-Dichloroethene	0.79 U	0.2 U	0.99 U	0.25 U	0.79 U	0.2 U
156-59-2	cis-1,2-Dichloroethene	0.79 U	0.2 U	7.1	1.8	0.79 U	0.2 U
156-60-5	trans-1,2-Dichloroethene	0.79 U	0.2 U	1.5	0.37	0.79 U	0.2 U
100-41-4	Ethylbenzene	0.87 U	0.2 U	1.1 U	0.25 U	0.87 U	0.2 U
76-13-1	Freon 113	1.5 U	0.2 U	1.9 U	0.25 U	1.5 U	0.2 U
76-14-2	Freon 114	2.1	0.3	1.7 U	0.25 U	1.4 U	0.2 U
142-82-5	n-Heptane	0.82 U	0.2 U	1.4	0.34	0.82 U	0.2 U
110-54-3	n-Hexane	7	2	2.2 U	0.63 U	1.8 U	0.5 U
75-09-2	Methylene Chloride	1.7 U	0.5 U	2.2 U	0.63 U	1.7 U	0.5 U
78-93-3	Methyl Ethyl Ketone	1.5 U	0.5 U	7.4	2.5	8.8	3
109-66-0	Pentane	1.5 U	0.5 U	4.4	1.5	1.7	0.59
127-18-4	Tetrachloroethene	120	17	95	14	1.4 U	0.2 U
108-88-3	Toluene	2.6	0.69	6	1.6	2	0.53
71-55-6	1,1,1-Trichloroethane	100	19	1.4 U	0.25 U	1.1 U	0.2 U
79-01-6	Trichloroethene	5.9	1.1	86	16	1.1 U	0.2 U
75-01-4	Vinyl Chloride	0.51 U	0.2 U	0.64 U	0.25 U	0.51 U	0.2 U
1330-20-7	Xylene (m,p)	2.2 U	0.5 U	2.7 U	0.63 U	2.2 U	0.5 U
95-47-6	Xylene (o)	0.87 U	0.2 U	1.1 U	0.25 U	0.87 U	0.2 U
1330-20-7	Xylene (total)	0.87 U	0.2 U	1.1 U	0.25 U	0.87 U	0.2 U

Notes:
µg/m3 : Micrograms per cubic meter
ppbv : Parts per million by volume
U : Analyte not detected at stated detection limit.
NR : Analysis not requested

TABLE 11
SUMMARY OF CONTAMINANT PHYSICAL PROPERTIES
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

Compound	Molecular Weight	Solubility mg/L	Vapor Pressure mm Hg at 20 degC	Henry's Law Constant atm-m3/mole	Log Kow	Log Koc
1,1,1-Trichloroethane	133.41	4,400	100	8 x 10-3	2.47	2.19
1,1-Dichloroethane	98.96	5,500	180	5.87 x 10-3	1.79	1.65
Chloroethane	64.52	5,740	1064	8.48 x 10-3	1.43	0.51
Acetone	58.09	Miscible	231	3.67 x 10-5	-0.24	-0.43

Legend: Kow = Octanal Water Partition Coefficient
Koc = Organic Carbon Partition Coefficient

References:

Suthersan, Suthan S., 2002. Natural and Enhanced Remediation Systems. Lewis Publishers. 364 pp.

Howard, Philip H., 1990. Handbook of Environmental Fate and Exposure Data For Organic Chemicals: Volume II; Solvents. Lewis Publishers. 535 pp.

TABLE 12
SUMMARY OF CONTAMINANT FATE AND TRANSPORT PARAMENTER
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

Compound	log Koc	Koc	Kd	R	Vc (ft/d)	Travel Time to Freeport Creek (years)
1,1,1-Trichloroethane	2.19	155	0.2628	2.4900	0.1285	7.2
1,1-Dichloroethane	1.65	45	0.0763	1.4300	0.2238	4.2
Chloroethane	0.51	3.2	0.0054	1.0307	0.3105	3.1
Acetone	-0.43	0.37	0.0006	1.0036	0.3189	2.9

Assumptions

Groundwater Velocity (V):	0.32	ft/d
foc:	0.0017	
Bulk Density:	1.7	g/cm3
Porosity:	0.3	

Legend:

Koc : Organic Carbon Partition Coefficient
Kd : Distribution Coefficient
R : Retardation Factor
Vc : Average Contaminant Transport Velocity
Foc : Fraction of Organic Carbon

TABLE 13
SUMMARY OF REMEDIAL INVESTIGATION DATA
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

DECEMBER 2008 GROUNDWATER SCREENING SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Groundwater Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	45	0	ND	5	0 of 45
	1,1-Dichloroethane	45	0	ND	5	0 of 45
	Chloroethane	45	35	ND - 1,500	5	26 of 45
	Chlorobenzene	45	40	ND - 63	5	21 of 45
	Methylene Chloride	45	0	ND	5	0 of 45

SEPTEMBER 2009 GROUNDWATER SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Groundwater Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	18	0	ND	5	0 of 18
	1,1-Dichloroethane	18	1	ND - 4.1	5	0 of 18
	Chloroethane	18	11	ND - 3,000	5	11 of 18
	Chlorobenzene	18	15	ND - 15	5	10 of 18
	Methylene Chloride	18	1	ND - 13	5	1 of 18

SEPT. - OCT. 2010 GROUNDWATER SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Groundwater Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	17	0	ND	5	0 of 18
	1,1-Dichloroethane	17	0	ND	5	0 of 18
	Chloroethane	17	10	ND - 790	5	8 of 17
	Chlorobenzene	17	11	ND - 16	5	8 of 18
	Methylene Chloride	17	0	ND	5	1 of 18

OCTOBER 2011 GROUNDWATER SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Groundwater Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	13	1	ND - 3.3	5	0 of 13
	1,1-Dichloroethane	13	3	ND - 140	5	3 of 13
	1,2-Dichlorobenzene	13	3	ND - 0.21	NA	0 of 13
	1,4-Dichlorobenzene	13	9	MD - 2.8	NA	0 of 13
	Acetone	13	4	ND - 0.89	50	0 of 13
	Chloroethane	5	4	ND - 55	5	4 of 5
	Chlorobenzene	13	5	ND - 140	5	3 of 13
	Cyclohexane	13	1	ND - 0.29	NA	0 of 13
	Isopropylbenzene	13	2	ND - 0.99	NA	0 of 13
	Methylcyclohexane	13	1	ND - 0.33	NA	0 of 13
	Methyl tert-Butyl Ether	13	2	ND - 0.72	NA	0 of 13
	Xylene (total)	13	3	ND - 0.67	5	0 of 13

Whole VOC List

TABLE 13
SUMMARY OF REMEDIAL INVESTIGATION DATA
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

JANUARY 2012 GROUNDWATER SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Groundwater Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	1,4-Dichlorbenzene	8	4	ND - 2.4	NA	0 of 8
	Chloroethane	8	4	ND - 130	5	4 of 8

Whole VOC List

NOVEMBER 2009 SURFACE WATER SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	NYSDEC Surface Water Quality Standard (µg/l)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	Chloroethane	6	0	ND	5	0 of 6
	Chlorobenzene	6	0	ND	5	0 of 6

NOVEMBER 2009 SEDIMENT SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/l)	Most Stringent NYSDEC Sediment Screening Criteria (µg/g OC)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	Chloroethane	6	0	ND	NA	0 of 6
	Chlorobenzene	6	0	ND	3.5	0 of 6

MARCH & NOVEMBER 2009 SUB-SLAB VAPOR SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/m3)	Applicable New York SCG (µg/m3)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	Acetone	6	6	ND - 190	NA	NA
	Benzene	6	2	ND - 2.6	NA	NA
	Chlorobenzene	6	0	ND	NA	NA
	Chloroethane	6	0	ND	NA	NA
	1,1-Dichloroethane	6	3	ND - 8.1	NA	NA
	1,2-Dichloroethane	6	0	ND	NA	NA
	1,1-Dichloroethene	6	0	ND	NA	NA
	cis-1,2-Dichloroethene	6	1	ND - 7.1	NA	NA
	trans-1,2-Dichloroethene	6	1	ND - 1.5	NA	NA
	Ethylbenzene	6	1	ND - 2.8	NA	NA
	Freon 113	6	0	ND	NA	NA
	Freon 114	6	2	ND - 5.3	NA	NA
	n-Heptane	6	2	ND - 49	NA	NA
	n-Hexane	6	2	ND - 8.1	NA	NA
	Methylene Chloride	6	1	ND - 1.9	NA	NA
	Methl Ethyl Ketone	6	5	ND - 12	NA	NA
	Pentane	6	3	ND - 68	NA	NA
	Tetrachloroethene	6	6	ND - 120	NA	NA
	Toluene	6	4	ND - 6	NA	NA
	1,1,1-Trichloroethane	6	3	ND - 100	NA	NA
	Trichloroethene	6	2	ND - 86	NA	NA
	Vinyl Chloride	6	1	ND - 1.4	NA	NA
	m,p-Xylene	6	1	ND - 1.4	NA	NA
	o-Xylene	6	1	ND - 4.8	NA	NA
	Xylene (total)	6	1	ND - 19	NA	NA

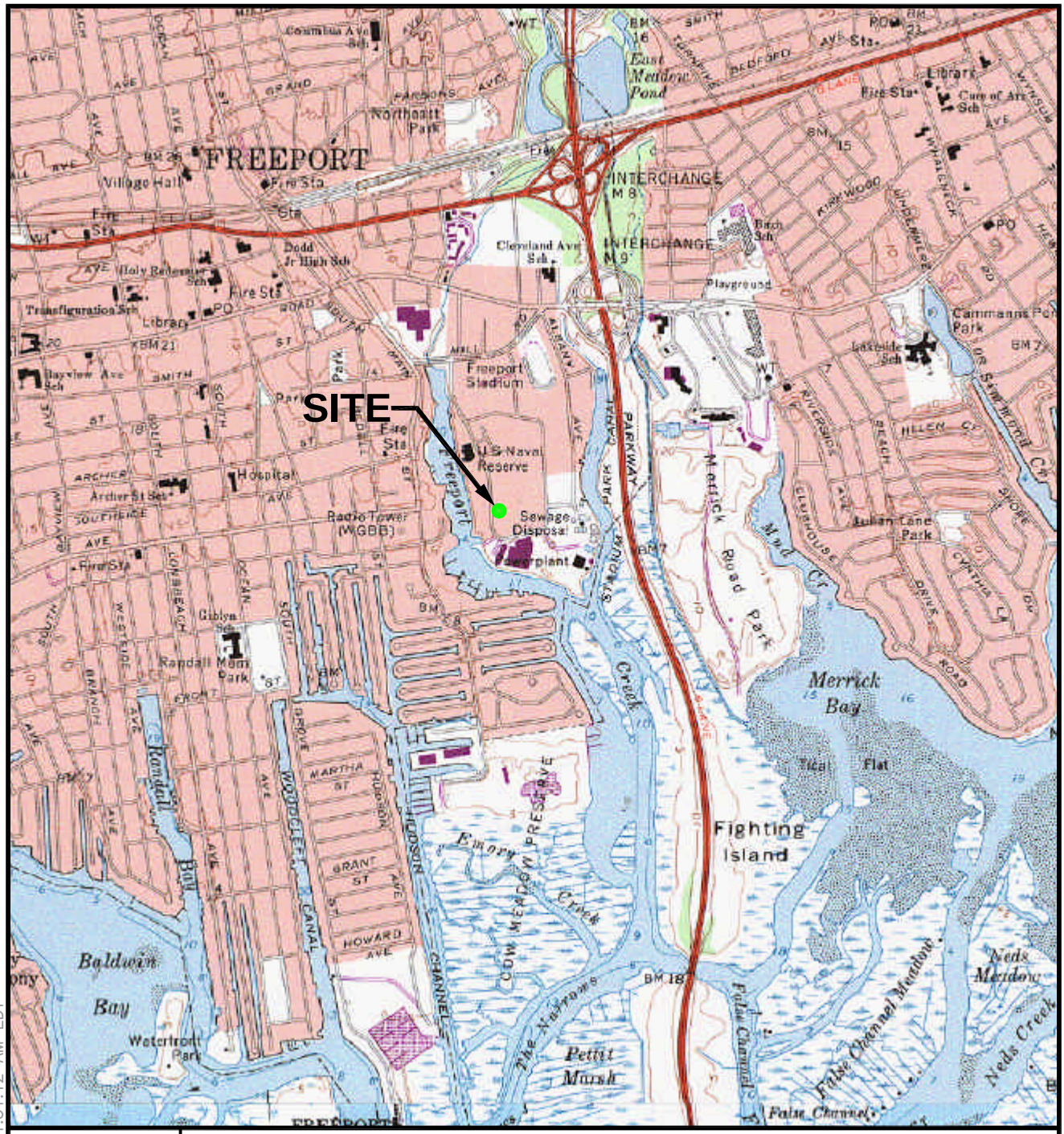
TABLE 13
SUMMARY OF REMEDIAL INVESTIGATION DATA
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT NO. 2
FREEPORT, NEW YORK

MARCH & NOVEMBER 2009 INDOOR AIR SAMPLING	Contaminants of Concern	Number of Samples	Number of Detections	Concentration Range Detected (µg/m3)	Applicable New York SCG (µg/m3)	Frequency of SCG Exceedence
Volatile Organic Compounds (VOCs)	Acetone	4	2	ND - 100	NA	NA
	Benzene	4	3	ND - 3.5	NA	NA
	Carbon Tetrachloride	4	3	ND - 82	NA	NA
	Chlorobenzene	4	0	ND	NA	NA
	Chloroethane	4	0	ND	NA	NA
	1,1-Dichloroethane	4	0	ND	NA	NA
	1,2-Dichloroethane	4	0	ND	NA	NA
	1,1-Dichloroethene	4	0	ND	NA	NA
	cis-1,2-Dichloroethene	4	0	ND	NA	NA
	trans-1,2-Dichloroethene	4	0	ND	NA	NA
	Ethylbenzene	4	1	ND - 4.3	NA	NA
	Freon 113	4	0	ND	NA	NA
	Freon 114	4	0	ND	NA	NA
	n-Heptane	4	0	ND	NA	NA
	n-Hexane	4	0	ND	NA	NA
	Methylene Chloride	4	2	ND - 73	NA	NA
	Methl Ethyl Ketone	4	0	ND	NA	NA
	Pentane	4	2	ND - 3.8	NA	NA
	Tetrachloroethene	4	1	ND- 2.8	NA	NA
	Toluene	4	1	ND - 4.1	NA	NA
	1,1,1-Trichloroethane	4	0	ND	NA	NA
	Trichloroethene	4	1	ND - 0.33	NA	NA
	Vinyl Chloride	4	0	ND	NA	NA
	m,p-Xylene	4	1	ND - 9.6	NA	NA
	o-Xylene	4	1	ND - 3.8	NA	NA
	Xylene (total)	4	1	ND - 13	NA	NA

NOTES:

(µg/l) : Micrograms per liter
(µg/g OC) : Micrograms per gram Organic Carbon
(µg/m3) : Micrograms per cubic meter
SCG : Standards, criteria and guidance values
ND : Not detected
NA : Not applicable - no SCG published

FIGURES



NEW YORK

QUADRANGLE LOCATION

0 2000 4000

SCALE IN FEET

N

REFERENCE:
U.S.G.S. 7.5 MINUTE QUADRANGLE:
FREEPORT, N.Y., 1994

FORMER COLUMBIA CEMENT COMPANY, INC.

159 HANSE AVENUE
FREEPORT, NEW YORK

SITE LOCATION MAP

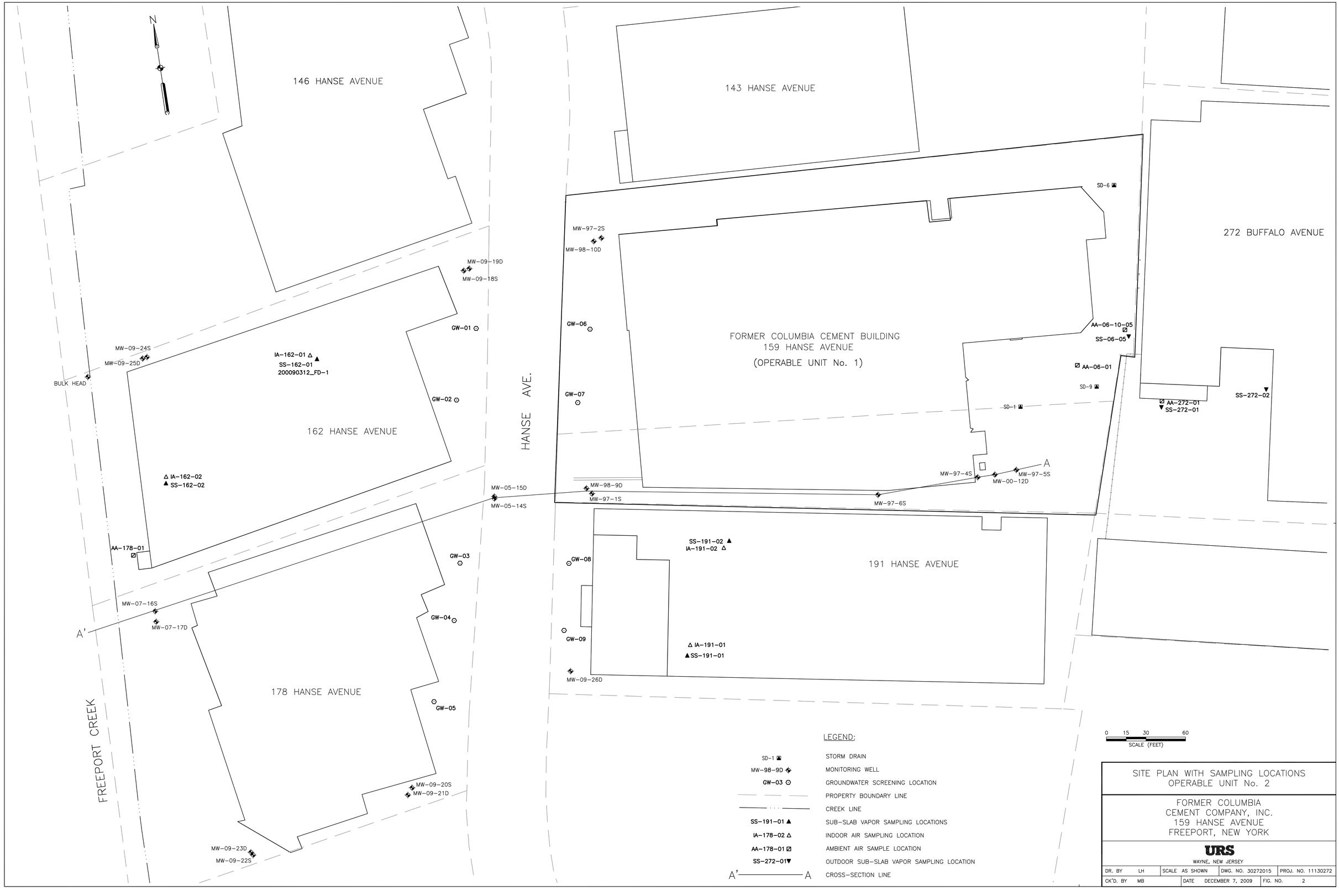
URS
12 COMMERCE DRIVE
CRANFORD, NJ, 07016
PHONE: (908) 272-8300
FAX: (908) 272-3940

DATE: 11/08/03

JOB: 18564-060-175

FIGURE 1

S:\18564\060\PLOT\060-001.dwg 04/05/2004 11:31:12 AM EDT



LEGEND:

SD-1	STORM DRAIN
MW-98-9D	MONITORING WELL
GW-03	GROUNDWATER SCREENING LOCATION
	PROPERTY BOUNDARY LINE
	CREEK LINE
SS-191-01 ▲	SUB-SLAB VAPOR SAMPLING LOCATIONS
IA-178-02 △	INDOOR AIR SAMPLING LOCATION
AA-178-01 ⊠	AMBIENT AIR SAMPLE LOCATION
SS-272-01▼	OUTDOOR SUB-SLAB VAPOR SAMPLING LOCATION
A' — A	CROSS-SECTION LINE

0 15 30 60
SCALE (FEET)

SITE PLAN WITH SAMPLING LOCATIONS OPERABLE UNIT No. 2

FORMER COLUMBIA
CEMENT COMPANY, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY LH	SCALE AS SHOWN	DWG. NO. 30272015	PROJ. NO. 11130272
CK'D. BY MB	DATE DECEMBER 7, 2009	FIG. NO. 2	

K:\Cad\Columbia Cement\11130272(Columbia Cement)\UNIT No2(2008)\30272015.dwg, 12/18/2009 5:44:14 PM

A'

A

MW-07-17D
MW-07-16S

MW-05-15D
MW-05-14S

MW-98-9D
MW-97-1S

MW-97-6S

MW-97-4S
MW-00-12D
MW-97-5S

FREEPORT CREEK

10
0
-10
-20
-30
-40
-50
-60
-70

(DEPTH FT.)

FILL

TIDAL MARSH

GRAVELLY SAND

GRAY CLAY AND SILT

GRAY SAND

MW-07-17D

LEGEND:

LOCATION OF MONITORING WELL OR SOIL BORING

SCREENED INTERVAL

CONTACT, DASHED WHERE INFERRED

FILL

TIDAL MARSH

GRAVELLY SAND

GRAY CLAY AND SILT

GRAY SAND

0 25 50 100
HORIZ. SCALE (FEET)

0 5 10 20
VERT. SCALE (FEET)

STRATIGRAPHIC CROSS-SECTION A-A'
OPERABLE UNIT No. 2
FORMER COLUMBIA CEMENT COMPANY, INC.
159 HANSE AVENUE FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY	KM	SCALE	AS SHOWN	DWG. NO. 30277001-Fig.3	PROJ. NO. 11130277
CK'D. BY	MB	DATE	DECEMBER 14, 2009	FIG. NO.	3

K:\Cadd\Columbia Cement\11130277(Columbia Cement)\3027701-Fig.3.dwg, Layout1, 2/18/2011 11:08:19 AM

GW-01 DEPTH (ft)	GW-01A 10 - 14	GW-01B 15 - 19	GW-01C 20 - 24	GW-01D 25 - 29	GW-01E 30 - 34
Chloroethane	**56**	**54**	**16**	3	3
Chlorobenzene	3	**6**	**7**	5	5

GW-02 DEPTH (ft)	GW-02A 10 - 14	GW-02B 15 - 19	GW-02C 20 - 24	GW-02D 25 - 29	GW-02E 30 - 34
Chloroethane	5	**50**	**300**	**360**	**240**
Chlorobenzene	1	ND	4	4	1

MW-05-15D	Apr-05	Jun-06	Sept-07	Oct-07
Chloroethane	**120**	**200**	**190**	**390**
Chlorobenzene	3 J	2.4	ND	ND

MW-05-14S	Apr-05	Jun-06	Sept-07	Oct-07
Chloroethane	**13**	1	ND	ND
Chlorobenzene	**24**	**7.7**	**9.2**	**11**

GW-03 DEPTH (ft)	GW-03A 10 - 14	GW-03B 15 - 19	GW-03C 20 - 24	GW-03D 25 - 29	GW-03E 25 - 29
Chloroethane	**75**	**310**	**290**	**120**	**72**
Chlorobenzene	**7**	**11**	**11**	**11**	5

GW-04 DEPTH (ft)	GW-04A 10 - 14	GW-04B 15 - 19	GW-04C 20 - 24	GW-04D 25 - 29	GW-04E 25 - 29
Chloroethane	2	4	**80**	**150**	**160**
Chlorobenzene	5	**9**	**8**	**7**	5

GW-05 DEPTH (ft)	GW-05A 10 - 14	GW-05B 15 - 19	GW-05C 20 - 24	GW-05D 25 - 29	GW-05E 25 - 29
Chloroethane	ND	ND	ND	1	**15**
Chlorobenzene	**10**	3	2	**22**	**63**

MW-07-16S	Sept-07	Oct-07
Chloroethane	**91**	**86**
Chlorobenzene	**5.8**	**9.3**

MW-07-17D	Sept-07	Oct-07
Chloroethane	ND	1
Chlorobenzene	ND	ND

MW-97-2S	Jun-97	Jan-99	Apr-00	May-03	Jun-04	Jun-06	Oct-07
Chloroethane	3.6	ND	ND	**7**	ND	ND	ND
Chlorobenzene	**18**	**20**	**15**	**12**	**16**	**16**	**27**

MW-98-10D	Jan-99	Apr-00	May-03	Jun-04	Jun-06	Oct-07
Chloroethane	ND	ND	**11**	ND	ND	ND
Chlorobenzene	ND	**6**	**6**	**7**	**7.3**	**6.8**

GW-06 DEPTH (ft)	GW-06A 10 - 14	GW-06B 15 - 19	GW-06C 20 - 24	GW-06D 25 - 29	GW-06E 30 - 34
Chloroethane	2	ND	**23**	4	2
Chlorobenzene	**7**	**28**	4	**6**	3

GW-07 DEPTH (ft)	GW-07A 10 - 14	GW-07B 15 - 19	GW-07C 20 - 24	GW-07D 25 - 29	GW-07E 30 - 34
Chloroethane	**8**	**30**	**760**	**1500**	**1400**
Chlorobenzene	ND	3	5	5	4

MW-98-9D	Jan-99	Apr-00	May-03	Jun-04	Apr-05	Jun-06	Sept-07	Oct-07	Aug-08	Sept-08	Nov-08
Chloroethane	**38**	**290**	**810**	**510**	**910**	**730**	**670**	**31**	**620**	**360**	**880**
Chlorobenzene	ND	**5**	ND	**7**	**9**	**12**	ND	ND	**7.5**	**5.3**	**8**

MW-97-1S	Jun-97	Jan-99	Apr-00	May-03	Jun-04	Apr-05	Jun-06	Sept-07	Oct-07	Aug-08	Sept-08	Nov-08
Chloroethane	**100**	**120**	**320**	**220**	**430**	**170**	**120**	**100**	**120**	**93**	**55**	**56**
Chlorobenzene	**6.9**	ND	**11**	ND	4	3	2.5	ND	**5.2**	2.9	2.6	3

GW-08 DEPTH (ft)	GW-08A 10 - 14	GW-08B 15 - 19	GW-08C 20 - 24	GW-08D 25 - 29	GW-08E 30 - 34
Chloroethane	ND	ND	ND	**39**	**150**
Chlorobenzene	ND	ND	**8**	**6**	**9**

GW-09 DEPTH (ft)	GW-09A 10 - 14	GW-09B 15 - 19	GW-09C 20 - 24	GW-09D 25 - 29	GW-09E 30 - 34
Chloroethane	ND	ND	ND	**43**	**120**
Chlorobenzene	ND	**15**	**13**	**7**	**6**

LEGEND:

- MW-98-9D ◆ EXISTING MONITORING WELL
- GW-01 ○ GROUNDWATER SCREENING LOCATION
- PROPERTY BOUNDARY LINE
- CREEK LINE
- B — B' CROSS SECTION LINE
- ND NOT DETECTED
- NA NOT ANALYZED

NOTE:

1. ALL RESULTS IN µg/L. BOLD INDICATES RESULT EXCEEDS NYSDEC GROUNDWATER STANDARD.

0 15 30 60
SCALE (FEET)

GROUNDWATER SCREENING SAMPLING LOCATIONS AND RESULTS OPERABLE UNIT No. 2

FORMER COLUMBIA CEMENT COMPANY, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY ET	SCALE AS SHOWN	DWG. NO. 3027702-Fig.4	PROJ. NO. 11130277
CK'D. BY MB	DATE FEBRUARY 18, 2011	FIG. NO. 4	

K:\Cadd\Columbia Cement\11130277\(Columbia Cement)\3027702-Fig.4.dwg, 36X24, 2/18/2011 11:04:43 AM

B

B'

GW–09 GW–08 MW–97–15 MW–98–9D GW–07 GW–06 MW–98–10D MW–97–2S

APPROXIMATE LOCATION OF STORM DRAIN LINE

(DEPTH FT.)

0
5
10
15
20
25
30
35
40

GW–09	GW–08	MW–97–15	MW–98–9D	GW–07	GW–06	MW–98–10D	MW–97–2S
ND	ND			8	2		
ND	ND			30	ND		ND
ND	ND	56		760	23		
43	39			1500	4		
120	150	880		1400	2	ND	

GRAY CLAY

LEGEND:

MONITORING WELL SCREEN INTERVAL.

GROUNDWATER SCREENING SAMPLE INTERVAL.

0 3 6 12
VERT. SCALE (FEET)

0 15 30 60
HORIZ. SCALE (FEET)

DISTRIBUTION OF CHLOROETHANE ALONG
CROSS–SECTION A–A'
OPERABLE UNIT No. 2
FORMER COLUMBIA CEMENT COMPANY, INC.
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY	KM	SCALE	AS SHOWN	DWG. NO. 3027703–Fig.5	PROJ. NO. 11130277
CK'D. BY	MB	DATE	FEBRUARY 17, 2011	FIG. NO.	5

K:\Cadd\Columbia Cement\11130277(Columbia Cement)\3027703-Fig.5.dwg, Layout1, 2/18/2011 11:09:15 AM

C

C'

GW–05 GW–04 GW–03 MW–05–14S MW–05–15D GW–02 GW–01

(DEPTH FT.)

0
5
10
15
20
25
30
35
40

GW–05	GW–04	GW–03	MW–05–14S	MW–05–15D	GW–02	GW–01
ND	2	75			5	56
ND	4	310			50	54
ND	80	290	<1		300	16
1	150	120			360	3
15	160	72		390	240	3

GRAY CLAY

LEGEND:

MONITORING WELL SCREEN INTERVAL.

GROUNDWATER SCREENING SAMPLE INTERVAL.

0 3 6 12
VERT. SCALE (FEET)

0 15 30 60
HORIZ. SCALE (FEET)

DISTRIBUTION OF CHLOROETHANE ALONG
CROSS–SECTION B–B'
OPERABLE UNIT No. 2
FORMER COLUMBIA CEMENT COMPANY, INC.
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY KM	SCALE AS SHOWN	DWG. NO. 3027704–Fig.6	PROJ. NO. 11130277	
CK'D. BY MB	DATE FEBRUARY 17, 2011	FIG. NO. 6		

K:\Cadd\Columbia Cement\11130277(Columbia Cement)\3027704-Fig.6.dwg, Layout1, 2/18/2011 11:10:03 AM

N

146 HANSE AVENUE

143 HANSE AVENUE

162 HANSE AVENUE

178 HANSE AVENUE

191 HANSE AVENUE

HANSE AVE.

FREEPORT CREEK

FORMER
COLUMBIA CEMENT BUILDING
159 HANSE AVENUE

APPROX. 200' SOUTH

MW-09-18S
MW-09-19D
MW-09-24S
MW-09-25D
MW-05-15D
MW-05-14S
MW-07-16S
MW-07-17D
MW-09-20S
MW-09-21D
MW-09-22S
MW-09-23D
MW-97-2S
MW-98-10D
MW-98-9D
MW-97-1S
MW-09-26D
MW-03-13S

MW-09-18S	Sept-09	Oct-10	Oct-11	Jan-12
Chlorobenzene	ND	ND	1.6	ND
Chloroethane	**77**	**37**	**79 R**	**130**

MW-09-24S	Sept-09	Oct-10	Oct-11	Jan-12
1,4-Dichlorobenzene	NA	1.8	1.7	1.8
Chlorobenzene	4.5	3.3	ND	ND
Chloroethane	**11**	ND	**13 R**	**14**
MTBE	NA	0.79	ND	ND

MW-09-19D	Sept-09	Oct-10	Oct-11	Jan-12
1,1-Dichloroethane	4.1	ND	**130**	ND
Chlorobenzene	**7**	**5.2**	ND	ND
Chloroethane	**170**	**58**	**340 R**	ND

MW-09-25D	Sept-09	Oct-10	Oct-11	Jan-12
1,4-Dichlorobenzene	NA	1.8	1.9	1.6
Chlorobenzene	**6.3**	**5.5**	ND	ND
Chloroethane	**24**	**6.5**	**16 R**	**19**

MW-05-15D	Apr-05	Jun-06	Sept-07	Oct-07	Sept-09	Oct-10	Oct-11	Jan-12
1,1-DCA	ND	ND	ND	ND	ND	ND	**140**	ND
Chloroethane	**120**	**200**	**190**	**390**	**490**	**140**	**430 R**	**100**
Chlorobenzene	3.0	2.4	ND	ND	**7**	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	**13**	ND	ND	ND
Xylene	ND	0.5	ND	ND	NA	ND	ND	ND

MW-05-14S	Apr-05	Jun-06	Sept-07	Oct-07	Sept-09	Oct-10	Oct-11	Jan-12
Chloroethane	**13**	1.0	ND	ND	ND	ND	4.7 R	ND
Chlorobenzene	**24**	**7.7**	**9.2**	**11**	**8.4**	**6.2**	ND	ND
Carbon Disulfide	ND	0.4	ND	ND	NA	ND	ND	ND
Benzene	ND	0.4	ND	ND	NA	ND	ND	ND

MW-07-16S	Sept-07	Oct-07	Sept-09	Oct-10	Oct-11
Chloroethane	**91**	**86**	**52**	**13**	**42**
Chlorobenzene	**5.8**	**9.3**	**6.8**	**6.5**	**7.6**

MW-07-17D	Sept-07	Oct-07	Sept-09	Oct-10	Oct-11
Chloroethane	ND	1	**5.1**	**31**	**55**
Chlorobenzene	ND	ND	**8.9**	**9.1**	**14**
MTBE	2.7	2.6	NA	ND	ND

MW-09-20S	Sept-09	Oct-10	Oct-11
1,4-Dichlorobenzene	NA	ND	1.0
Chlorobenzene	ND	ND	1.7
Chloroethane	ND	ND	ND

MW-09-21D	Sept-09	Oct-10	Oct-11
1,4-Dichlorobenzene	NA	ND	1.5
Chlorobenzene	5	ND	4.4
Chloroethane	**9.8**	ND	**29**

MW-09-22S	Sept-09	Oct-10	Oct-11	Jan-12
1,4-Dichlorobenzene	NA	ND	2.6	ND
Chlorobenzene	**5.9**	2.9	ND	ND
Chloroethane	ND	ND	ND R	ND

MW-09-23D	Sept-09	Oct-10	Oct-11	Jan-12
1,4-Dichlorobenzene	NA	2.9	ND	2.4
Chlorobenzene	**13**	**14**	ND	ND
Chloroethane	ND	3.1	ND R	ND

MW-97-2S	Jun-97	Jan-99	Apr-00	May-03	Jun-04	Jun-06	Oct-07	Sept-09	Sept-10	Oct-11
Chloroethane	3.6	ND	ND	**7**	ND	ND	ND	ND	ND	ND
Acetone	9.4	ND	8	ND	ND	7.3	ND	NA	ND	ND
Carbon Disulfide	26	ND	ND	ND	ND	ND	ND	NA	ND	ND
Chlorobenzene	**18**	**20**	**15**	**12**	**16**	**16**	**27**	**15**	**16**	**13**
Isopropylbenzene	2.3	NA	NA	NA	NA	NA	2.1	NA	2.0	3.4
1,4-Dichlorobenzene	3.2	ND	NA	NA	NA	NA	ND	NA	2.5	2.6
Ethylbenzene	ND	ND	1	ND	ND	ND	ND	NA	ND	ND
Xylenes	ND	ND	2	ND	ND	0.4	ND	NA	ND	ND
Benzene	ND	ND	1	ND	ND	ND	ND	NA	ND	ND
Methylene Chloride	ND	ND	15	ND	ND	ND	ND	NA	ND	ND

MW-98-10D	Jan-99	Apr-00	May-03	Jun-04	Jun-06	Oct-07	Sept-09	Sept-10	Oct-11
Chloroethane	ND	ND	**11**	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	**23**	ND	ND	ND	ND	NA	ND	ND
Chlorobenzene	ND	**6**	**6**	**7**	**7.3**	**6.8**	5	3.5	ND

MW-98-9D	Jan-99	Apr-00	May-03	Jun-04	Apr-05	Jun-06	Sept-07	Oct-07	Sept-09	Oct-09	Nov-09	Feb-10	Mar-10	Sept-10	Dec-10	Jan-11	Feb-11	Mar-11	Oct-11	Nov-11	Dec-11	Jan-12
Chloroethane	**38**	**290**	**810**	**510**	**910**	**730**	**670**	**31**	**3000**	**330**	**880**	**2900**	**970**	**790**	**470**	**250**	**350**	**300**	**41**	**47**	**62**	**59**
Chlorobenzene	ND	**5.0**	ND	**7.0**	**9.0**	**12**	ND	ND	**8.5**	4.2	**6.0**	**7.0**	**6.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**370**	**160**	**140**	7.8	**98**	**220**	**130**	**95**

MW-97-1S	Jun-97	Jan-99	Apr-00	May-03	Jun-04	Apr-05	Jun-06	Sept-07	Oct-07	Sept-09	Oct-09	Nov-09	Feb-10	Mar-10	Sept-10	Dec-10	Jan-11	Feb-11	Mar-11	Oct-11	Nov-11A	Nov-11B	Dec-11	Jan-12
Chloroethane	**100**	**120**	**320**	**220**	**430**	**170**	**120**	**100**	**120**	**87**	**54**	**68**	**250**	**98**	**73**	**260**	**10**	ND	ND	**360**	**51**	**38**	**17**	**20**
Chlorobenzene	**6.9**	ND	**11**	ND	4	3	2.5	ND	**5.2**	2.9	3.4	3.5	3.3	3.1	3.5	2.2	ND	ND	ND	ND	3.5	ND	ND	ND
Methylene Chloride	ND	ND	**20**	ND	ND	ND	ND	ND	**14**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	7	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	ND	ND	ND

MW-09-26D	Sept-09	Oct-10	Oct-11
1,4-Dichlorobenzene	NA	2.1	2.4
Chlorobenzene	**13**	**14**	**13**
Chloroethane	**36**	4.2	**35**

MW-03-13S	May-03	Jun-04	Jun-06	Sept-09	Oct-11
Carbon Disulfide	1	ND	ND	ND	ND
1,1-Dichoroethane	ND	ND	ND	ND	**5.1**
MTBE	ND	ND	ND	ND	0.71

LEGEND:

MW-98-9D	MONITORING WELL
	PROPERTY BOUNDARY LINE
	CREEK LINE
ND	NOT DETECTED
NA	NOT ANALYZED
R	RESULT REJECTED DURING QA/QC REVIEW

NOTE:

1. ALL RESULTS IN ug/L. BOLD INDICATES RESULT EXCEEDS NYSDEC GROUNDWATER STANDARD.

0 15 30 60
SCALE (FEET)

GROUNDWATER SAMPLING RESULTS
OPERABLE UNIT No. 2

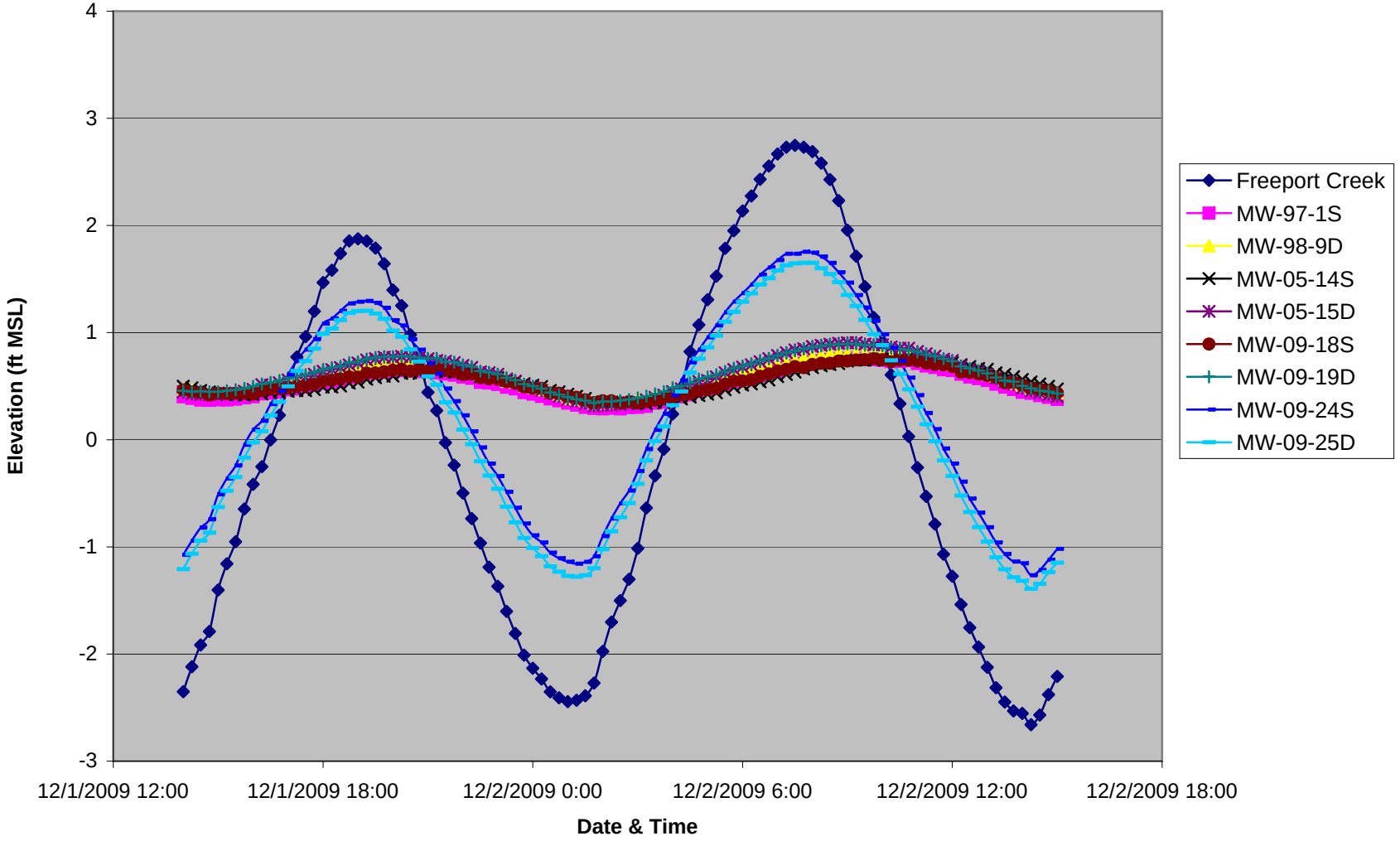
FORMER COLUMBIA
CEMENT COMPANY, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

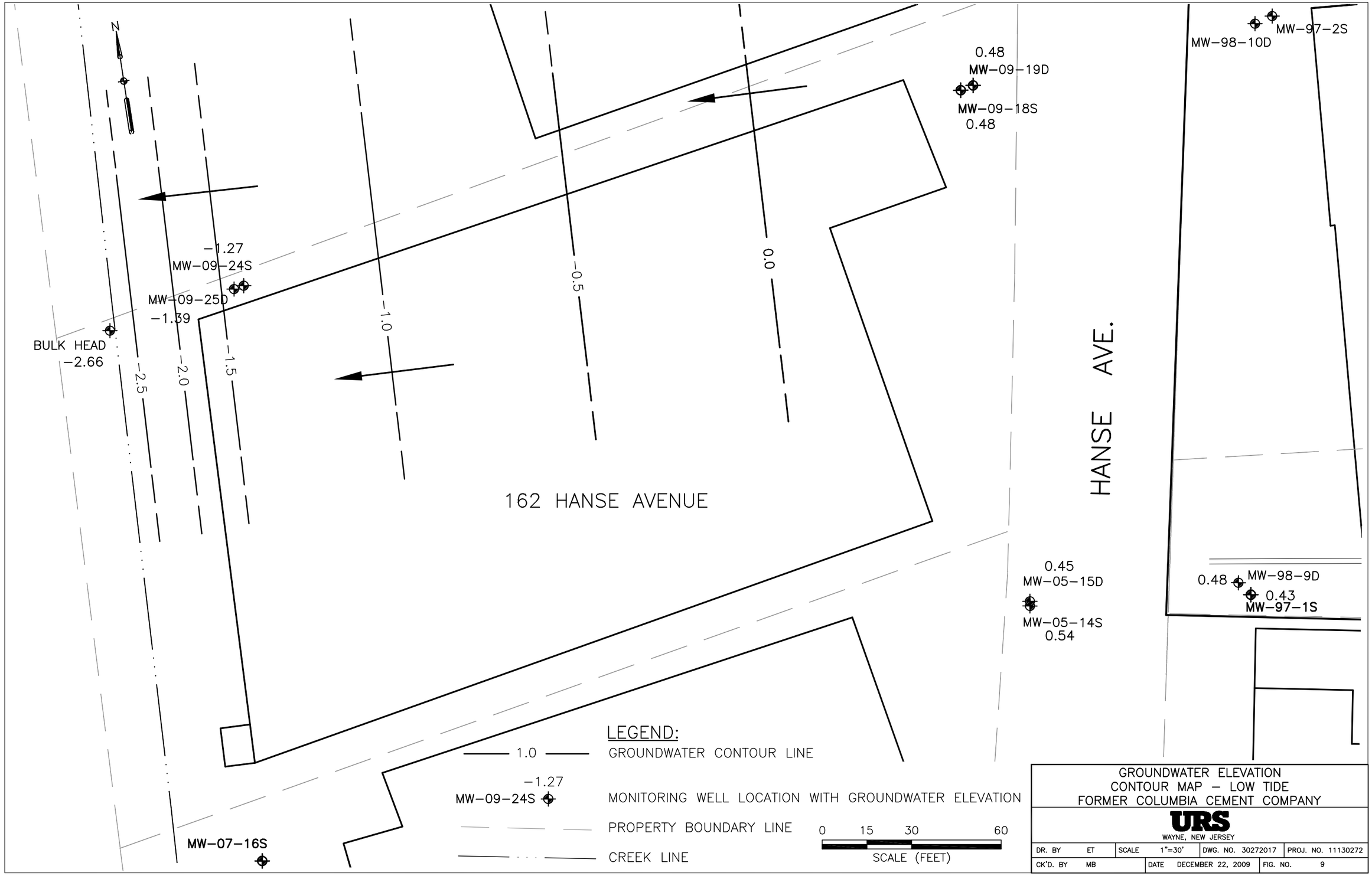
URS
WAYNE, NEW JERSEY

DR. BY KM	SCALE AS SHOWN	DWG. NO. 3028901-Fig.7	PROJ. NO. 11130289
CK'D. BY MB	DATE FEBRUARY 22, 2012	FIG. NO. 7	

K:\Cad\Columbia Cement\11130289\COLUMBIA CEMENT\3028901-Fig 7.dwg, 30X24, 8/16/2012 7:38:44 AM

FIGURE 8
25-HOUR TIDAL MONITORING
FORMER COLUMBIA CEMENT COMPANY FACILITY
OPERABLE UNIT No. 2



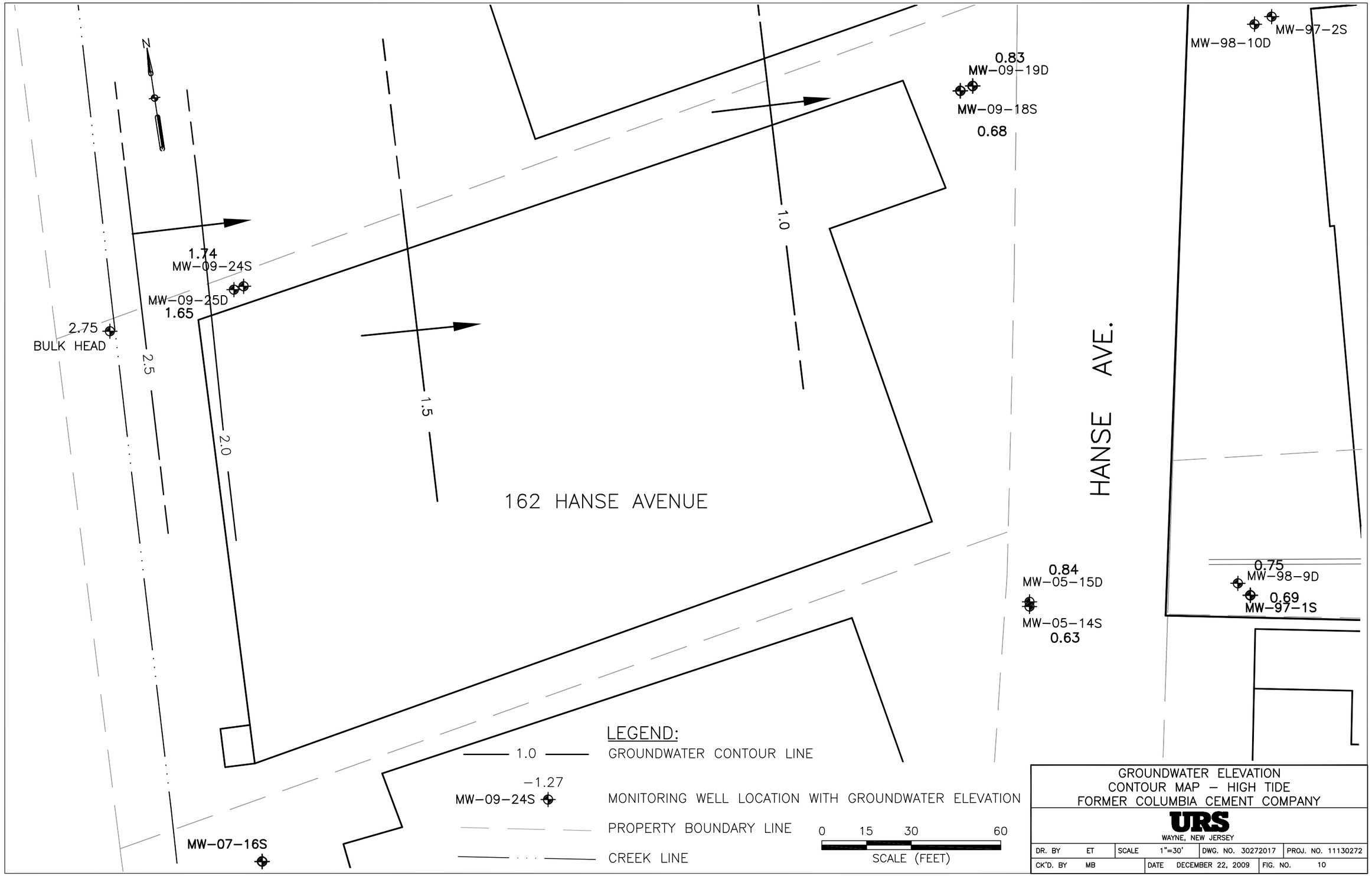


GROUNDWATER ELEVATION
CONTOUR MAP – LOW TIDE
FORMER COLUMBIA CEMENT COMPANY

URS
WAYNE, NEW JERSEY

DR. BY	ET	SCALE	1"=30'	DWG. NO. 30272017	PROJ. NO. 11130272
CK'D. BY	MB	DATE	DECEMBER 22, 2009	FIG. NO.	9

K:\Cadd\Columbia Cement\11130272(Columbia Cement)\UNIT No2(2008)\30272017.dwg, 12/23/2009 1:21:01 PM



GROUNDWATER ELEVATION
CONTOUR MAP – HIGH TIDE
FORMER COLUMBIA CEMENT COMPANY

URS
WAYNE, NEW JERSEY

DR. BY	ET	SCALE	1"=30'	DWG. NO. 30272017	PROJ. NO. 11130272
CK'D. BY	MB	DATE	DECEMBER 22, 2009	FIG. NO.	10

K:\Cadd\Columbia Cement\11130272(Columbia Cement)\UNIT No2(2008)\30272017(cont).dwg, 12/23/2009 1:23:00 PM

K:\Cadd\Columbia Cement\11130272(Columbia Cement)\UNIT No2(2008)\30272017(cont2).dwg, 12/23/2009 1:24:03 PM

N

0.26
MW-09-24S

MW-09-25D
0.14

-0.11
BULK HEAD

MW-07-16S

0.62
MW-09-19D

MW-09-18S
0.55

MW-98-10D

MW-97-2S

0.61
MW-05-15D

MW-05-14S
0.54

0.58
MW-98-9D

0.52
MW-97-1S

-0.1
0.0
0.1
0.2
0.3
0.4
0.5

162 HANSE AVENUE

HANSE AVE.

LEGEND:

1.0 — GROUNDWATER CONTOUR LINE

-1.27
MW-09-24S — MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION

PROPERTY BOUNDARY LINE

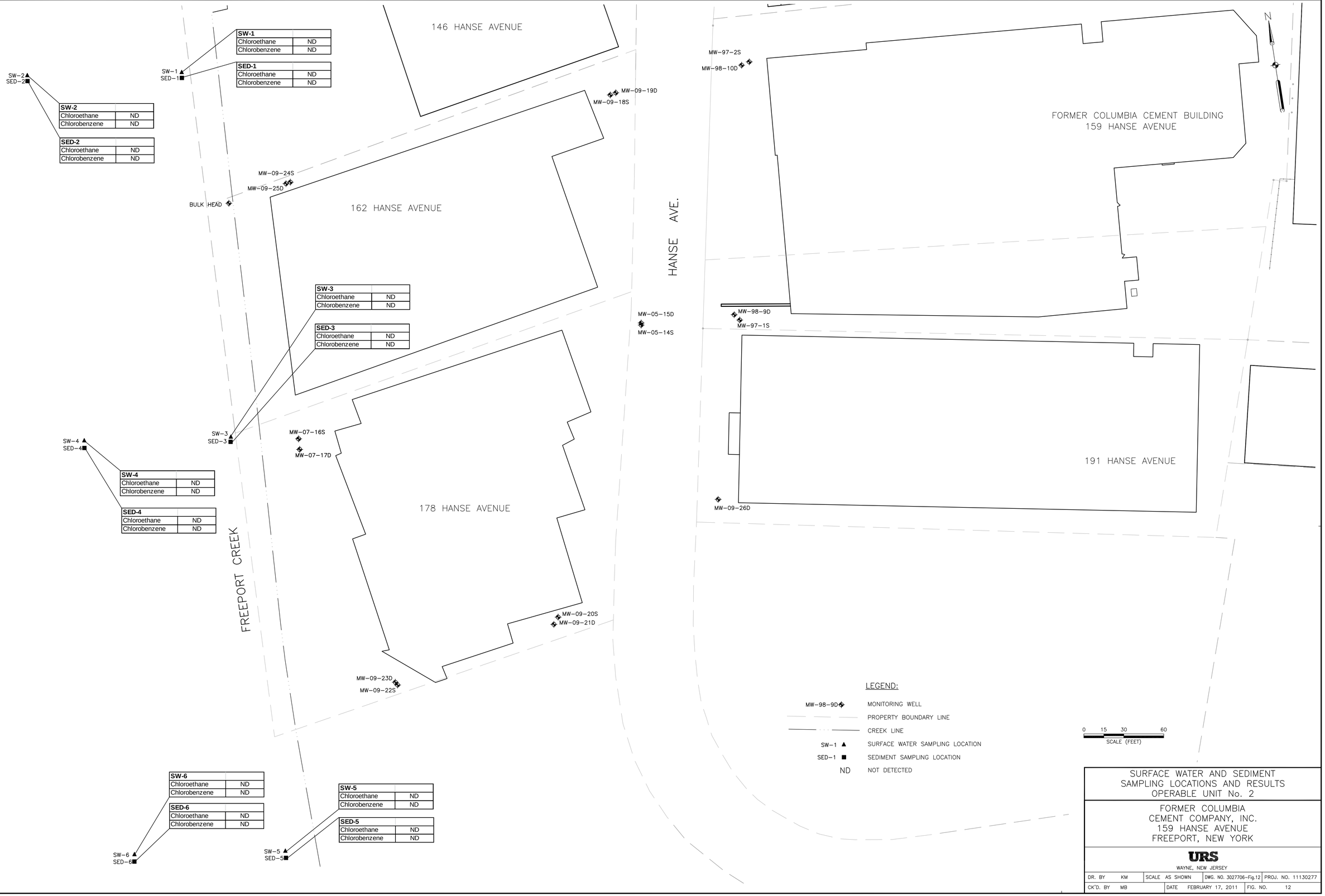
CREEK LINE

0 15 30 60
SCALE (FEET)

GROUNDWATER ELEVATION
CONTOUR MAP – MEAN TIDE
FORMER COLUMBIA CEMENT COMPANY

URS
WAYNE, NEW JERSEY

DR. BY	EZ	SCALE	1"=30'	DWG. NO. 30272017	PROJ. NO. 11130272
CK'D. BY	MB	DATE	DECEMBER 22, 2009	FIG. NO.	11



SURFACE WATER AND SEDIMENT
SAMPLING LOCATIONS AND RESULTS
OPERABLE UNIT No. 2

FORMER COLUMBIA
CEMENT COMPANY, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY KM	SCALE AS SHOWN	DWG. NO. 3027706-Fig.12	PROJ. NO. 11130277
CK'D. BY MB	DATE FEBRUARY 17, 2011	FIG. NO. 12	

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N

146 HANSE AVENUE

SAMPLE ID	SS-162-01		IA-162-01		20090312-FD-1	
SAMPLE TYPE	SUB-SLAB		INDOOR AIR		DUPLICATE	
SAMPLE DATE	3/12/2009		3/12/2009		3/12/2009	
UNITS	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv
Acetone	26	11	100	44	93	39
Freon 114	5.3	0.76	2.1 U	0.3 U	2.4 U	0.34 U
Methylene Chloride	1.7 U	0.5 U	73	21	69	20
Methl Ethyl Ketone	2.6	0.87	2.2 U	0.75 U	2.5 U	0.85 U
1,1,1-Trichloroethane	1.1 U	0.2 U	1.6 U	0.3 U	1.9 U	0.34 U
Chloroethane	1.3 U	0.5 U	2 U	0.75 U	2.2 U	0.85 U
Chlorobenzene	0.92 U	0.2 U	1.4 U	0.3 U	1.6 U	0.34 U
Benzene	0.64 U	0.2 U	3.5	1.1	3.2	1
Ethylbenzene	0.87 U	0.2 U	4.3	1	4	0.92
Toluene	1.3	0.35	4.1	1.1	4.1	1.1
m,p-Xylene	2.2 U	0.5 U	9.6	2.2	8.3	1.9
o-Xylene	0.87 U	0.2 U	3.8	0.88	3.2	0.74
Xylene (total)	0.87 U	0.2 U	13	3.1	12	2.7
Tetrachloroethene	16	2.4	2.8	0.41	2.8	0.42
Trichloroethene	1.1 U	0.2 U	0.21 U	0.04 U	0.21 U	0.04 U
Carbon Tetrachloride	NR	NR	0.63	0.1	0.63	0.1

SAMPLE ID	SS-162-02		IA-162-02	
SAMPLE TYPE	SUB-SLAB		INDOOR AIR	
SAMPLE DATE	3/12/2009		3/12/2009	
UNITS	µg/m3	ppbv	µg/m3	ppbv
Acetone	190	81	50	21
Methylene Chloride	4.5 U	1.3 U	24	6.9
Methl Ethyl Ketone	7.4	2.5	1.5 U	0.5 U
Pentane	4.1	1.4	1.5 U	0.5 U
1,1,1-Trichloroethane	6	1.1	1.1 U	0.2 U
1,1-Dichloroethane	3.9	0.96	0.81 U	0.2 U
Chloroethane	3.4 U	1.3 U	1.3 U	0.5 U
Chlorobenzene	2.3 U	0.5 U	0.92 U	0.2 U
Benzene	1.6 U	0.5 U	0.64 U	0.2 U
Toluene	2.2	0.59	0.75 U	0.2 U
Tetrachloroethene	17	2.5	1.4 U	0.2 U
Trichloroethene	2.7 U	0.5 U	0.33	0.06
Vinyl Chloride	1.4	0.55	0.2 U	0.08 U
Carbon Tetrachloride	NR	NR	0.25 U	0.04 U

IA–162–01
SS–162–01
200090312_FD–1

IA–162–02
SS–162–02

AA–178–01

SAMPLE ID	AA-162-01	
SAMPLE TYPE	AMBIENT AIR	
SAMPLE DATE	3/12/2009	
UNITS	µg/m3	ppbv
1,1,1-Trichloroethane	1.1 U	0.2 U
Chloroethane	1.3 U	0.5 U
Chlorobenzene	0.92 U	0.2 U
Benzene	0.64 U	0.2 U
Toluene	1.1	0.29
Tetrachloroethene	1.4 U	0.2 U
Trichloroethene	0.21 U	0.04 U
Carbon Tetrachloride	0.63	0.1

GW–01
GW–02
GW–03
GW–04
GW–05
GW–06
GW–07
GW–08
GW–09

MW–07–16S
MW–07–17D
MW–05–15D
MW–05–14S
MW–97–2S
MW–98–10D
MW–98–9D
MW–97–1S

162 HANSE AVENUE

178 HANSE AVENUE

FREEPORT CREEK

HANSE AVE.

143 HANSE AVENUE

FORMER COLUMBIA CEMENT BUILDING
159 HANSE AVENUE

272 BUFFALO AVENUE

SAMPLE ID	SS-272-02
SAMPLE TYPE	SUB-SLAB
SAMPLE DATE	11/12/09
UNITS	ug/m3	ppbv
---	---	---
Acetone	120	49
1,1-Dichloroethane	8.1	2
cis-1,2-Dichloroethene	7.1	1.8
trans-1,2-Dichloroethene	1.5	0.37
Heptane	1.4	0.34
Methyl Ethyl Ketone	7.4	2.5
Pentane	4.4	1.5
Tetrachloroethene	95	15
Toluene	6	1.6
Trichloroethene	86	16

SAMPLE ID	AA-272-01
SAMPLE TYPE	AMBIENT AIR
SAMPLE DATE	11/12/09
UNITS	ug/m3	ppbv
---	---	---
Acetone	12	5
Methyl Ethyl Ketone	8.8	3
Pentane	1.7	0.59
Toluene	2	0.53

AA–272–01
SS–272–01

SS–272–02

SAMPLE ID	SS-272-01
SAMPLE TYPE	SUB-SLAB
SAMPLE DATE	11/12/09
UNITS	ug/m3	ppbv
---	---	---
Acetone	16	7.7
1,1-Dichloroethane	4.5	1.1
Freon 114	2.1	0.3
Hexane	7	2
Tetrachloroethene	120	17
Toluene	2.6	0.69
1,1,1-Trichloroethane	100	19
Trichloroethene	5.9	1.1

SS–191–02
IA–191–02

IA–191–01
SS–191–01

191 HANSE AVENUE

SAMPLE ID	SS-191-02		IA-191-02	
SAMPLE TYPE	SUB-SLAB		INDOOR AIR	
SAMPLE DATE	3/12/2009		3/12/2009	
UNITS	µg/m3	ppbv	µg/m3	ppbv
Acetone	38	16	12 U	5 U
n-Heptane	49	12	0.82 U	0.2 U
n-Hexane	8.1	2.3	1.8 U	0.5 U
Methylene Chloride	1.9	0.56	1.7 U	0.5 U
Methl Ethyl Ketone	12	3.9	1.5 U	0.5 U
Pentane	68	23	3.8	1.3
1,1,1-Trichloroethane	5	0.91	1.1 U	0.2 U
Chloroethane	1.3 U	0.5 U	1.3 U	0.5 U
Chlorobenzene	0.92 U	0.2 U	0.92 U	0.2 U
Benzene	0.7	0.22	1.1	0.33
Ethylbenzene	2.8	0.65	0.87 U	0.2 U
Toluene	3.1	0.82	1.4	0.38
m,p-Xylene	14	3.2	2.2 U	0.5 U
o-Xylene	4.8	1.1	0.87 U	0.2 U
Xylene (total)	19	4.4	0.87 U	0.2 U
Tetrachloroethene	9.5	1.4	1.4 U	0.2 U
Trichloroethene	1.1 U	0.2 U	0.21 U	0.04 U
Carbon Tetrachloride	NR	NR	0.39	0.062

SAMPLE ID	SS-191-01		IA-191-01	
SAMPLE TYPE	SUB-SLAB		INDOOR AIR	
SAMPLE DATE	3/12/2009		3/12/2009	
UNITS	µg/m3	ppbv	µg/m3	ppbv
Acetone	13	5.4	12 U	5 U
Methl Ethyl Ketone	1.5	0.52	1.5 U	0.5 U
1,1,1-Trichloroethane	1.1 U	0.2 U	1.1 U	0.2 U
Chloroethane	1.3 U	0.5 U	1.3 U	0.5 U
Chlorobenzene	0.92 U	0.2 U	0.92 U	0.2 U
Benzene	0.64 U	0.2 U	0.93	0.29
Toluene	1.4	0.36	1.7	0.46
Tetrachloroethene	9.5	1.4	1.4 U	0.2 U
Trichloroethene	1.1 U	0.2 U	0.21 U	0.04 U
Carbon Tetrachloride	NR	NR	0.82	0.13

LEGEND:

MW–98–9D	EXISTING MONITORING WELL
GW–03	GROUNDWATER SCREENING LOCATION
	PROPERTY BOUNDARY LINE
	CREEK LINE
SS–191–01 ▲	SUB–SLAB VAPOR SAMPLING LOCATIONS
IA–191–01 △	INDOOR AIR SAMPLING LOCATION
IA–178–02 △ AA–178–01 ☑	AMBIENT AIR SAMPLE LOCATION
SS–272–01▼	OUTDOOR SUB–SLAB VAPOR SAMPLING LOCATION
µg/m3	MICROGRAMS PER CUBIC METER
ppbv	PARTS PER BILLION BY VOLUME
U	COMPOUND NOT DETECTED AT STATED DETECTION LIMIT

0 15 30 60
SCALE (FEET)

VAPOR INTRUSION SAMPLING LOCATIONS AND RESULTS OPERABLE UNIT No. 2

FORMER COLUMBIA CEMENT COMPANY, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

URS
WAYNE, NEW JERSEY

DR. BY ET	SCALE AS SHOWN	DWG. NO. 3027707-Fig.13	PROJ. NO. 11130277
CK'D. BY MB	DATE FEBRUARY 18, 2011	FIG. NO. 13	

K:\Cadd\Columbia Cement\11130277(Columbia Cement)\3027707-Fig.13.dwg, 36X24, 2/18/2011 11:06:42 AM

APPENDIX A
BORING LOGS

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By S. Ramrup		Boring No.: GW-01
	Driller: Zebra Env.		
	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 11:00 / Finish Time: 13:05
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/5/2008 / Date: 12/5/2008
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-0.25'"] Asphalt [0.25-3.5'] Dark brown mixed with light tan f-m SAND with FILL (plastic liner) **SP**
				0	2		[3.5'] Presence of wood fragments [3.5-5'] Dark brown f-m SAND with FILL (plastic liner, glass fragments, wire), gravel **SP/GP**
					3		
				0	4		Hand auger to 5'
					5		
	60 / 35		0		6		[5-7.5'] Dark brown medium SAND with gravel, firm (no impact) **SP/GP**
			0		7	▼	
			0		8		[7.5-8.5'] Light tan f-m-c SAND, wet **SW**
			5.6		9		[8.5-10'] Dark brown to light tan CLAY material with glass fragments and rubber material at 10', moist, firm **CL**
			2.3		10		
	60 / 32		0		11		[10-12.5'] Dark brown loose m-c SAND with glass fragments, wet, **SP**
			0.0		12		
			0		13		[12.5-14'] Dark brown FILL mixed with glass fragments
			0		14		[14-15'] Layer of cardboard or paper material Dark brown to light tan silty CLAY **OH**
			15.9		15		
	60 / 60		0		16		[15-15.5'] Layer of coarse SAND with glass mixed **SP** [15.5-17'] Light brown m-c SAND, firm, **SP**
			0		17		[17-18'] Light tannish brown f-m SAND, loose, **SP**
			0		18		[18-19'] Light Tannish brown gravelly SAND, moist, loose **SP/GP**
			0		19		[19-20'] F-m SAND, moist, loose, **SP**
			0		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By J.C.		Boring No.: GW-01
	Driller: Zebra		
	Drilling Method: Geoprobe		Sheet: 2 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: Finish Time
	Water Level:		11:00
	Depth of Screen:		
	Depth of Sand:		Date: 12/5/2008 / Date: 12/5/2008
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 60		0		21		[20-22'] Tannish brown m-c SAND, moist, loose, (no impact) **SP**
			0		22		[22-22.5'] Light tan gravelly SAND, moist, loose, (no impact) **SP/GP**
			0		23		[22.5-25'] Light tan f-m SAND, moist, loose **SP**
			0		24		
			0		25		
	60 / 0				26		Sample [25-30'] Macrocore crushed on both ends. Sample banged out with hammer. Little recovery obtained
					27		
					28		
					29		
					30		
	60 / 26		0		31		[30-32'] Light gray f-m SAND, moist, loose, (no impact) **SP**
			0		32		[32-33'] Light gray gravelly SAND, moist, (no impact) **SP/GP**
			0		33		[33-34'] Light gray f-m SAND, moist, (no impact) **SP**
			0		34		[34-35'] Light gray clayey SAND, firm, compacted, (no impact) **SC**
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By M. Becker		Boring No.: GW-02
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 12:40 / Finish Time: 14:55
	Water Level:		
	Depth of Screen:		Date: 12/4/2009
	Depth of Sand:		Date: 12/4/2008
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-3"] Asphalt [3"-60"] Dark Brown fine SAND, trace silt, trace debris (wood, plastic) FILL **SP**
			0		2		Hand auger to 5'
					3		
			0		4		
					5		
	60 / 34		0		6		[5-10.5'] Brown f-m silty SAND with debris (wood, plastic, cloth), moist, loose **SW**
			0		7	▼	
			0		8		Grading wet
			0		9		
					10		
	60 / 8		0		11		Dark Brown f-m SAND, some silt, wet **SM** Wood chunk stuck in macro-core tip - liner crushed - no recovery
					12		
					13		
					14		
					15		
	60 / 48		0		16		[15-17'] Dark Brown f-m silty SAND, trace coarse sand and fine gravel, some debris (plastic, wood, glass), loose, wet **SM**
			0		17		
			0		18		[17-20'] Dark Brown gravelly SAND, loose, wet **SP**
			0		19		
			0		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-02
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 2 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 12:40 / Finish Time: 14:55
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/4/2009
	Depth of Grout:		Date: 12/4/2008

Surface Conditions: Asphalt

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	
	60 / 46		0		21		[20-23.5'] Dark Brown f-m SAND, trace coarse sand and fine gravel, loose, wet **SW**
			0		22		
			0		23		
			0		24		Debris (glass, paper)
			0		25		
	60 / 53		0		26		[25-27'] Brown fine SAND, trace coarse sand and fine gravel, wet **SP**
			0		27		[27-27.5'] Gray fine SAND, dense, wet **SP**
			0		28		[27.5-30.5'] Gray fine SAND, trace medium sand **SP**
			0		29		
			0		30		
	60 / 56		0		31		[30.5-35'] Grading with some f-c gravel, loose, wet **SW**
			0		32		
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By M. Becker		Boring No.: GW-03
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 7:45 / Finish Time: 9:30
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/6/2009 / Date: 12/6/2009
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-3"] Asphalt
					2		Hand auger to 5'
					3		Dark Brown f-m SAND, trace fine gravel, loose, dry **SP**
					4		
					5		
	60 / 27				6		[5-12.5'] Dark Brown f-c SAND, some fine gravel, debris (glass, wire, wood) moist **SW**
					7	▼	
					8		Grading wet
					9		
					10		PID not functioning at 5-10' interval
	60 / 35		0		11		Same as above, grading clayey, f-c SAND **SW**
			0		12		
			0		13		[12.5-14'] Brown m-c SAND, wet, no debris **SP**
			0		14		[14-16'] Brown m-c SAND with fine gravel, medium dense, wet **SP**
			0		15		
	60 / 50		0		16		[16-16.25'] 3" Brown silty f-m SAND **SM**
			0.4		17		[16.25-18'] Brown m-cs SAND with fine gravel, wet **SP**
			0.1		18		[18-19'] Light Brown gravelly SAND, wet **SP**
			0.9		19		[18-19.5'] 15" Brown fine SAND, medium dense, wet **SP**
			0.4		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-03
	Driller: John Diamond/ Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 7:45 / Finish Time: 9:30
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/6/2009
	Depth of Grout:		Date: 12/6/2009

Sample No. / Depth	Inches Driv. / Recc	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 60		0		21		[20-27.5'] Light Brown f-m SAND, trace fine gravel, medium dense, wet **SP**
			0		22		
			0		23		
			0		24		
			0		25		
	60 / 37		0		26		Same as above **SP**
			0		27		
			0		28		[27.5-30'] Grading to gray m-c SAND with gravel, trace fine sand, medium dense, wet **SP**
			0		29		
			0		30		
	60 / 46		0		31		[30-32'] Gray fine SAND, trace silt, dense, wet **SP**
			0		32		
			0		33		[32-34.75'] Gray-light gray f-m SAND, trace fine gravel, wet **SP**
			0		34		
			0		35		[34.75-35'] 3" silty f-vf SAND, dense, wet **SM**
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By M. Becker		Boring No.: GW-04
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 12:33 / Finish Time: 13:45
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/6/2009 / Date: 12/6/2009
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-3"] Asphalt
			0		2		Hand auger to 5' Dark Brown-Black silty f-m SAND with gravel and debris **SM**
					3		
			0		4		
					5		Glass, rubber, cloth
	60 / 35		0		6		[5-7'] Silty Dark Brown-black f-m SAND with gravel and debris (glass), loose **SM**
			0		7	▼	[7-10'] Brown f-m SAND, trace coarse sand and fine gravel, medium dense, wet **SP**
			0		8		
			0		9		
			0		10		
	60 / 56		0		11		[10-13'] Dark Brown f-cs SAND with debris (glass), occassional 1-3" silty sand layers, loose, wet **SW**
			0		12		
			0		13		[13-14.5'] Brown f-c SAND with fine gravel, medium dense, wet **SP**
			0		14		[14.5-16'] Black silty f-m SAND, with debris, soft, wet **SM**
			0		15		
	60 / 54		0		16		[16-24'] Brown f-cs SAND with fine gravel, medium dense, wet **SP**
			0		17		
			0		18		
			0		19		
			0		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By M. Becker		Boring No.: GW-04
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 2 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 12:33 / Finish Time: 13:45
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/6/2009
	Depth of Grout:		Date: 12/6/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 52		0		21		As above
			0		22		
			0		23		
			0		24		[24-24.5'] 6" Organic CLAY with plant fibers **Pt**
			0		25		[24.5-27'] Light Brown f-m SAND, trace fine gravel, medium dense, wet **SP**
	60 / 30		0		26		
			0		27		Grading light gray
			0		28		[27-29.5'] Light gray gravelly f-c SAND, medium dense, wet **SP**
			0		29		
			0		30		[29.5-32'] Gray f-vf SAND, dense, wet **SP**
	60 / 43		0		31		
			0		32		[32-32.75'] 9" Light Gray m-c gravelly SAND **SP**
			0		33		[32.75-34.5'] Gray fine SAND **SP**
			0		34		
			0		35		[34.5-35'] Dark Gray silty CLAY **OL**
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-05
	Driller: John Diamond/ Zebra		Sheet: 1 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 8:00 / Finish Time: 9:45
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/8/2008 / Date: 12/8/2008
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Description
							Surface Conditions: Gravel - landscaped area
					1		[0 - 3'] Landscaping gravel Hand auger to 5'
			0		2		Brown-Dark brown silty f-m SAND, loose, moist, with debris (plastic, glass) **SM**
					3		
			0		4		
					5		
	60 / 38		0		6		[5-9.5'] Dark Brown-black f-m SAND, trace silt, trace coarse sand, medium dense, moist, **SP**
			0		7	▼	Grading moist
			0		8		With debris (glass, rubber)
			0		9		
			0		10		[9.5-10'] Silty f-c SAND, peat odor **SM**
	60 / 46		0		11		[10-14.5'] Dark Brown-black silty f-cs SAND, trace fine gravel, debris **SM**
			0		12		
			0		13		
			0		14		
			0		15		[14.5-15'] 6" Brown organic CLAY with plant fibers **Pt**
	60 / 49		0		16		[15-17'] Dark Brown-black f-c SAND with fine gravel and debris (wood, glass, metal), loose, wet **SP**
			0		17		
			0		18		[17.5-19.75'] Light Brown gravelly f-cs SAND, medium dense, wet **SP**
			0		19		
			0		20		[19.75-20.5'] 3" Light Brown fine SAND **SP**

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 1	Logged By M. Becker		Boring No.: GW-05
	Driller: John Diamond/ Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 8:00 / Finish Time: 9:45
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/8/2009
	Depth of Grout:		Date: 12/8/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 60		0		21		[20.5-21.5'] Light brown gravelly f-c SAND, medium dense, wet **SP**
			0		22		[21.5-26.5'] Grading light brown fine SAND, trace fine gravel, dense, wet **SP**
			0		23		
			0		24		
			0		25		
	60 / 32		0		26		
			1.2		27		[26.5-29'] Grading to light brown f-cs gravelly SAND, medium dense, wet **SP**
			1.4		28		
			1.8		29		
			1.5		30		[29-31'] Grading gray gravelly SAND, medium dense, wet **SP**
			1.2				
	60 / 30		0		31		[31-31'] Gray micaceous fine SAND, trace medium sand, dense, wet **SP**
			0		32		
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-06
	Driller: John Diamond/ Zebra		Sheet: 1 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 10:51 / Finish Time: 12:25
	Water Level:		
	Depth of Screen:		Date: 12/9/2008 / Date: 12/9/2009
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Description
							Asphalt
					1		[0-3"] Asphalt
					2		Hand auger to 5'
					3		Dark Brown f-m SAND, trace fine gravel, debris (plastic) loose, dry **SP**
					4		
					5		
	60 / 44		2.1		6		[5-6'] Dark brown f-m SAND, with gravel and glass fragments (layer of glass at 6') **SP**
			3.3		7		[6-7.5']Brown f-m SAND (firm), gravel fragments **SP**
			1.6		8	▼	[7.5'-8'] Dark brown CLAY **CL**
			1.1		9		[8-10'] Light tan to brown f-m SAND with gravel **SP/GP**
			0.9		10		
	60 / 60		0		11		[10-12.5'] Light to medium brown f-m gravelly SAND, wet, loose **SP/GP**
			0		12		
			0		13		[12.5-15'] Light to medium brown f-m SAND with gravel, moist, loose **SP/GP**
			0		14		
			0		15		
	60 / 60		0		16		[15-20'] Dark brown f-m SAND with gravel. **SP/GP**
			0		17		
			0		18		
			0		19		
			0		20		[20'] Wood fragments

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-06
	Driller: John Diamond/ Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time / Finish Time
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 12/9/2008
	Depth of Grout:		Date

Sample No. / Depth	Inches Driv. / Recc	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 60		0		21		[20-23'] Medium brown f-m SAND with gravel, wet **SP/GP**
			0		22		
			0		23		[23-24.5'] Medium brown gravelly SAND, moist **SP/GP**
			0		24		
			0		25		[24.5-25'] Dark gray to brown silty CLAY **OH**
	60 / 36		0		26		[25-28.5'] Light tan gravelly SAND **SP/GP**
			0		27		
			0		28		
			0		29		[28.5-30'] Light gray fine SAND **SP**
			0		30		
	60 / 42		0		31		[30-31'] Light gray fine SAND **SP**
			0		32		[31-32'] Dark gray fine SAND **SP**
			0		33		[32-33.5'] Light gray fine SAND, wet **SP**
			0		34		[33.5-35'] Light gray fine SAND, moist **SP**
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring: SEE FIGURE 2	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By: M. Becker		Boring No.: GW-07
	Driller: John Diamond/ Zebra		Sheet: 1 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 13:50 / Finish Time: 7:55
	Water Level:		
	Depth of Screen:		Date: 12/8/2008 / Date: 12/9/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
					1 2 3 4 5		[0-3"] Asphalt Hand auger to 5' Dark Brown f-m SAND, trace fine gravel, loose, dry **SP**
	60 / 38		0		6		[5-6.5'] Light brown/tan f-m SAND, (no impact) **SP**
			1.4		7	▼	[6.5-7.5'] Dark brown to light tan f-m SAND, with metal fragments and glass **SP**
			0.4		8		[7.5-10'] Dark brown f-m SAND, moist **SP**
			0		9		
			0		10		
	60 / 47		0		11		[10-12'] Dark brown f-m SAND, moist, loose, (no impact) **SP**
			0		12		[12-15'] Dark brown f-m SAND with plant matter, firm **SP**
			0		13		
			0		14		
			0		15		
	60 / 2				16 17 18 19 20		Little Recovery: Dark brown gravel and glass fragments

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-07
	Driller: John Diamond/ Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 13:50 Finish Time: 7:55
	Water Level:		
	Depth of Screen:		Date: 12/8/2008 Date: 12/9/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 21		0		21		[20-21'] Dark brown f-m SAND **SP**
			0		22		[21-25'] Light tan fine SAND, moist **SP**
			0		23		
			0		24		
			0		25		
	60 / 35		0.1		26		[25-27.5] Light gray GRAVEL and SAND **GP/SP**
			0.1		27		
			0.2		28		[27.5'-30'] Gray fine SAND, moist **SP**
			3.7		29		
			1.7		30		
	60 / 40		0		31		[30-33.5] Light gray f-m SAND, moist **SP**
			0		32		
			0		33		
			0		34		[33.5-35'] Dark gray CLAY **CL**
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-08
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 9:10 / Finish Time: 10:45
	Water Level:		
	Depth of Screen:		Date: 12/3/2008 / Date: 12/3/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-3"] Asphalt
					2		Hand auger to 5'
					3		Dark Brown m-cs SAND, some fine gravel, trace silt, loose, dry **SP**
					4		
					5		
			0				[5-6.5'] Brown f-cs SAND, trace silt, moist
			1.2		6		
	60		0				
	36		0.5		7		[6.5-7'] Brown organic CLAY with plant fragments **Pt**
			0				[7-14] Brown fine SAND, trace m-cs sand, fine gravel, loose, moist **SP**
			8.6		8	▼	
			0.7				Grading wet
			2		9		
					10		
			2.1				As above
			2.4		11		
	60		4.2				
	60		3		12		
			11.7				
			1.5		13		
			0				
			0		14		
			0				[14-15'] Brown f-m SAND, with debris (newspaper, plass, plastic, wood) Fill.
			0		15		
			0				Wood fragment in tip - poor recovery
	60				16		
	12						
					17		
					18		
					19		
					20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-08
	Driller: John Diamond/ Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 9:10 / Finish Time: 10:45
	Water Level:		
	Depth of Screen:		Date: 12/3/2008 / Date: 12/3/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
			1.0		21		[20-22.5'] Dark brown organic CLAY with plant fibers, soft, wet **Pt**
	60 / 30		0		22		
			0.3		23		[22.5-24'] Dark brown fine SAND, trace m-cs sand, f gravel, medium dense, wet **SW**
			0		24		Grading light brown
			0		25		
			0		26		[25-29.5']Light gray f-m SAND, trace cs sand, dense, wet **SW**
	60 / 32		0		27		
			0		28		
			0		29		
					30		Medium gray vf SAND, dense, wet **SP**
			0		31		As above
	60 / 42		0		32		
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By M. Becker		Boring No.: GW-09
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 14:45 / Finish Time: 16:50
	Water Level:		
	Depth of Screen:		Date: 12/3/2008 / Date: 12/3/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt
					1		[0-3"] Asphalt
					2		Hand auger to 5'
					3		Brown organic CLAY with plant fibers, dry (possibly reworked) **Pt**
					4		
					5		
			0				[5 - 5.5'] Wood fragments
			0		6		[5.5-8.5] Brown organic CLAY with plant fibers, soft **Pt**
	60		1				
	52		13.6		7		
			23.2				Grading medium stiff
					8	▼	
			109				[8.5-8.75'] Light brown f-m SAND, wet
					9		Brown organic CLAY with plant fibers **Pt**
			0.3				
			4.9		10		
			30.3				[10-12'] Grayish brown f-m SAND, some cs sand and fine gravel, dense, wet **SW**
			2.3		11		
	60		18.1				
	60		25.4		12		
			42.7				[12-14'] Brown organic CLAY with plant fibers, soft, wet **Pt**
			65.3		13		
			15.7				
			9.1		14		
			1.6				[14-15'] Gray f-m SAND, some cs sand and fine gravel, medium dense, wet **SW**
			0.3		15		
			9.8				Grading to brown
			4.1		16		
	60		3.6				Grading to light brown
	60		0		17		
			0				
					18		
			0				[18-20'] Light brown fine SAND, trace medium sand, dense, wet **SP**
			0		19		
			0				
					20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By M. Becker		Boring No.: GW-09
	Driller: John Diamond/ Zebra		
	Drilling Method: Geoprobe		Sheet: 2 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 14:45 / Finish Time: 16:50
	Water Level:		
	Depth of Screen:		Date: 12/3/2008 / Date: 12/3/2008
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recc	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
			0		21		[20-23'] Light brown f SAND, trace cs SAND and f gravel, dense, wet **SW**
	60 / 48		0		22		
			0		23		Grading to light gray
			0		24		
					25		
			0		26		[25-27'] Gray fine SAND, trace silt, dense, wet **SW**
	60 / 60		0		27		[27-35']Light gray f-m SAND, trace f gravel, medium dense, wet
			0		28		
			0		29		
			0		30		
			0		31		As above
	60 / 60		0		32		
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.:	Client:	Location:
SEE FIGURE 2	38546433	BP	FREEPORT, NY
	Logged By: ANDREW KOHLBECKER		Boring No.: MW-05-15D
	Driller: AQUIFER DRILLING & TESTING		
	Drilling Method: 4.5" HOLLOW STEM AUGER		Sheet: 1 of 2
	Sampling Method: SPLIT SPOONS		Drilling Start Time: 11:30 / Finish Time: 13:40
	Water Level: ~6 FEET BELOW GRADE		
	Depth of Screen:		
	Depth of Gravel:		Date: 4/19/2005 / Date: 4/19/2005
	Depth of Bentonite:		

Sampler Type	Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Water Level	Surface Conditions
								3" Asphalt
						1		Compressed gravel fill
						2		Air Knife to 5 feet
						3		
						4		
						5		
						6	▼	
		24 / 10	2 2 / 1 1			7		
				0.0 / 0.0		8		Brown fine to coarse SAND, trace fine rounded gravel, trace silt, wet **SW**
		24 / 10	2 2 / 1 1			9		
				0.0 / 0.0		10		
		24 / 12	4 4 / 3 2			11		
				0.0 / 0.1		12		
		24 / 14	4 5 / 7 3			13		
				0.0 / 0.1		14		
		24 / 8	2 2 / 2 2			15		
				0.1		16		Tan coarse SAND to medium rounded GRAVEL **GW**
		24 / 14	4 5 / 6 17			17		
				0.0 / 0.0		18		Brown medium to fine SAND and SILT, includes garbage (newspaper, glass, etc.), very dense **SM**
		24 / 8	4 3 / 4 9			19		
				0.6 / 0.8		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.:	Client:	Location:
SEE FIGURE 2	38546433	BP	FREEPORT, NY
	Logged By: ANDREW KOHLBECKER		Boring No.: MW-05-15D
	Driller: AQUIFER DRILLING & TESTING		
	Drilling Method: 4.5" HOLLOW STEM AUGER		Sheet: 2 of 2
	Sampling Method: SPLIT SPOONS		Drilling Start Time: 11:30 / Finish Time: 13:40
	Water Level: ~6 FEET BELOW GRADE		
	Depth of Screen:		
	Depth of Gravel:		Date: 4/19/2005 / Date: 4/19/2005
	Depth of Bentonite:		

Sampler Type	Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Soil Graph	Surface Conditions
		24 / 14	4 3 / 4 4			21		Brown medium to fine SAND and SILT, includes garbage (newspaper, glass, etc.), very dense **SM**
				0.1 / 0.1		22		Brown medium SAND, well sorted **SW**
		24 / 8	9 13 / 15 8			23		Brown medium SAND, well sorted, trace medium rounded gravel and plant leaves **SP**
				0.0 / 0.1		24		
		24 / 16	21 15 / 11 11	0.0		25		Light tan medium SAND to medium rounded GRAVEL **SP**
				0.0 / 0.0		26		
		24 / 24	7 12 / 10 7	0.0 / 0.0		27		Gray medium SAND to medium rounded GRAVEL **SP**
				0.0 / 0.0		28		Grading to light gray
		24 / 12	7 22 / 18 26			29		Fine to medium SAND, very well sorted, dense **SP**
				0.6 / 0.8		30		
		24 / 24	11 10 / 22 17	0.0 / 0.0		31		Grading with debris (cloth, newspaper)
				0.2 / 0.0		32		
		24 / 24	13 17 / 14 14	0.0 / 0.0		33		Fine to medium SAND, very well sorted, trace gravel, dense **SP**
				0.0 / 0.0		34		
		24 / 24	11 13 / 13 15	0.0 / 0.0		35		
				0.0 / 0.0		36		Gray SILT, very well sorted, very dense **ML**
		24 / 24	11 11 / 12 17	0.0 / 0.0		37		Gray medium SAND, well sorted, trace medium gravel **SP**
				0.0 / 0.0		38	EOB	Gray SAND, very well sorted, very dense **SP**
						39		NOTES:
						40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By: J.C.		Boring No.: MW-09-19D
	Driller: Zebra		Sheet: 1 of 2
SEE FIGURE 2	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 8:45 / Finish Time: 10:45
	Water Level:		
	Depth of Screen:		Date: 7/20/2009
	Depth of Sand:		Date: 7/20/2009
	Depth of Seal:		

Surface Conditions: Asphalt pavement

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	
					1		0-0.33' Asphalt Hand auger to 6.5' [0.33-3'] Brown SAND, small to medium pebbles, concrete and asphalt **SP**
					2		
					3		[3-5'] Light brown SAND, fine gravel **SP**
					4		
			0.3		5		
	60 36		0		6		[5-7.5'] Light brown f-m SAND, some fine gravel **SP/GP**
			0.1		7	▼	
			0.2		8		[7.5'-10'] Brown f-m SAND, trace gravel, wet medium sand, silt **SP/GM**
			0		9		
			0		10		
	60 27		0		11		[10-11'] Dark gray medium silty SAND, with glass, wood, roots, loose, J70wet (Fill) [11-12'] Brown medium SAND, wet **SP**
			0		12		
			0		13		[12-15'] Light brown vf-cs SAND, trace gravel, medium dense, wet **GP/SP**
			0		14		
			0		15		
	60 35		0		16		[15-16'] Light brown m-f SAND, trace coarse sand, wet **SW** [16-18'] Light beown f-m SAND, trace gravel, loose, wet **SP/GP**
			0		17		
			0		18		[18-20'] Light brown f-m SAND, wet **SP**
			0		19		
			0		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By: J.C.		Boring No.: MW-09-19D
	Driller: Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 8:45 / Finish Time: 10:45
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/20/2009
	Depth of Grout:		Date: 7/20/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Description
							Asphalt
	60 / 34		0		21		[20-22'] Light brown f-m SAND, wet **SP**
			0		22		[22-23'] Light brown f-cs SAND, trace gravel, wet **SW/GP**
			0		23		[23-25'] Light brown f-m SAND, medium dense, wet **SP**
			0		24		
			0		25		
	60 / 7				26		[25-25.5'] Light gray vf-m SAND, trace silt and gravel, wet **SW/GM**
					27		
					28		
			0		29		
			0		30		
	60 / 15				31		[30-32'] Light gray vf-m SAND, trace silt, wet **SW/ML**
					32		
			0		33		[33-33.5'] Dark gray f-m SAND, wet **SP**
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By J.C.		Boring No.: MW-09-21D
SEE FIGURE 2	Driller: Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 10:50 / Finish Time: 12:30
	Water Level:		
	Depth of Screen:		Date: 7/20/2009 / 7/20/2009
	Depth of Sand:		
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt pavement
					1		[0 - 0.25'] Asphalt Hand Auger to 6.5'
			0		2		[0-3'] Gray coarse GRAVEL, light gray f-m sand, (Asphalt and FILL) **GP/SP**
			0		3		
			0		4		[3-4'] Brown f-m SAND, trace silt, gravel **SP/GM**
			0		5		[4-5'] Dark brown to black silty SAND, trace clay, wood fragments, light gray m sand, -faint organic odor **SM/SC**
	60 / 32		0		6		[5-6'] Brown f-m sand, trave gravel (FILL) **SP/GP**
			0		7	▼	[6-7.5'] Dark gray vf-m SAND, trace silt, fine gravel **SW**
			0		8		[7.5'-10'] Light to dark gray vf-cs SAND, trace gravel to fine gravel, wet **SW/GP**
			0		9		
			0		10		
	60 / 28		1.3		11		[10-11'] Gray to black f-m SAND, some plant fragments, trace silt **SP/OL**
			2.0		12		[11-14'] Brown to dark brown CLAY with silt, plant fragments, organic odor **Pt**
			6.7		13		
			6.5		14		[14-15'] Brown vf-m gravel, some f-m sand **GW/SP**
			10		15		
	60 / 38		0		16		[15-16'] Light brown f-m SAND, trace silt, medium dense, wet **SP/ML**
			0		17		[16-17'] Brown f-m SAND **SP**
			0		18		[17-19'] F-m gravel, light brown f-m sand **GP/SP**
			0		19		
			0		20		[19-20'] Light brown to olive color f-m SAND, moist **SP**

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By J.C.		Boring No.: MW-09-21D
	Driller: Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: 10:50 / Finish Time: 12:30
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/20/2009
	Depth of Grout:		Date: 7/20/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 43		0		21		[20-21.5'] Light brown vf-f-m SAND, trace silt, no odor, moist **SW/ML**
			0		22		[21.5-25'] Light brown to olive f-cs SAND, trace fine gravel, no odor, moist **SW/GP**
			0		23		
			0		24		
			0		25		
	60 / 25		0		26		[25-29'] Light brown f-m SAND, no odor, dense, wet **SP**
			0		27		
			0		28		
			0		29		[29-30'] Light gray vf-m SAND, fine gravel, wet **SW/GP**
			0		30		
	60 / 27		0		31		[30-35'] Same as 29-30' above **SW/GP**
			0		32		
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By J.C.		Boring No.: MW-09-23D
	Driller: Zebra		
SEE FIGURE 2	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling: Start Time 13:25 / Finish Time 17:00
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/20/2009 / Date: 7/21/2009
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Asphalt pavement
					1		[0-.5'] Asphalt, gravel Hand auger to 6.5' [0.5-5'] Brown f-m SAND, f-m coarse gravel, glass, debris (plastic wood, ceramic, brick) FILL
					2		
			0		3		
			0		4		
			0		5		
	60 / 21		0		6		[5-7'] F-m GRAVEL with debris (plastic, wood) **GP**
			0		7	▼	[7-10'] Dark to light gray f-cs SAND, fine gravel, wet **SW/GP**
			0		8		
			0		9		
			0		10		
	60 / 60		0		11		[10-12.5'] Light gray f-m SAND, fine gravel, wet, peat odor **SP/GP**
			0		12		
			14.2		13		[12.5-14'] Brown organic CLAY, some plant fragments **Pt**
			22.5		14		[14-15'] Light to dark brown f-m SAND, some silt, fine gravel, peat odor, medium dense, wet **SP/GM**
			18.1		15		
	60 / 43		20.1		16		[15-17'] Brown f-m SAND, some fine gravel, organic odor **SP/GP**
			5.4		17		[17-20'] Light brown f-m SAND and f-m gravel, no odor **SP/GP**
			0.1		18		
			0		19		
			0		20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By J.C.		Boring No.: MW-09-23D
	Driller: Zebra		
	Drilling Method: Geoprobe		Sheet: 2 of 2
SEE FIGURE 2	Sampling Method: 5' Macrocore		Drilling Start Time: 13:25 / Finish Time:
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/20/2009 / Date: 7/21/2009
	Depth of Grout:		

Surface Conditions

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	
	60 / 32		0		21		[20-25'] Light brown to olive f-cs SAND, medium dense, wet **SW**
			0		22		
			0		23		
			0		24		
			0		25		
	60 / 29		0		26		[25-26.5'] same as above **SW**
			0		27		[26.5-30'] Light gray f-m SAND, some medium gravel, dense, wet **SP/GP**
			0		28		
			0		29		
			0		30		
	60 / 27		0		31		[30-32'] Light gray f-m SAND, some f-m gravel, wet **SP/GP**
			0		32		[32-35'] Light gray vf-m SAND, wet **SW**
			0		33		
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By J.C.		Boring No.: MW-09-25D
	Driller: Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 13:20 / Finish Time:
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/23/2009 / Date:
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Description
					1–5	▼	Surface Conditions: Asphalt pevement [0-0.25'] Asphalt and gravel Hand auger to 6.5' [0.25-5'] Dark brown to dark green f-m silty SAND with gravel and debris (glass, wood, plastic, brick, concrete) FILL, no odor
	60 / 33				5–10		[5-9.5'] Dark gray vf-f SAND, trace silt and coarse sand, no odor **SP/SM** [9.5-10'] Dark gray organic CLAY, some silt, plant material, no odor **Pt**
	60 / 8				10–15		[10-15'] Dark gray organic CLAY, some silt, plant material, medium gravel, brown medium sand, peat odor, wet **Pt/GM**
	60 / 36				15–20		[15-16.5'] Gray m-cs SAND, some fine gravel, medium dense, wet **SP/GP** [16.5-20'] Gray to olive f-m SAND, some silt and coarse sand **SP/SM**

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By J.C.		Boring No.: MW-09-25D
	Driller: Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling Start Time: Finish Time
	Water Level:		13:20
	Depth of Screen:		
	Depth of Sand:		Date: Date
	Depth of Grout:		7/23/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 35		0		21		[20-21'] Light gray vf-m SAND, wet, no odor **SW**
			0		22		[21-25'] As above, grading medium gray.
			0		23		
			0		24		
			0		25		
	60 / 16		0		26		[25-30'] Light gray f-m SAND, with fine gravel, medium dense, wet, no odor **SP/GP**
			0		27		
			0		28		
			0		29		
			0		30		
	60 / 19		0		31		[30-33'] Light gray f-m SAND, some coarse sand and fine gravel, wet, no odor **SW/GP**
			0		32		
			0		33		[33-35'] Gray f-m SAND, some coarse sand, wet, no odor **SW**
			0		34		
			0		35		
					36		
					37		
					38		
					39		
					40		

URS CORPORATION

Soil Boring Log

Location of Boring: SEE FIGURE 2	Job No.: 11130272	Client: BP	Location: Freeport
	Logged By: J.C.		Boring No.: MW-09-26D
	Driller: Zebra		
	Drilling Method: Geoprobe		Sheet: 1 of 2
	Sampling Method: 5' Macrocore		Drilling Start Time: 8:40 / Finish Time: 11:00
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/21/2009 / 7/21/2009
	Depth of Grout:		

Sample No. / Depth	Inches Driv. / Recov.	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions / Description
							Asphalt pavement
					1		[0-0.5'] Asphalt, gravel
					2		Hand auger to 6.5'
					3		[0.5-4'] Brown f-m SAND, silt, fine gravel, Asphalt **SP/GM**
					4		[4-5'] Light brown f-cs SAND **SW**
	60 / 39		0		5		[5-6'] Lt brown f-m SAND with light gray f gravel **SP**
			0		6		[6-6.25'] Band of orange/red f-m SAND, with plant fibers **SP**
			0		7		[6.25-9'] Gray to black f-m SAND, layer of black f-m sand, fine gravel, loose, wet, some organic odor SP/GP
			0		8		
			0.1		9		[9-10'] Black organic CLAY, with plant material **OH**
	60 / 42		0		10		[10-11.5'] As above
			12		11		
			24		12		[11.5-13'] Gray f-cs SAND, medium gravel, medium dense, wet, organic odor **SW/GP**
			35		13		[13-15'] Dark brown to brown f-cs SAND, fine gravel **SW/GP**
			20		14		[14'] 0.5" layer of dark brown f-cs SAND, organic odor, PID reading of 20.0
	60 / 39		0		15		[15-17'] Dark brown f-m SAND, fine gravel, some silt, slight odor **SP/GM**
			0.2		16		
			0.1		17		[17-19'] Brown m-cs SAND, trace silt, mediium dense,no odor **SP/ML**
			0		18		
			0		19		[19-20'] Light gray/olive f-m SAND, no odor **SP**
					20		

URS CORPORATION

Soil Boring Log

Location of Boring	Job No.: 11130272	Client: BP	Location: Freeport
SEE FIGURE 2	Logged By J.C.		Boring No.: MW-09-26D
	Driller: Zebra		Sheet: 2 of 2
	Drilling Method: Geoprobe		
	Sampling Method: 5' Macrocore		Drilling: Start Time 8:40, Finish Time 11:00
	Water Level:		
	Depth of Screen:		
	Depth of Sand:		Date: 7/21/2009
	Depth of Grout:		Date: 7/21/2009

Sample No. / Depth	Inches Driv. / Recd	Blow Count / 6"	PID (ppm)	Analytical Sample	Depth (ft.)	Depth to Groundwater (ft.)	Surface Conditions
	60 / 32		0.1		21		[20-23.5'] Light brown/gray/olive f-m SAND, dense, wet, no odor **SP**
			0.2		22		
			0		23		
			0		24		[23.5-25'] Light gray f-m SAND, vf-m gravel, wet **SP/GW**
			0		25		
	60 / 31		0		26		[25-27'] Gray m-cs SAND, f-m gravel, no odor **SP/GP**
			0		27		
			0.2		28		[27-30'] Gray f-m SAND, dense, wet **SP**
			0.1		29		
			0		30		
	60 / 31		0		31		[30-35'] Light gray vf-m SAND **SW**
			0		32		
			0.2		33		
			0.1		34		
			0.2		35		
					36		Note: PID unreliable due to heavy rain and high humidity
					37		
					38		
					39		
					40		

APPENDIX B
MONITORING WELL CONSTRUCTION DIAGRAMS

URS CORPORATION

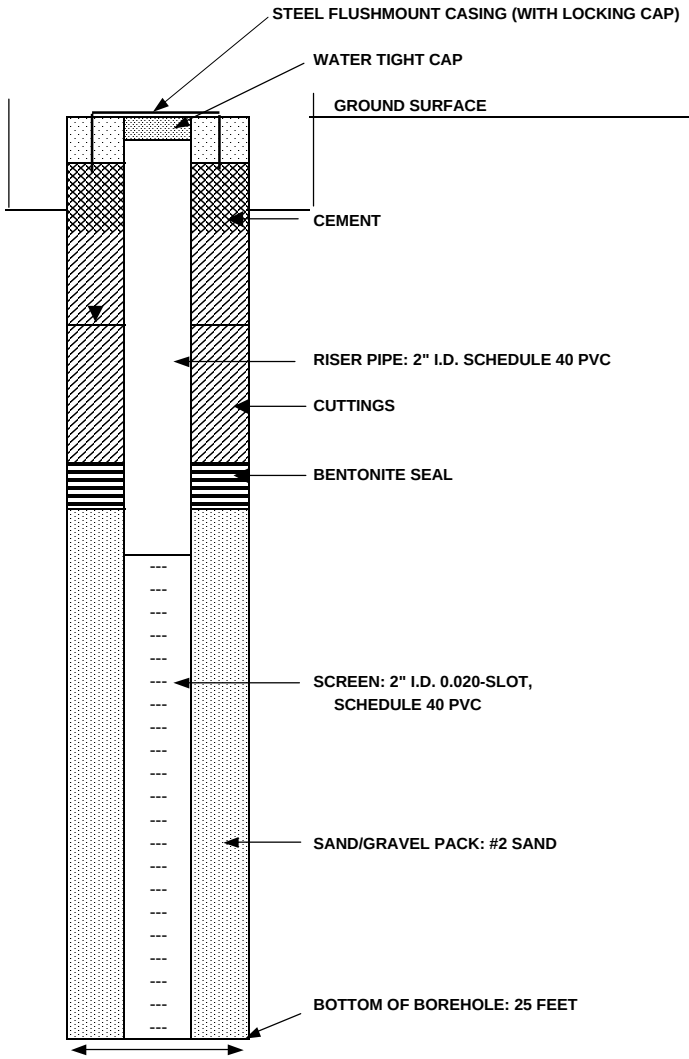
MONITORING WELL CONSTRUCTION DIAGRAM

MW-05-14S

Project name & location	*Project No.*	*NYDEC well permit No.*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	38546433	NA	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
AQUIFER DRILLING AND TESTING, INC.	APRIL 20, 2005/33 MINUTES	GEOD CORPORATION	5.87
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
APRIL 19, 2005	PUMP AND PURGE	*(NAD 1983):*	5.84
Observed by	*Development pumping rate*	NORTH 175143.377	*Top of riser pipe elevation*
A. KOHLBECKER, M. BECKER	LESS THAN 0.5 GPM	EAST 1102953.516	5.68

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	5.87	0.00
TOP OF PVC RISER	5.68	0.19
TOP OF GRAVEL PACK	1.87	4.00
WATER TABLE	-0.13	6.00
BOTTOM OF BENTONITE SEAL	-7.13	13.00
TOP OF SCREEN	-9.13	15.00
BOTTOM OF SCREEN	-19.13	25.00

CONSTRUCTION DETAILS



DIAMETER OF BOREHOLE:
7.5 inches

URS CORPORATION

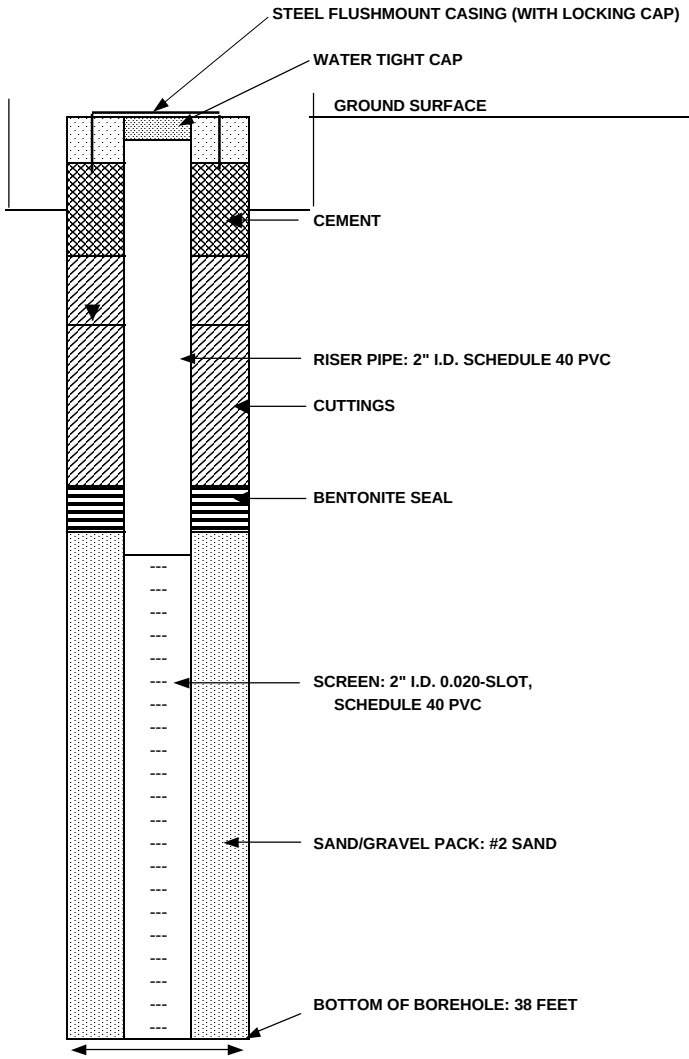
MONITORING WELL CONSTRUCTION DIAGRAM

MW-05-15D

Project name & location	*Project No.*	*NYDEC well permit No.*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	38546433	NA	
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
AQUIFER DRILLING AND TESTING, INC.	APRIL 20, 2005/43 MINUTES	GEOD CORPORATION	5.92
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
APRIL 19, 2005	PUMP AND PURGE	*(NAD 1983):*	5.89
Observed by	*Development pumping rate*	NORTH 175143.492	*Top of riser pipe elevation*
A. KOHLBECKER, M. BECKER	LESS THAN 0.5 GPM	EAST 1102953.113	5.70

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	5.92	0.00
TOP OF PVC RISER	5.70	0.22
WATER TABLE	-0.08	6.00
BOTTOM OF BENTONITE SEAL	-20.08	26.00
TOP OF SCREEN	-22.38	28.30
BOTTOM OF SCREEN	-32.38	38.30

CONSTRUCTION DETAILS



DIAMETER OF BOREHOLE:
7.5 inches

URS CORPORATION

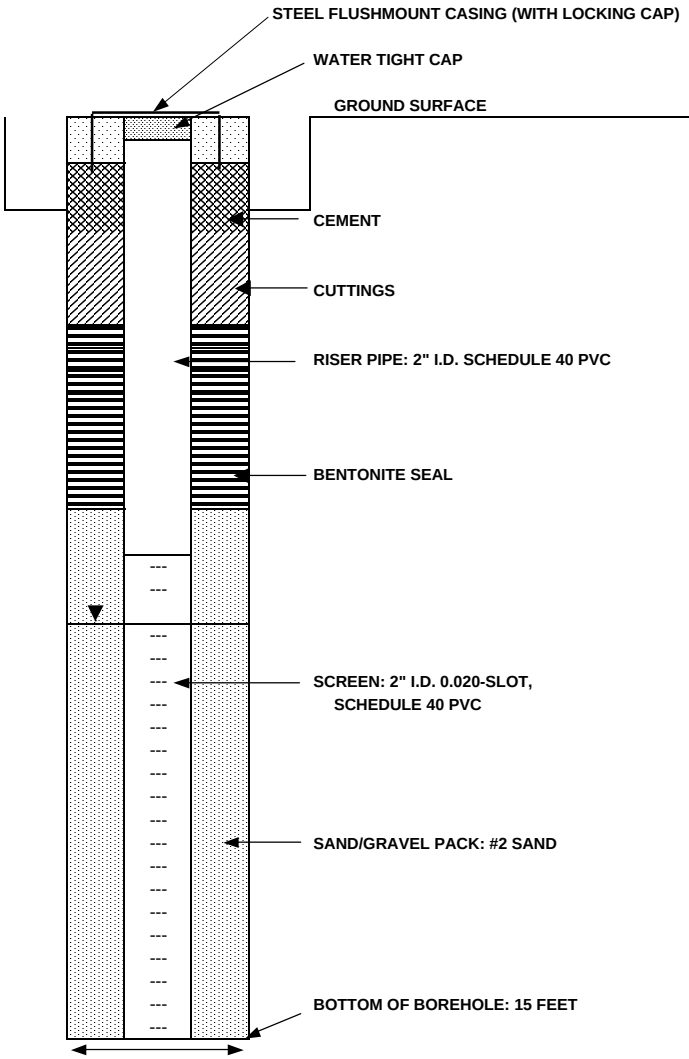
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-18S

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/31/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.59
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/28/09	PUMP AND PURGE	*(NAD 1983):*	7.57
Observed by	*Development pumping rate*	NORTH 175298.539	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102912.107	7.33

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.57	0.00
TOP OF PVC RISER	7.33	0.24
TOP OF BENTONITE SEAL	5.57	2.00
BOTTOM OF BENTONITE SEAL	3.57	4.00
TOP OF SCREEN	2.57	5.00
WATER TABLE	1.57	6.00
BOTTOM OF SCREEN	-7.67	15.00

CONSTRUCTION DETAILS



URS CORPORATION

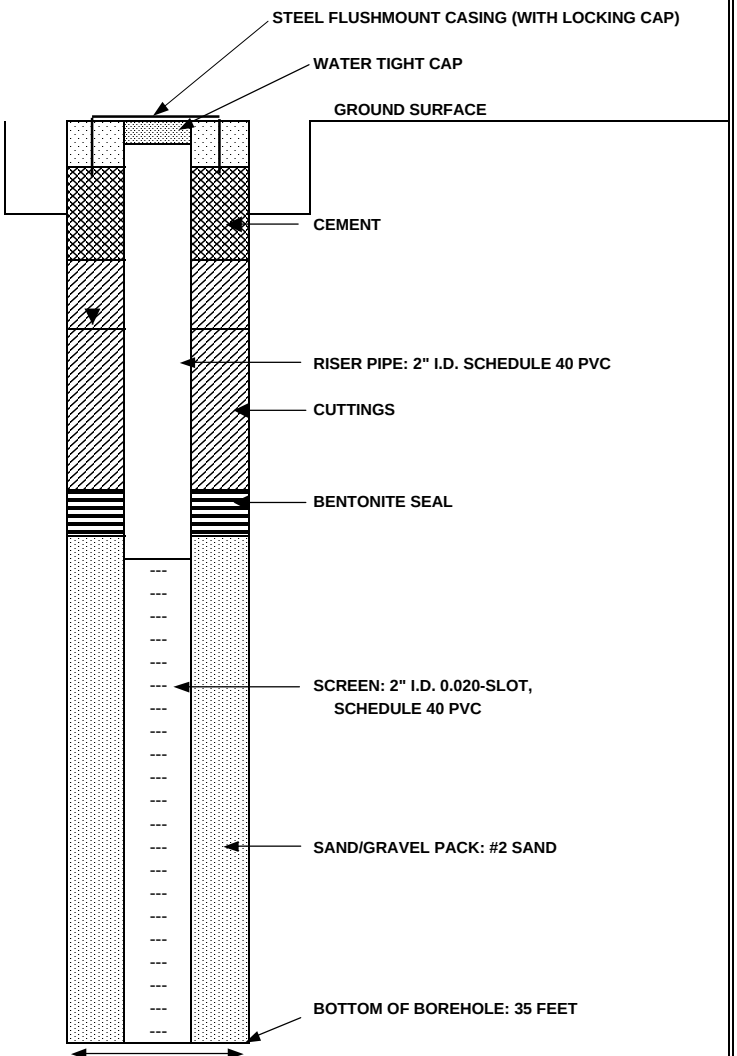
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-19D

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/31/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.78
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/28/09	PUMP AND PURGE	*(NAD 1983):*	7.57
Observed by	*Development pumping rate*	NORTH 175298.539	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102912.107	7.32

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.78	0.00
TOP OF PVC RISER	7.32	0.46
WATER TABLE	1.78	6.00
TOP OF BENTONITE SEAL	-14.22	22.00
BOTTOM OF BENTONITE SEAL	-16.22	24.00
TOP OF SCREEN	-17.22	25.00
BOTTOM OF SCREEN	-27.22	35.00

CONSTRUCTION DETAILS



URS CORPORATION

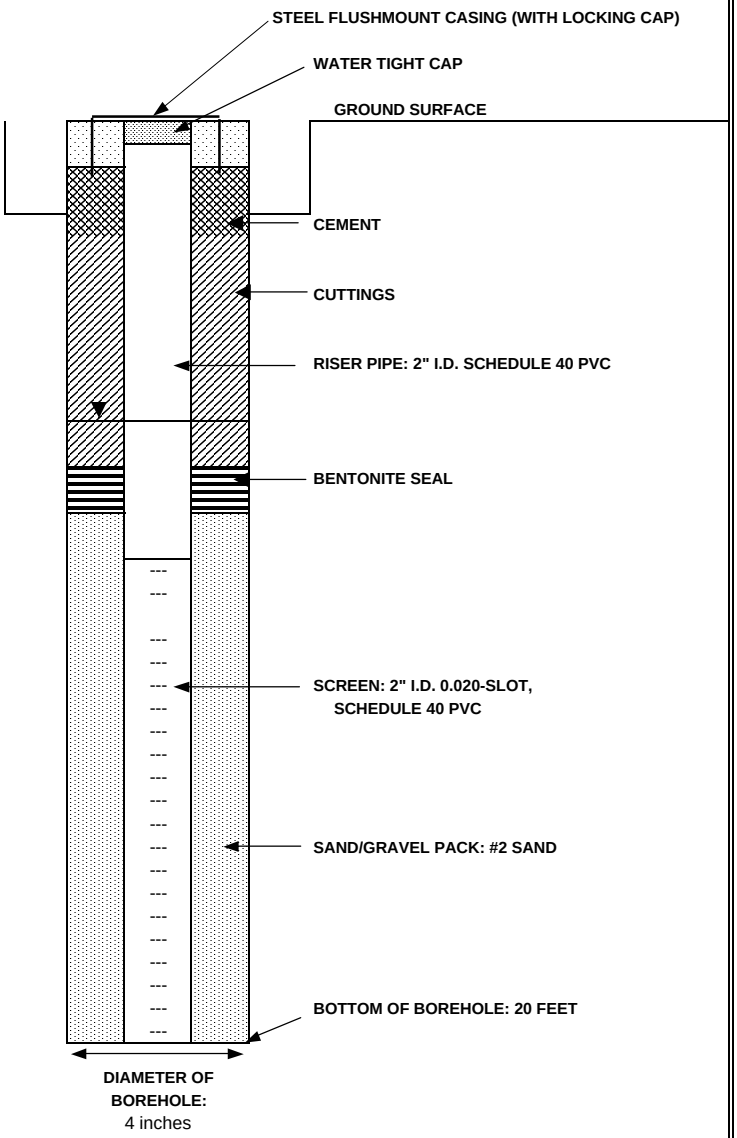
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-20S

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/29/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.62
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/22/09	PUMP AND PURGE	*(NAD 1983):*	7.59
Observed by	*Development pumping rate*	NORTH 174896.178	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102921.139	7.34

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.62	0.00
TOP OF PVC RISER	7.34	0.28
WATER TABLE	1.87	5.75
TOP OF BENTONITE SEAL	1.62	6.00
BOTTOM OF BENTONITE SEAL	-0.38	8.00
TOP OF SCREEN	-2.38	10.00
BOTTOM OF SCREEN	-12.66	20.00

CONSTRUCTION DETAILS



URS CORPORATION

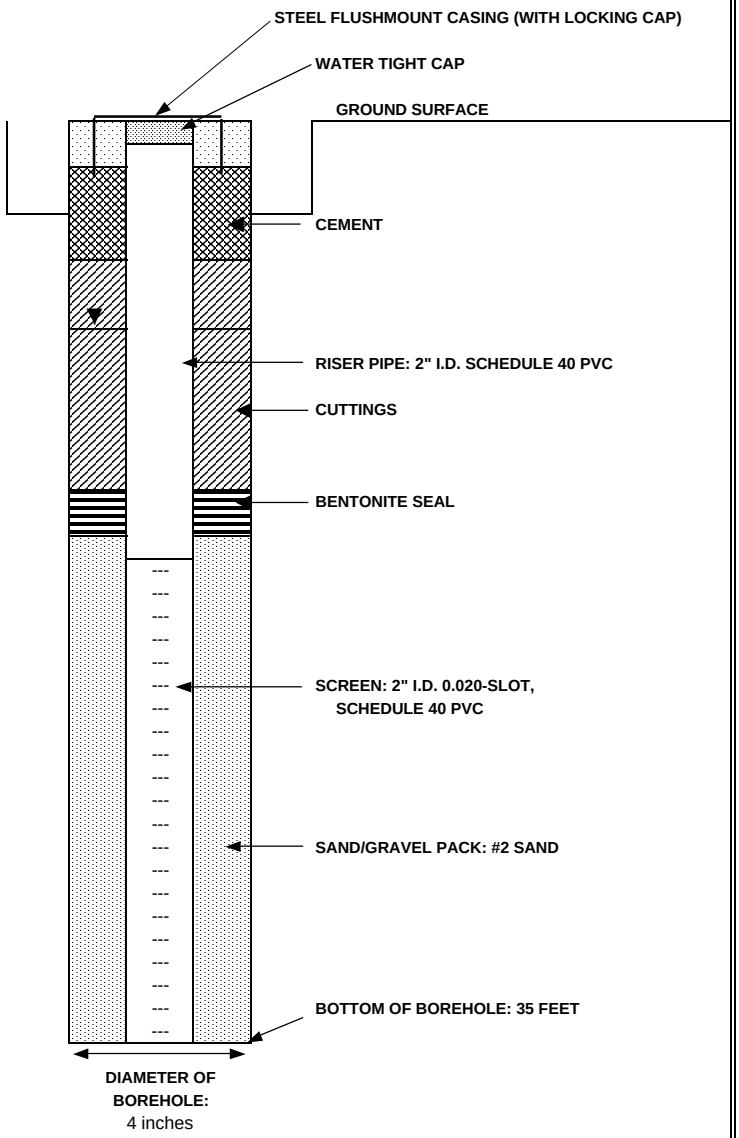
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-21D

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/29/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.63
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/22/09	PUMP AND PURGE	*(NAD 1983):*	7.61
Observed by	*Development pumping rate*	NORTH 174895.29195	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102919.405	7.39

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.63	0.00
TOP OF PVC RISER	7.39	0.24
WATER TABLE	1.63	6.00
TOP OF BENTONITE SEAL	-14.37	22.00
BOTTOM OF BENTONITE SEAL	-16.37	24.00
TOP OF SCREEN	-17.37	25.00
BOTTOM OF SCREEN	-27.37	35.00

CONSTRUCTION DETAILS



URS CORPORATION

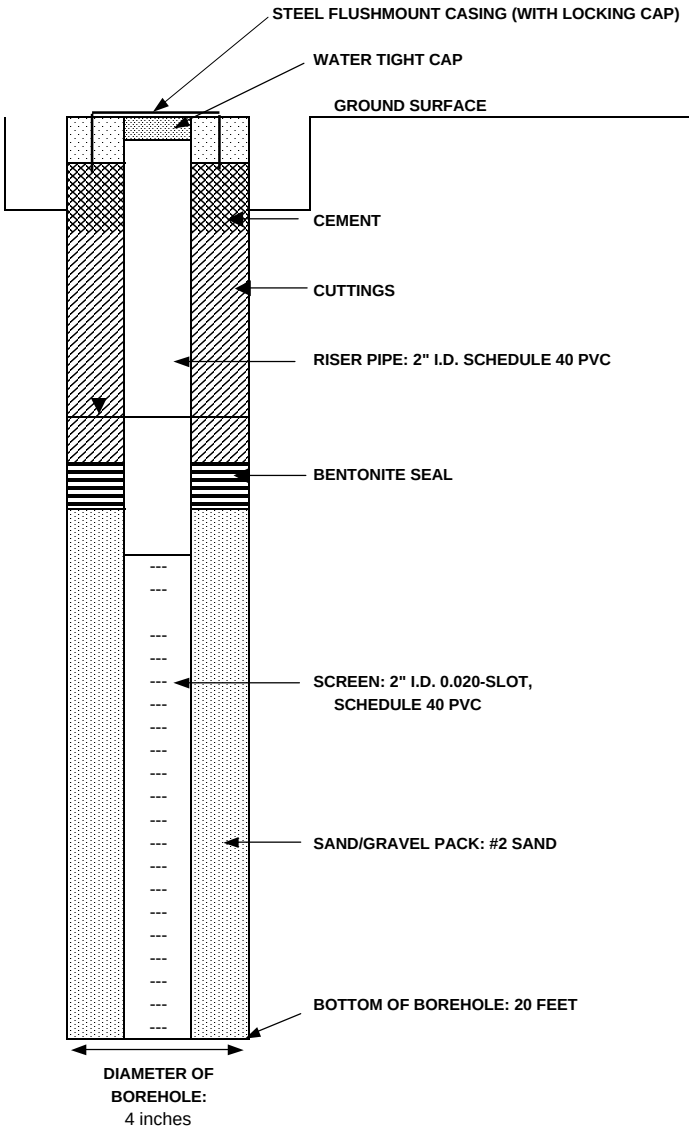
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-22S

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/30/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.61
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/24-09	PUMP AND PURGE	*(NAD 1983):*	7.59
Observed by	*Development pumping rate*	NORTH 1754833.015	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102794.906	7.26

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.61	0.00
TOP OF PVC RISER	7.26	0.35
WATER TABLE	1.86	5.75
TOP OF BENTONITE SEAL	1.61	6.00
BOTTOM OF BENTONITE SEAL	-0.39	8.00
TOP OF SCREEN	-2.39	10.00
BOTTOM OF SCREEN	-12.39	20.00

CONSTRUCTION DETAILS



URS CORPORATION

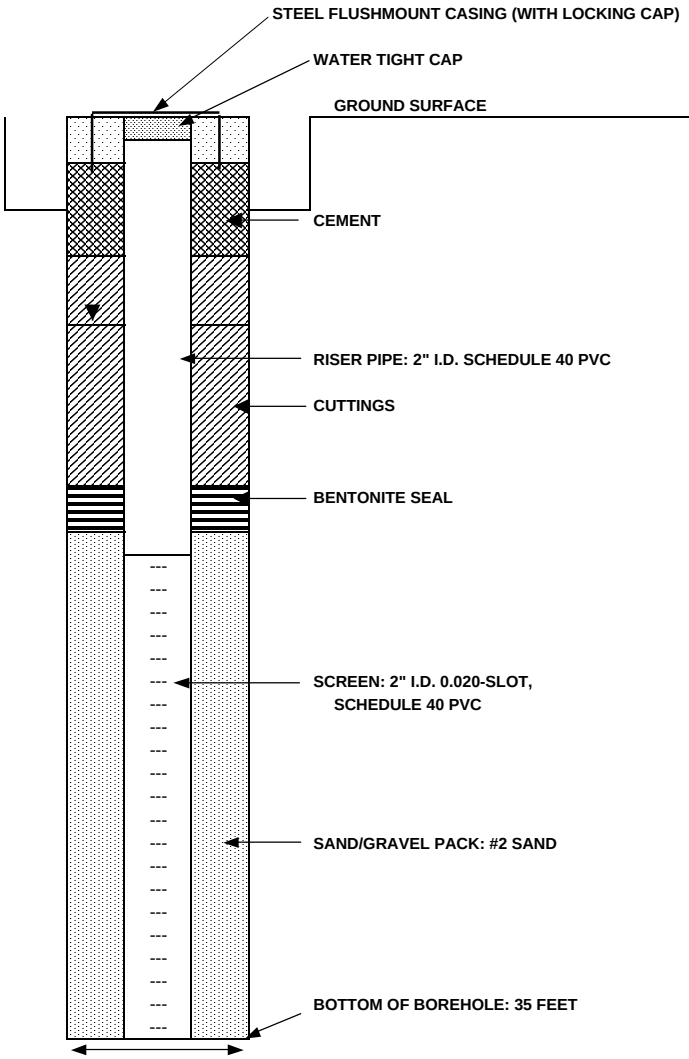
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-23D

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/30/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.59
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/24/09	PUMP AND PURGE	*(NAD 1983):*	7.57
Observed by	*Development pumping rate*	NORTH 174833.034	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102793.457	7.32

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.59	0.00
TOP OF PVC RISER	7.32	0.27
WATER TABLE	1.59	6.00
TOP OF BENTONITE SEAL	-14.41	22.00
BOTTOM OF BENTONITE SEAL	-16.41	24.00
TOP OF SCREEN	-17.41	25.00
BOTTOM OF SCREEN	-27.41	35.00

CONSTRUCTION DETAILS



DIAMETER OF BOREHOLE:
4 inches

URS CORPORATION

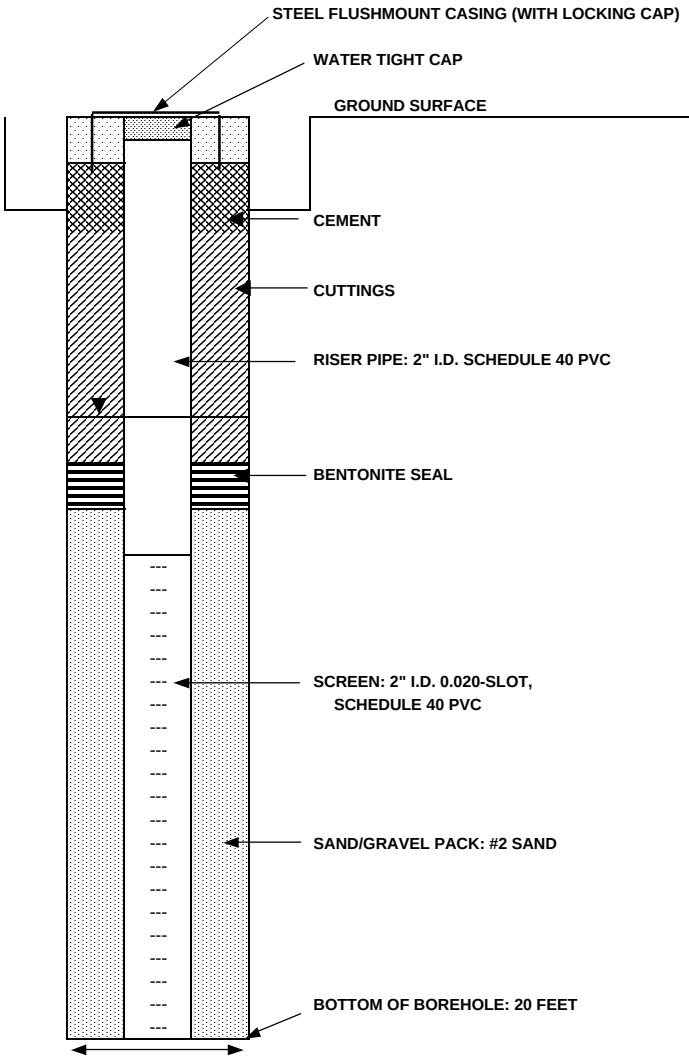
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-24S

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/30/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	5.53
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/20/09	PUMP AND PURGE	*(NAD 1983):*	5.81
Observed by	*Development pumping rate*	NORTH 175212.615	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102672.886	5.52

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	40021.00	0.00
TOP OF PVC RISER	5.52	#######
WATER TABLE	40015.25	5.75
TOP OF BENTONITE SEAL	40015.00	6.00
BOTTOM OF BENTONITE SEAL	40013.00	8.00
TOP OF SCREEN	40011.00	10.00
BOTTOM OF SCREEN	40001.00	20.00

CONSTRUCTION DETAILS



URS CORPORATION

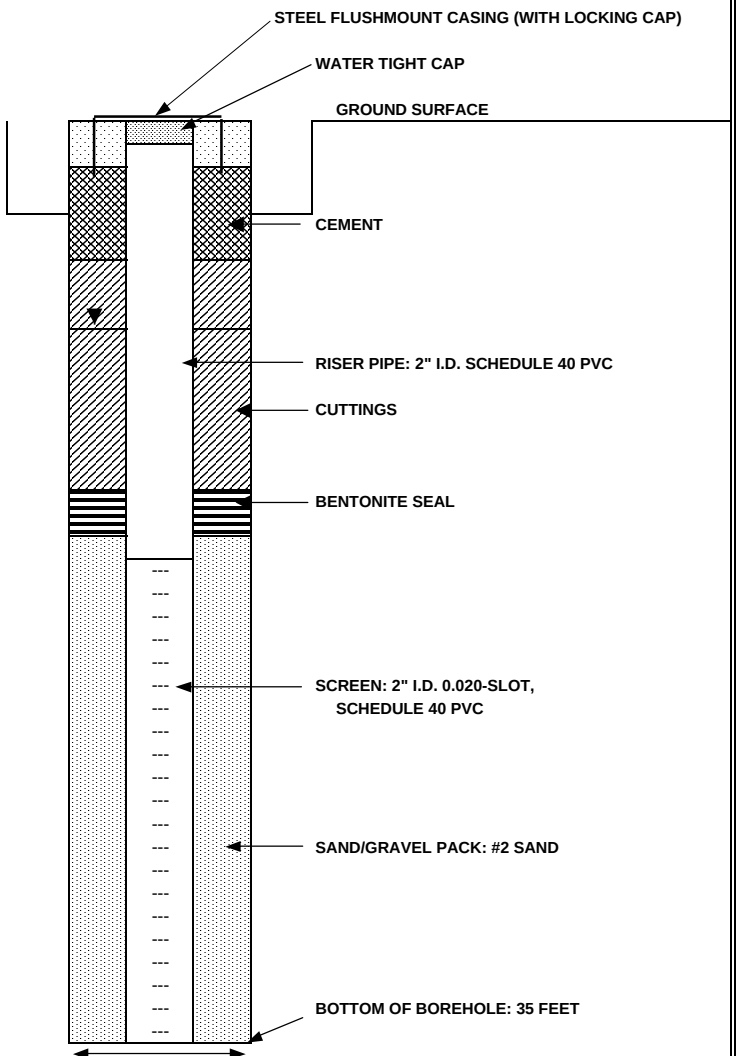
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-25D

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/30/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	5.74
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/27/09	PUMP AND PURGE	*(NAD 1983):*	5.72
Observed by	*Development pumping rate*	NORTH 175211.707	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1102670.037	5.38

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	5.74	0.00
TOP OF PVC RISER	5.38	0.36
BOTTOM OF BENTONITE SEAL	3.74	2.00
WATER TABLE	-0.26	6.00
TOP OF GRAVEL PACK	-17.26	23.00
TOP OF BENTONITE SEAL	-16.26	22.00
BOTTOM OF BENTONITE SEAL	-18.26	24.00
TOP OF SCREEN	-19.26	25.00
BOTTOM OF SCREEN	-29.26	35.00

CONSTRUCTION DETAILS



URS CORPORATION

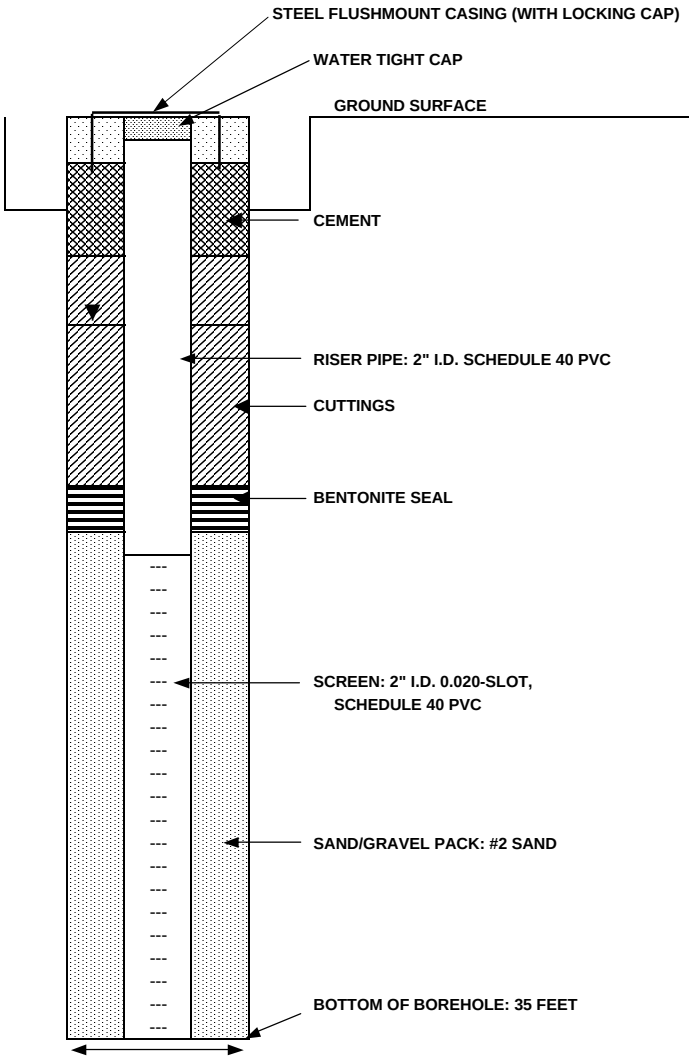
MONITORING WELL CONSTRUCTION DIAGRAM

MW-09-26D

Project name & location	*Project No.*	*Client*	*Elevation datum*
COLUMBIA CEMENT - FREEPORT, NY	11130272	BP	NAD 83
Drilling company	*Development date/duration*	*Surveyor*	*Ground elevation*
ZEBRA	7/30/09 / 60 MINUTES	J.P. FERRANTELLO, P.C.	7.22
Date of Completion	*Development method*	*NY State Plane Coordinates*	*Top of protective steel cap elevation*
7/22/09	PUMP AND PURGE	*(NAD 1983):*	7.20
Observed by	*Development pumping rate*	NORTH 175008.421	*Top of riser pipe elevation*
J. CRESPO, M. DASCOLI	LESS THAN 0.5 GPM	EAST 1103003.991	6.91

	ELEVATIONS (feet above Mean Sea Level)	**DEPTHS** (feet below ground, not to scale)
GROUND SURFACE	7.20	0.00
TOP OF PVC RISER	6.91	0.29
BOTTOM OF BENTONITE SEAL	4.91	2.00
WATER TABLE	0.91	6.00
TOP OF GRAVEL PACK	-16.09	23.00
TOP OF BENTONITE SEAL	-22.00	22.00
BOTTOM OF BENTONITE SEAL	-17.09	24.00
TOP OF SCREEN	-18.09	25.00
BOTTOM OF SCREEN	-28.09	35.00

CONSTRUCTION DETAILS



DIAMETER OF BOREHOLE:
4 inches

APPENDIX C
GROUNDWATER SAMPLING LOGS

SEPTEMBER 2009

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-03-13S Date: 9/10/09

Well Depth: 24.36' Screen length: N/A Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level:

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.8L/min

Other Info.: PID = 0.0, purged 5 gal Start Time 12:40

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
12:43	6.49	23.60	1.32	2.60	125.0	-117	5.43
12:48	6.48	23.11	1.32	1.63	57.9	-138	5.42
12:53	6.52	22.94	1.32	1.29	49.9	-146	5.41
12:58	6.52	22.75	1.32	1.08	46.9	-151	5.39
13:03	6.53	22.77	1.32	1.01	47.9	-154	5.37
13:08	6.55	22.84	1.32	0.94	47.2	-156	5.36

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-05-14S Date: 9/10/09

Well Depth: 25.03 Screen length: N/A Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.13

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.0, purged 7 gal Start Time 9:31

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
9:35	6.4	20.2	17.8	0.80	61.3	-111	5.81
9:40	6.38	19.87	17.4	0.63	43.8	-133	5.81
9:45	6.37	19.45	17.3	0.57	45.1	-146	5.80
9:50	6.39	19.68	16.9	0.52	51.7	-153	5.79
9:55	6.38	19.28	16.5	0.49	48.7	-157	5.78
10:00	6.42	19.30	16.5	0.47	58.1	-164	5.78
10:05	6.38	19.15	16.4	0.50	0.0	-168	5.78

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-05-15D Date: 9/9/09

Well Depth: 38.25' Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.83'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.2ppm, purge 8gal Start Time 14:06

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
14:08	6.94	19.09	0.470	4.37	0.0	-85	4.98
14:13	6.45	18.76	0.465	1.65	0.0	-85	4.98
14:18	6.38	18.30	0.465	2.82	0.0	-85	4.97
14:23	6.29	18.35	0.488	1.22	0.0	-87	4.97
14:28	6.29	18.29	0.512	0.96	0.0	-91	4.98
14:33	6.29	18.45	0.517	0.84	0.0	-95	4.98
14:38	6.33	18.49	0.513	0.80	0.0	-99	4.98
14:43	6.34	18.44	0.514	0.78	0.0	-103	4.99

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-07-16S Date: 9/30/09

Well Depth: 24.45' Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 7.66'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.7L/min

Other Info.: PID = 0.0 Start Time 10:34

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
10:37	6.49	19.22	2.34	0.0	210.0	-83	7.76
10:42	6.47	18.94	2.33	0.0	381.0	-100	7.78
10:47	6.47	18.86	2.29	0.0	206.0	-108	7.82
10:52	6.47	18.82	2.26	0.0	164.0	-114	7.84
10:57	6.46	18.81	2.23	0.0	209.0	-118	7.87
11:02	6.48	18.77	2.19	0.0	363.0	-122	7.89
11:07	6.48	18.74	2.17	0.0	325.0	-126	7.94
11:12	6.48	18.85	2.18	0.0	303.0	-127	7.98

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-07-17D Date: 9/30/09

Well Depth: Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level:

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.7L/min

Other Info.: Start Time

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
11:32	6.57	19.06	2.57	0.0	106.0	-106	8.16
11:37	6.47	18.62	4.52	0.0	143.0	-112	8.21
11:42	6.39	18.55	16.9	0.0	180.0.	-142	8.23
11:47	6.40	18.45	17.8	0.0	149.0	-161	8.25
11:52	6.41	18.50	17.6	0.0	158.0	-166	8.25
11:57	6.42	18.53	17.2	0.0	157.0	-172	8.27

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-18S Date: 9/11/09

Well Depth: 15.24' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.31'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.9L/min

Other Info.: PID = 0.0, purged 7 gal Start Time 10:38

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
10:38	6.31	19.64	2.35	0.40	241.0	-118	6.37
10:43	6.31	19.56	2.38	0.26	71.2	-126	6.36
10:48	6.32	19.53	2.39	0.39	53.5	-132	6.35
10:53	6.31	19.53	2.40	1.87	17.5	-134	6.34
10:58	6.32	19.51	2.42	10.50	10.9	-137	6.33
11:03	6.32	19.46	2.43	11.48	13.3	-138	6.32
11:08	6.33	19.46	2.43	11.73	13.5	-140	6.32
11:13	6.34	19.47	2.43	12.06	9.8	-141	

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-19D Date: 9/11/09

Well Depth: 35.32' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.33'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.0, purged 7 gal Start Time 9:45

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
9:45	6.05	17.16	1.52	0.37	123.0	-98	6.32
9:50	6.13	17.03	1.57	0.20	153.0	-110	6.32
9:55	6.20	16.97	1.62	0.06	153.0	-121	6.32
10:00	6.25	16.92	1.64	0.02	160.0	-127	6.31
10:05	6.26	16.90	1.65	0.00	124.0	-130	6.30
10:10	6.29	16.90	1.65	0.00	132.0	-133	6.29
10:15	6.30	16.85	1.65	0.00	225.0	-136	6.28
10:20	6.29	16.83	1.66	0.00	247.0	-137	6.27

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-20S Date: 9/11/09

Well Depth: 20.55' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.68'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.9L/min

Other Info.: PID = 0.0 Start Time 12:10

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
12:10	6.22	18.71	2.13	1.93	0.0	-106	5.78
12:15	6.19	18.58	2.15	3.54	0.0	-120	5.77
12:20	6.18	18.53	2.15	6.16	0.0	-132	5.75
12:25	6.20	18.54	2.15	12.45	0.0	-137	5.74
12:30	6.19	18.54	2.14	19.18	2.0	-144	5.72
12:35	6.20	18.60	2.14	19.65	0.0	-147	5.71
12:40	6.19	18.60	2.13	19.72	0.0	-151	5.71

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-21D Date: 9/10/09

Well Depth: 34.35' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.71'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.9L/min

Other Info.: PID = 0.0 Start Time 11:39

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
14:40	6.74	19.13	1.21	4.91	156.0	-121	5.75
14:45	6.30	18.48	1.24	0.60	0.0	-136	5.77
14:50	6.27	18.40	1.23	0.52	0.0	-139	5.79
14:55	6.27	18.34	1.22	0.47	0.0	-142	5.82
15:00	6.27	18.31	1.21	0.46	0.0	-145	5.83
15:05	6.26	18.29	1.21	0.43	0.0	-146	5.85

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-22S Date: 9/10/09

Well Depth: 20.56' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.07'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.275L/min (.8L/min @ 13:50

Other Info.: PID = 0.0 Start Time 13:38

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
13:40	6.44	19.04	2.62	5.66	0.0	-114	5.12
13:45	6.36	18.72	2.52	3.01	0.0	-141	5.13
13:50	6.34	19.18	2.49	1.00	0.0	-162	5.19
13:55	6.37	17.97	2.49	0.58	0.0	-168	5.22
14:00	6.36	17.70	2.47	0.50	0.0	-173	5.27
14:05	6.37	17.64	2.55	0.51	0.0	-175	5.29
14:10	6.38	17.62	2.38	0.48	0.0	-176	5.31
14:15	6.38	17.60	2.43	0.45	0.0	-180	5.34
14:20	6.39	17.59	2.43	0.45	0.0	-182	5.37

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-23D Date: 9/10/09

Well Depth: 34.84' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.59'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.9L/min (.8L/min @ 10:58)

Other Info.: PID = 0.0, well near canal (tidal influenc Start Time 10:36

Purged 10 gal, DUP taken

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
10:40	6.61	18.00	1.78	0.95	173.0	-93	5.57
10:45	6.31	17.71	1.96	0.63	81.6	-100	5.53
10:50	6.22	17.54	2.22	1.76	100.0	-104	5.49
10:55	6.22	17.47	2.57	16.49	116.0	-107	5.43
11:00	6.25	17.58	2.44	16.80	120.0	-110	5.39
11:05	6.24	17.56	2.47	14.86	159.0	-112	5.35
11:10	6.26	17.53	2.48	13.10	180.0	-114	5.31
11:15	6.25	17.68	2.44	7.73	63.8	-113	5.28
11:20	6.25	17.56	2.38	3.23	72.2	-114	5.26
11:25	6.26	17.55	2.36	1.88	86.5	-115	5.23
11:30	6.25	17.61	2.34	1.91	81.4	-116	5.21
11:35	6.24	17.60	2.35	1.84	80.7	-116	5.19

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-24S Date: 9/9/09

Well Depth: 20.01' Screen length: 10' Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.03'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.0, (Well adjacent to canal) Start Time 10:52

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
10:55	6.44	18.25	7.55	1.43	86.7	-125	4.02
11:00	6.49	17.92	7.38	0.69	0.0	-148	3.99
11:05	6.50	17.86	7.09	0.56	0.0	-158	3.97
11:10	6.51	17.86	6.92	0.49	0.0	-164	3.96
11:15	6.52	17.83	6.76	0.44	0.0	-170	3.94
11:20	6.53	17.82	6.65	0.43	0.0	-176	3.93
11:25	6.52	17.80	6.57	0.41	0.0	-181	3.93

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-25D Date: 9/9/09

Well Depth: 35.82' Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level:

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.0ppm, (Well adjacent to canal) Start Time 11:49

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
11:50	6.57	17.89	7.72	1.22	101.0	-107	3.77
11:55	6.42	17.59	8.01	0.65	130.0	-115	3.77
12:00	6.40	17.52	8.14	0.46	133.0	-121	3.77
12:05	6.40	17.47	8.22	0.33	166.0	-125	3.79
12:10	6.41	17.41	8.21	0.23	206.0	-128	3.80
12:15	6.42	17.38	8.17	0.17	213.0	-131	3.82
12:20	6.42	17.41	8.17	0.15	184.0	-133	3.83
12:25	6.42	17.40	8.14	0.15	72.8	-134	3.85
12:30	6.40	17.38	8.13	0.09	217.0	-136	3.88
12:35	6.43	17.31	8.14	0.05	113.0	-138	3.91
12:40	6.44	17.33	8.05	0.01	146.0	-140	3.92
12:45	6.43	17.36	8.00	0.01	25.4	-141	3.94
12:50	6.42	17.38	7.98	0.01	48.8	-142	3.95

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-09-26D Date: 9/8/09

Well Depth: 34.52' Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.88'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.2ppm, purged 15gal Start Time 11:17

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
11:20	5.9	17.91	0.789	2.13	72.1	-45	5.88
11:25	5.86	17.66	0.795	1.50	81.9	-68	5.88
11:30	6.00	17.91	0.991	1.11	105.0	-89	5.88
11:35	6.07	18.41	0.97	0.99	178.0	-98	5.87
11:40	6.13	18.52	0.99	0.88	288.0	-103	5.88
11:45	6.17	18.49	0.98	1.03	284.0	-107	5.88
11:50	6.19	18.41	1.00	3.96	379.0	-109	5.88
11:55	6.22	17.86	1.03	4.51	660.0	-113	5.88
12:00	6.23	17.74	1.05	1.62	585.0	-115	5.88
12:05	6.23	17.72	1.04	0.89	735.0	-116	5.88
12:10	6.24	17.71	1.03	0.16	912.0	-117	5.88
12:15	6.24	17.71	1.03	0.10	355.0	-118	5.88
12:20	6.25	17.72	1.04	0.09	547.0	-119	5.88
12:25	6.25	17.70	1.02	0.08	702.0	-120	5.92
12:30	6.26	17.71	1.01	0.08	701.0	-121	5.92
12:35	6.26	17.77	1.01	0.07	711.0	-122	5.92

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-97-2S Date: 9/9/09

Well Depth: 24.02' Screen length: N/A Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.92'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.75L/min

Other Info.: PID = 0.0, purge 12gal Start Time 8:59

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
9:00	5.87	19.15	1.36	1.14	454.0	-37	6.93
9:05	6.03	18.61	1.33	0.43	233.0	-72	6.93
9:10	6.09	18.27	1.35	0.25	170.0	-89	6.93
9:15	6.14	18.23	1.34	0.19	280.0	-98	6.92
9:20	6.17	18.16	1.37	0.85	254.0	-104	6.92
9:25	6.19	18.22	1.37	2.83	259.0	-107	6.91
9:30	Break to clear sensor						
9:35	6.26	18.23	1.36	13.55	52.0	-108	6.92
9:40	6.25	18.25	1.36	13.87	345.0	-111	6.91
9:45	6.26	18.27	1.35	12.30	234.0	-113	6.91
9:50	6.26	18.29	1.35	11.99	259.0	-115	6.90
9:55	6.27	18.30	1.37	1.21	203.0	-115	6.88
10:00	6.27	18.29	1.35	1.11	205.0	-116	6.88
10:05	6.28	18.31	1.33	1.07	234.0	-117	6.88

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-98-10D Date: 9/8/09

Well Depth: 36.97' Screen length: Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.89'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.85L/min

Other Info.: PID = 0.0, purged 5 gal Start Time 14:09

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
14:10	6.34	18.79	1.39	5.49	124	-62	6.94
14:15	6.21	18.63	1.33	3.54	119	-78	6.93
14:20	6.23	18.32	1.32	2.90	54.3	-85	6.94
14:25	6.25	18.50	1.34	1.46	122	-90	6.94
14:30	6.27	18.43	1.36	0.49	57	-94	6.94
14:35	6.29	18.40	1.36	0.27	69.9	-97	6.94
14:40	6.31	18.43	1.35	0.20	85.3	-101	6.94
14:45	6.32	18.40	1.34	0.22	118.0	-103	6.95
14:50	6.33	18.38	1.36	0.24	101.0	-105	6.95

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-97-1S Date: 9/1/09

Well Depth: 24.13' Screen length: N/A Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.81'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.8L/min

Other Info.: Total purged: 5 gal Start Time 15:26

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
15:26	6.32	18.75	1.13	0.59	201.0	-98	5.83
15:31	6.27	18.52	1.12	0.10	238.0	-102	5.81
15:36	6.28	18.26	1.13	0.01	155.0	-107	5.81
15:41	6.29	18.38	1.11	0.00	172.0	-111	5.80
15:46	6.30	18.30	1.09	8.21	193.0	-113	5.79
15:51	6.34	18.25	1.12	10.34	142.0	-111	5.79
15:56	6.33	18.21	1.11	12.82	117.0	-112	5.79
16:01	6.33	18.16	1.12	13.48	114.0	-114	5.78
16:06	6.33	18.11	1.11	13.54	116.0	-116	5.78
16:11	6.34	18.15	1.09	13.21	127.0	-118	5.78

LOW-FLOW SAMPLING LOG

Project No.: 11130272 Site: Columbia Cement Well No.: MW-98-9D Date: 9/1/09

Well Depth: 36.63' Screen length: N/A Well Dia.: 2" Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.82'

Measuring Point: TOC Sampling Personnel: MD+JC Pumping rate: 0.9L/min

Other Info.: Total purged: 9gal Start Time 13:45

Time	pH (s.u.)	Temp (C)	Cond. (mS/cm)	Diss. O_2 (mg/l)	Turbidity (NTU)	Redox Potential (mV)	Water Level
13:45	5.86	19.63	0.997	2.51	188.0	-19	5.83
13:50	6.16	18.48	1.08	0.40	116.0	-75	5.86
13:55	6.19	18.20	1.11	0.04	103.0	-93	5.84
14:00	6.23	18.01	1.17	0.00	125.0	-104	5.83
14:05	6.27	17.95	1.17	0.00	103.0	-112	5.84
14:10	6.33	18.10	1.20	0.00	160.0	-118	5.84
14:15	6.34	17.88	1.19	0.00	358.0	-121	5.84
14:20	6.35	17.82	1.18	0.00	308.0	-126	5.85
14:25	6.36	17.80	1.16	0.00	337.0	-128	5.84

SEPTEMBER - OCTOBER 2010

LOW-FLOW SAMPLING LOG

Project No.: 11130273 Site: Columbia Cement Well No.: MW-97-1S Date: 9/24/10

Well Depth: Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.45'

Measuring Point: TOC Sampling Personnel H. Becker, N. Olivo Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
10:31	Start purging well						5.45	
10:35	7.22	1.20	11.2	3.82	19.60	-64	5.45	240
10:40	7.31	1.18	32.5	3.20	19.42	-76	5.45	320
10:45	7.32	1.18	40.6	2.20	19.40	-80	5.40	300
10:50	7.33	1.17	41.5	2.13	19.26	-83	5.40	240
10:55	7.34	1.16	72.0	2.09	19.33	-85	5.40	280
11:00	7.35	1.16	107	2.07	19.33	-87	5.45	280
11:05	7.30	1.19	11.2	2.12	19.36	-78	5.42	280
11:10	7.32	1.18	30.3	2.09	19.34	-82	5.42	280
11:15	7.34	1.17	65.8	2.08	19.32	-85	5.42	300
11:20	7.35	1.17	71.5	2.10	19.32	-87	5.42	300
11:25	7.29	0.996	5.4	2.12	19.33	-78	5.42	280
11:30	7.32	0.996	8.5	2.08	19.31	-82	5.44	280
11:35	7.34	0.993	9.8	2.07	19.31	-85	5.44	280
11:38	Sampling for VOAs, VOA RSK175, Sulfate, Sulfide, TOC							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130273 Site: Columbia Cement Well No.: MW-98-9D Date: 9/24/10

Well Depth: Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.42'

Measuring Point: TOC Sampling Personnel H. Becker, N. Olivo Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
9:25	Start purging well							
9:30	7.27	1.23	8.4	4.79	19.08	-64	5.55	220
9:35	7.27	1.20	11.0	2.40	19.38	-77		220
9:40	7.36	1.20	7.6	2.23	19.07	-86	5.42	280
9:45	7.36	1.19	11.2	5.21	19.02	-88	5.41	280
9:50	7.40	1.19	7.8	2.16	18.92	-93	5.41	280
9:55	7.41	1.19	16.6	2.15	18.91	-95	5.41	300
10:00	7.42	1.18	22.0	2.14	19.06	-96	5.41	240
10:05	7.44	1.18	15.2	2.13	19.04	-99	5.41	240
10:10	7.44	1.17	15.8	2.12	19.00	-99	5.41	240
10:15	7.46	1.17	16.5	2.11	19.00	-101	5.40	260
10:20	7.45	1.17	19.9	2.11	18.97	-102	5.40	260
10:22	Sampling for VOAs, VOA RSK175, Sulfate, Sulfide, TOC							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130273 Site: Columbia Cement Well No.: MW-97-2S Date: 9/15/10

Well Depth: 23.87' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.58'

Measuring Point: TOC Sampling Personnel B. Lavigne Pumping rate:

Other Info.: Well headspace = 0.1 ppm, tubing 5' from bottom, post sample reading taken at 15:40

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
14:40	Start purging well							
14:40	6.54	1.38	56.1	3.09	20.51	-56	6.58	
14:50	6.40	1.36	67.4	3.75	20.55	-54	6.58	260
14:55	6.45	1.35	99.6	3.35	21.17	-62	6.58	
15:00	6.68	1.34	116.0	3.20	20.64	-74	6.58	260
15:05	6.73	1.33	123.0	2.81	20.69	-78	6.58	
15:10	6.75	1.32	126.0	1.77	20.46	-80	6.58	260
15:15	6.75	1.28	131.0	1.63	20.11	-81	6.58	
15:20	6.75	1.26	130.0	1.56	20.07	-82	6.58	260
15:25	6.76	1.25	128.0	1.51	20.00	-82	6.58	260
15:30	Sampling for VOAs and Sulfate							
15:40	6.90	1.24	81.9	7.72	20.17	-59	6.58	
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130273 Site: Columbia Cement Well No.: MW-98-10D Date: 9/15/10

Well Depth: 34.85' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.86'

Measuring Point: TOC Sampling Personnel B. Lavigne Pumping rate:

Other Info.: Well headspace = 0.1 ppm, tubing 5' from bottom, post sample reading taken at 14:00, Duplicate sample taken

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
13:00	Start purging well							
13:00	7.15	1.36	11.7	1.36	19.57	-108	6.86	
13:15	7.00	1.30	65.2	0.76	18.89	-104		350
13:20	7.00	1.30	43.7	0.63	18.87	-104	6.86	350
13:25	7.00	1.29	45.4	0.59	18.84	-105	6.86	
13:30	7.00	1.29	47.0	0.57	18.83	-106	6.86	350
13:35	6.97	1.28	51.3	0.57	18.83	-105	6.86	
13:40	6.98	1.27	49.6	0.59	18.84	-105	6.86	350
13:45	Sampling for VOAs and Sulfate (Duplicate taken, DUP-9-15-10)							
14:00	6.95	1.33	5.1	2.76	19.78	-74	6.84	
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-05-14S Date: 10/14/10

Well Depth: 24.70' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.68'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 1.2 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
8:43	Start purging well							
8:45	6.75	14.3	3.8	0.00	20.82	-132	5.10	
8:50	6.77	14.4	2.8	0.00	20.80	-146	4.85	200
8:55	6.77	14.3	2.5	0.00	21.21	-167		
9:00	6.75	14.4	1.7	0.00	21.15	-180		280
9:05	6.75	14.1	2.9	0.00	21.41	-184	4.97	
9:10	6.74	13.9	1.5	0.00	21.30	-188		
9:15	6.74	13.7	1.6	0.00	21.44	-188		280
9:20	6.73	13.6	1.1	0.00	21.16	-188	4.98	
9:25	6.73	13.3	1.2	0.10	21.18	-187		
9:30	6.74	13.2	1.2	0.11	21.22	-187		
9:35	6.73	13.2	1.3	0.12	20.78	-190	5.05	
9:37	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-05-15D Date: 10/14/10

Well Depth: 37.85' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.62'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.7 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
7:43	Start purging well							
7:45	6.87	0.250	22.6	0.00	17.87	-113	4.73	480
7:50	6.91	0.276	26.0	0.00	18.34	-123		
7:55	6.93	0.286	27.2	0.00	18.32	-125		280
8:00	6.91	0.313	31.3	0.00	18.18	-128	4.72	
8:05	6.90	0.333	21.1	0.00	18.17	-129		
8:10	6.89	0.347	18.9	0.00	18.01	-129		280
8:15	6.89	0.365	20.2	0.00	17.93	-130		
8:20	6.88	0.355	22.6	0.00	18.08	-131		
8:25	6.87	0.376	24.0	0.00	17.94	-132	4.72	
8:30	6.87	0.383	22.8	0.00	18.01	-132		
8:35	6.87	0.393	23.3	0.00	18.09	-134	4.72	
8:37	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-07-16S Date: 10/20/10

Well Depth: 24.15' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.45'

Measuring Point: TOC Sampling Personnel M. Becker, N. Olivo Pumping rate: 200 mL/min

Other Info.: Well headspace = 3.3 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
9:35	Start purging well							
9:42	7.17	2.23	58.2	0.25	17.11	-131		
9:47	7.21	2.22	52.7	0.00	17.17	-126		
9:51	7.23	2.22	41.4	0.00	17.17	-125	6.69	
9:55	7.25	2.22	34.8	0.00	17.18	-126	6.74	
10:00	7.26	2.22	36.7	0.00	17.20	-127		
10:05	7..27	2.21	35.8	0.00	17.22	-129		
10:10	7.28	2.19	38.7	0.00	17.21	-129		
10:15	7.29	2.19	51.4	0.00	17.21	-129	6.88	
10:20	7.29	2.16	59.2	0.00	17.22	-130		
10:25	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-07-17D Date: 10/20/10

Well Depth: 35.45' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 7.05'

Measuring Point: TOC Sampling Personnel M. Becker, N. Olivo Pumping rate: 250 mL/min

Other Info.: Well headspace = 3.3 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
10:30	Start purging well							
10:40	7.17	1.98	31.3	4.50	17.66	-91	7.15	
10:45	7.19	1.97	21.6	4.20	17.51	-92	7.19	
10:50	7.23	1.95	12.7	3.55	17.36	-101		
10:55	7.23	1.94	20.2	2.48	17.25	-99		
11:00	7.21	1.95	363.0	0.00	17.21	-100	7.29	
11:05	7.23	1.95	205.0	0.00	17.25	-100	7.38	
11:10	7.25	1.94	246.0	0.00	17.25	-100		
11:13	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-18S Date: 10/13/10

Well Depth: 14.98' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.35'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
7:50	Start purging well							
7:58	6.73	2.16	6.4	0.00	20.57	-134	6.45	600
8:03	6.75	2.16	6.0	0.00	20.38	-136		560
8:08	6.75	2.15	3.1	0.00	19.93	-138		400
8:13	6.76	2.14	2.4	0.00	19.80	-139	6.40	300
8:18	6.76	2.13	5.2	0.00	19.57	-139	6.38	
8:23	6.77	2.12	1.2	0.00	19.60	-139	6.38	300
8:28	6.77	2.12	3.1	0.00	19.83	-140		
8:33	6.78	2.12	3.0	0.00	19.77	-141	6.38	300
8:35	Sampling for VOAs and Sulfate						6.31	
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-19D Date: 10/13/10

Well Depth: 35.00' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.35

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
8:47	Start purging well							
8:50	6.67	2.42	5.6	0.00	17.78	-105	6.35	280
8:55	6.70	2.32	6.4	0.00	17.93	-116	6.35	
9:00	6.72	2.32	8.1	0.00	17.75	-119	6.36	360
9:05	6.73	2.34	7.7	0.00	17.84	-122		
9:10	6.73	2.36	9.2	0.00	17.76	-125	6.33	280
9:15	6.73	2.38	10.6	0.00	17.75	-127	6.34	280
9:20	6.74	2.39	11.9	0.00	17.66	-127	6.34	
9:25	6.73	2.39	13.9	0.00	17.72	-128	6.31	280
9:30	6.75	2.42	15.1	0.00	17.72	-129	6.32	280
9:35	6.75	2.41	16.5	0.00	17.69	-130	6.32	
9:37	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-20S Date: 10/20/10

Well Depth: 20.22 Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.74'

Measuring Point: TOC Sampling Personnel J. Crespo, N. Olivo Pumping rate: 200 mL/min

Other Info.: Well headspace = 3.3 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
12:30	Start purging well							
12:35	7.10	1.98	99.2	0.75	20.58	-139	7.09	
12:40	7.25	1.99	57.3	0.00	20.77	-176	7.12	
12:45	7.27	1.98	27.3	0.00	20.91	-180		
12:50	7.28	1.97	13.8	0.00	21.05	-177		
12:55	7.28	1.97	7.4	0.00	20.95	-175	7.12	
13:00	7.29	1.98	7.6	0.00	20.95	-178	7.13	
13:05	7.30	1.97	5.6	0.00	20.95	-175		
13:10	7.30	1.97	2.8	0.00	21.00	-177	7.15	
13:12	Sampling for VOAs and Sulfate						7.25	
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-21D Date: 10/20/10

Well Depth: 34.30' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.83'

Measuring Point: TOC Sampling Personnel J. Crespo, N. Olivo Pumping rate: 200 mL/min

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
11:40	Start purging well						6.92	
11:45	6.99	1.13	40.2	0.00	18.33	-86		
11:50	7.07	1.12	67.6	0.00	18.31	-95	6.94	
11:55	7.06	1.11	74.2	0.00	19.04	-93		
12:00	7.06	1.11	63.0	0.00	19.16	-95	6.98	
12:05	7.06	1.12	63.2	0.00	18.98	-96		
12:10	7.06	1.13	70.5	0.00	18.94	-96		
12:15	7.06	1.12	73.8	0.00	18.84	-97	7.05	
12:17	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-22S Date: 10/14/10

Well Depth: 20.20' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.60'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
10:00	Start purging well							
10:08	6.73	2.33	12.7	0.00	18.37	-210	6.57	360
10:13	6.78	2.31	6.0	0.00	18.62	-202		
10:18	6.80	2.29	5.3	0.00	18.60	-202	6.55	
10:23	6.80	2.26	4.0	0.00	18.50	-208		280
10:28	6.80	2.23	4.1	0.00	18.60	-205		
10:33	6.80	2.19	4.0	0.00	18.60	-220	6.32	280
10:38	6.79	2.17	4.0	0.00	18.59	-211		
10:43	6.78	2.15	3.9	0.00	18.62	-215		
10:48	6.77	2.11	4.8	0.00	18.58	-226		
10:53	6.78	2.11	5.0	0.00	18.53	-224		
10:58	6.77	2.07	5.4	0.00	18.55	-215		
11:00	Sampling for VOAs and Sulfate (Duplicate collected from this well)							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-23D Date: 10/14/10

Well Depth: 34.45' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.85'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
11:08	Start purging well						6.00	
11:11	6.59	1.31	9.2	0.00	19.08	-135		280
11:16	6.58	1.30	3.9	0.00	18.88	-130		
11:21	6.62	1.28	4.5	0.00	18.74	-135		
11:26	6.63	1.28	5.0	0.00	18.52	-137	5.85	280
11:31	6.64	1.27	6.0	0.00	18.44	-136		
11:36	6.63	1.24	6.4	0.00	18.33	-143		
11:41	6.63	1.24	6.0	0.00	18.35	-142		
11:46	6.63	1.23	6.4	0.00	18.38	-142		
11:51	6.63	1.21	9.4	0.00	18.33	-141	5.68	280
11:56	6.63	1.21	9.9	0.00	18.34	-136		
11:58	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-24S Date: 10/13/10

Well Depth: 19.70' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.46'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.0 ppm, tubing 5' from bottom, anaerobic odor observed

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
10:03	Start purging well							
10:05	6.84	11.6	8.0	0.00	18.35	-211	4.40	400
10:10	6.87	11.8	6.5	0.00	18.27	-242		
10:15	6.88	11.8	3.9	0.00	18.09	-266	4.44	280
10:20	6.88	11.5	4.5	0.00	17.91	-281		
10:25	6.88	11.4	4.6	0.00	17.94	-287	4.31	280
10:30	6.88	11.2	4.8	0.00	17.99	-293		
10:35	6.87	11.0	4.8	0.00	18.03	-298	4.30	360
10:40	6.87	10.9	5.4	0.00	17.95	-303	4.30	
10:45	6.87	10.8	7.8	0.00	18.06	-309	4.30	
10:50	6.86	10.7	4.6	0.00	17.94	-315	4.15	
10:52	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-25D Date: 10/13/10

Well Depth: 35.50' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 3.99'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.2 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
11:33	Start purging well							480
11:35	6.76	5.13	14.5	4.48	17.10	-148	3.45	
11:40	6.81	5.28	6.4	3.14	17.20	-164	3.71	320
11:45	6.80	5.41	11.0	2.20	17.24	-169	3.70	
11:50	6.80	5.43	17.1	0.00	17.17	-172		360
11:55	6.80	5.41	19.4	0.00	17.16	-173		
12:00	6.80	5.38	54.6	0.00	17.12	-174	3.65	
12:05	6.79	5.39	67.0	0.00	17.12	-174	3.62	360
12:10	6.79	5.39	85.0	0.00	17.07	-175		
12:15	6.79	5.33	84.3	0.00	17.06	-175		
12:20	6.79	5.30	91.0	0.00	17.15	-174	3.56	360
12:25	6.78	5.23	94.9	0.00	17.14	-175	3.55	
12:27	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

LOW-FLOW SAMPLING LOG

Project No.: 11130276 Site: Columbia Cement Well No.: MW-09-26D Date: 10/13/10

Well Depth: 34.50' Screen length: 10' Well Dia.: Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.36'

Measuring Point: TOC Sampling Personnel N.Olivo, S. Libert Pumping rate:

Other Info.: Well headspace = 0.1 ppm, tubing 5' from bottom

Time	pH (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O_2 (mg/l)	Temp (C)	ORP (mV)	Water Level (feet)	Flow Rate (mL/min)
13:12	Start purging well							
13:15	6.66	0.413	41.8	0.00	17.22	-108	5.37	800
13:20	6.65	0.420	47.7	0.00	17.48	-109		
13:25	6.65	0.458	98.6	0.00	17.65	-112		240
13:30	6.67	0.524	61.4	0.00	17.65	-114		
13:35	6.67	0.543	77.4	0.00	17.66	-115		
13:40	6.67	0.561	83.0	0.00	17.60	-117	5.33	240
13:45	6.67	0.575	90.5	0.00	17.61	-118		
13:50	6.67	0.587	98.2	0.00	17.63	-118		
13:55	6.68	0.600	103.0	0.00	17.67	-119	5.34	
13:57	Sampling for VOAs and Sulfate							
Sampling Time								
Purge Volume								

OCTOBER 2011

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-14S Date: 10/11/2011

Well Depth: 24.80 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.20 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 230 mL/min

Other Info.: PID Headspace = 4.3 ppm; Purge water has "sewage" odor and is dark in color.

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:08	Begin Purging						
8:10	4.75	11.3	66.6	7.39	20.62	-194	
8:15	6.55	12.1	28.4	5.18	20.54	-258	
8:20	6.55	12	19.4	5.12	20.49	-268	
8:25	6.54	11.8	13.5	0.66	20.35	-256	
8:30	6.53	11.9	10.1	0.55	20.28	-251	
8:35	6.52	11.8	8.5	0.53	20.31	-244	
8:40	6.51	11.6	5.1	0.53	20.27	-241	
8:45	6.5	11.6	4.7	0.5	20.2	-236	
8:50	6.49	11.5	4.3	0.51	20.13	-234	

Sample Time: 8:55

Purge Volume: 3-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-15D Date: 10/11/2011

Well Depth: 38.04 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.23 ft.

Measuring Point: TOC. Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:10	5.31	10.1	13	6.58	21.07	5	4.73
8:15	5.33	11	2.8	5.69	19.97	-14	
8:20	5.34	11	7.2	5.3	19.79	-19	
8:25	5.39	10.8	9.2	1.75	19.61	-26	
8:30	5.41	10.7	5.8	1.48	19.5	-31	
8:35	5.42	10.6	6.7	1.22	19.45	-35	
8:40	5.46	10.4	3.9	0.97	19.34	-41	4.72
8:45	5.47	10.3	2.2	0.89	19.31	-44	
8:50	5.48	10.3	0.5	0.74	19.23	-48	
8:55	5.49	10.3	0.2	0.71	19.22	-50	
9:00	5.49	10.3	0	0.66	19.22	-52	

Sample Time: 9:00

Purge Volume: 4.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-07-16S Date: 10/20/2011

Well Depth: 24.0 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.40 ft.

Measuring Point: TOC Sampling Personnel: J. Crespo, M. Becker Pumping rate: mL/min

Other Info.: PID Headspace = 1.3 ppm; DUP102011 collected.

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
14:26	8.79	1.59	40.8	1.01	18.2	-56	
14:31	9.27	1.56	29.6	0	17.7	-75	
14:36	9.35	1.56	20.3	0	17.7	-80	
14:41	9.4	1.56	18.4	0	17.7	-82	
14:46	9.45	1.57	14.5	0	17.7	-85	
14:51	9.5	1.57	12.8	0	17.7	-87	

Sample Time: 14:55

Purge Volume: 2.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-07-17D Date: 10/20/2011

Well Depth: 35.15 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.50 ft.

Measuring Point: TOC Sampling Personnel: J. Crespo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 1.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
14:25	6.54	1.23	13.4	9.29	17.84	-154	
14:30	6.55	1.25	9	7.34	17.89	-174	
14:35	6.44	1.49	4.4	5.82	17.78	-147	
14:40	6.41	1.59	4.9	0.71	17.74	-136	
14:45	6.39	1.81	4.8	0.57	17.74	-131	
14:50	6.36	2.14	3.8	0.54	17.7	-129	
14:55	6.38	2.35	1.9	0.5	17.67	-128	
15:00	6.37	2.43	1.1	0.49	17.63	-124	
15:05	6.37	2.46	0.5	0.47	17.62	-124	

Sample Time: 17:10

Purge Volume:

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-18S Date: 10/10/2011

Well Depth: 14.82 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.42 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
9:46	6.51	2.17	5.2	3.9	20.9	-84	
9:50	6.52	2.13	0	2.58	20.96	-98	
9:55	6.52	2.12	0	2.07	21.01	-102	
10:00	6.52	2.11	0	1.75	20.96	-106	
10:05	6.52	2.09	0	1.53	21.01	-110	6.43
10:10	6.53	2.08	0	1.32	21.07	-114	
10:15	6.53	2.08	0	1.19	21.14	-116	
10:20	6.53	2.07	0	1.26	21.17	-118	
10:25	6.53	2.07	0	1.18	21.21	-120	

Sample Time: 10:25

Purge Volume: 4-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-19D Date: 10/10/2011

Well Depth: 35.18 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.35 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:24	6.41	1.5	0	3.27	19.1	-125	
8:30	6.48	1.48	0	2.68	19.09	-130	
8:35	6.44	1.7	0	2.16	18.91	-129	
8:40	6.39	2.17	0	1.77	18.78	-123	6.37
8:45	6.41	2.36	0	1.54	18.75	-124	
8:50	6.41	2.37	0	1.49	18.81	-124	
8:55	6.38	2.38	0	1.39	18.8	-127	
9:00	6.39	2.39	0.9	1.3	18.84	-129	
9:05	6.39	2.4	0.8	1.19	18.86	-130	6.38
9:10	6.39	2.41	3.2	1.07	18.81	-131	
9:15	6.39	2.41	4.2	1.01	18.88	-132	
9:20	6.39	2.42	3.4	0.98	18.86	-132	6.38

Sample Time: 9:20

Purge Volume: 4.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-20S Date: 10/20/2011

Well Depth: 20.10 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.50 ft.

Measuring Point: TOC Sampling Personnel: J. Crespo, M. Becker Pumping rate: mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
15:35	Begin Purging						
15:39	8.98	1.89	29	0	19.6	-48	
15:42	9.03	1.89	19.5	0.1	19.4	-52	
15:45	9.06	1.89	13.3	0.27	19.4	-55	
15:48	9.1	1.88	11.6	0.39	19.3	-58	
15:51	9.12	1.88	11.7	0.48	19.3	-60	
15:54	9.14	1.88	11.3	0.53	19.3	-62	
15:57	9.15	1.88	11.2	0.54	19.3	-63	

Sample Time: 16:00

Purge Volume:

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-21D Date: 10/20/2011

Well Depth: 33.95 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.45 ft.

Measuring Point: TOC Sampling Personnel: J. Crespo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.1 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
15:36	6.44	1.03	23.7	2.84	19.43	-72	
15:41	6.5	1.16	17.6	0.94	18.81	-92	
15:46	6.5	1.14	12.6	0.65	18.77	-101	
15:51	6.48	1.11	5.2	0.56	18.74	-104	
15:56	6.46	1.1	3.9	0.51	18.68	-107	
16:01	6.44	1.09	5	0.49	18.8	-108	

Sample Time: 16:05

Purge Volume:

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-15D Date: 10/11/2011

Well Depth: 20.45 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.59 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
12:30	6.3	2.46	3	2.49	21.3	-63	
12:35	6.32	2.58	0	1.61	20.18	-81	
12:40	6.32	2.61	0	1.33	20.16	-89	
12:45	6.32	2.61	0	1.11	20.01	-98	
12:50	6.32	2.56	0	0.96	19.81	-104	
12:55	6.32	2.51	0	0.79	19.71	-111	
13:00	6.33	2.48	0	0.73	19.76	-116	
13:05	6.32	2.46	0	0.64	19.72	-120	
13:10	6.32	2.43	0	0.6	19.71	-124	
13:15	6.32	2.39	0	0.59	19.68	-129	

Sample Time: 13:15

Purge Volume: 4.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-23D Date: 10/11/2011

Well Depth: 34.65 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.85 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 240 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
12:21	Begin Purging						
12:22	6.84	1.14	0.7	3.38	20.34	-72	
12:27	6.38	1.38	0	0.97	19.84	-86	
12:32	6.37	1.39	0	1.62	19.2	-84	
12:37	6.36	1.38	2.7	1.45	19.16	-81	
12:42	6.36	1.41	6.5	1.47	19.32	-80	
12:47	6.35	1.35	5.1	1.32	18.91	-77	
12:52	6.34	1.34	0.3	1.27	18.82	-76	
12:57	6.33	1.33	0.1	1.09	18.85	-75	
13:02	6.33	1.34	0	1.01	18.86	-75	
13:07	6.33	1.34	0	0.93	18.88	-74	
13:12	6.32	1.33	0	0.85	18.88	-74	

Sample Time: 13:20

Purge Volume: 3-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-24S Date: 10/10/2011

Well Depth: 19.90 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.05 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
9:35	Begin Purging						
9:36	6.75	10.3	0.4	2.4	18.74	-135	
9:41	6.62	10.5	0	0.9	18.94	-244	
9:46	6.58	10.6	0	0.68	18.94	-287	
9:51	6.57	10.6	0	0.67	18.94	-292	
9:56	6.56	10.5	0	0.66	18.94	-292	
10:01	6.56	10.5	0	0.68	18.91	-292	
10:06	6.56	10.5	0	0.69	18.91	-292	

Sample Time: 10:15

Purge Volume:

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-25D Date: 10/10/2011

Well Depth: 35.65 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 3.90 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:19	Begin Purging						
8:21	6.01	1.8	5	1.54	18.52	35	
8:26	6.31	1.77	2.8	1.18	18.43	23	
8:31	6.33	1.85	1.9	1.03	18.18	22	
8:36	6.34	1.94	1.3	0.93	18.17	22	
8:41	6.33	2.13	2.5	0.9	18.15	22	
8:46	6.36	3.46	1.2	0.81	18.12	20	
8:51	6.4	4.57	2.2	0.79	18.01	18	
8:56	6.44	5.67	3.3	0.77	17.97	16	
9:01	6.46	5.93	3.1	0.67	17.79	-87	
9:06	6.47	6.01	1.9	0.51	17.76	-91	
9:11	6.47	6.15	1.7	0.47	17.73	-94	
9:16	6.47	6.15	1.1	0.44	17.66	-96	
9:21	6.48	6.17	0.5	0.4	17.65	-98	

Sample Time: 9:25

Purge Volume: 5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-26D Date: 10/11/2011

Well Depth: 34.32 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.63 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, J. Crespo Pumping rate: 240 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
9:42	Begin Purging						
9:44	6.7	0.408	0.5	2.68	18.3	-91	
9:49	6.46	0.448	1.5	1.21	18.11	-103	
9:54	6.32	0.496	1.2	0.82	17.89	-116	
9:59	6.38	0.645	3.6	0.77	18.09	-109	
10:04	6.37	0.642	0.7	0.72	18.61	-107	
10:09	6.41	0.704	3.2	0.77	18.07	-103	
10:14	6.41	0.722	4.2	0.71	17.84	-110	
10:19	6.41	0.719	3.3	0.65	17.75	-114	
10:24	6.4	0.717	0	0.59	17.68	-115	

Sample Time: 10:30

Purge Volume: 2.5-gallons

JANUARY 2012

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-14S Date: 1/12/12

Well Depth: 24.80 ft. bgs Screen length: 10 feet Well Dia.: 2 inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.06 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.8 ppm; Duplicate DUP011212 collected @ 09:30.

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
9:35	6.14	10.5	16.4	5.43	13.87	-120	
9:40	6.20	10.5	3.7	6.91	13.91	-160	
9:45	6.24	10.5	2.1	6.57	13.81	-175	
9:50	6.25	10.4	0.9	6.04	14.2	-190	
9:55	6.25	10.4	0.6	6.91	14.29	-190	
10:00	6.25	10.5	0.7	6.71	14.04	-200	
10:05	6.25	10.5	0	6.31	13.86	-209	4.85

Sample Time: 8:55 10:10

Purge Volume: 3-gallons 2 gal

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-15D Date: 1/12/12

Well Depth: 38.04 ft. bgs Screen length: 5-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.42 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
9:33	Start purging						
9:36	4.25	17.4	26.4	16.34	14.13	152	
9:39	4.26	17.4	23.4	2.91	14.28	162	
9:42	Change tubing						
9:45	4.30	17.4	17.5	1.81	14.12	127	
9:48	4.31	17.4	14.7	1.39	13.92	121	
9:51	4.32	17.3	12.1	1.17	13.72	116	
9:54	4.33	17.3	9	1.04	13.65	113	
9:57	4.33	17.2	7.3	0.95	13.65	111	
10:00	4.33	17.2	5.8	0.88	13.72	109	
10:03	4.34	17.1	4.8	0.85	13.65	108	
10:06	4.34	17.0	4.1	0.81	13.66	107	
10:09	4.36	17.0	3.4	0.81	13.72	108	
10:12	4.35	17.0	3.1	0.79	13.70	106	
10:15	Sample						

Sample Time: 10:15

Purge Volume: 2.9 gal

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-18S Date: 1/12/12

Well Depth: 15.1 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.66 ft.

Measuring Point: 10 ft. Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:10	Start						
8:15	6.34	2.76	6.1	2.13	14.43	0	
8:18	6.36	2.76	6.5	1.51	14.56	-22	
18:21	6.39	2.75	6.9	1.29	14.64	-31	
8:24	6.40	2.74	7.1	1.13	14.59	-38	
8:27	6.40	2.73	6.5	1.04	14.58	-41	
8:30	6.40	2.73	7.4	0.97	14.58	-43	
8:33	6.42	2.72	7.1	0.93	14.27	-45	
8:36	6.42	2.73	6.5	0.88	14.23	-46	
8:39	6.42	2.73	6.3	0.84	14.21	-48	
8:42	6.42	2.73	5.6	0.81	14.23	-49	
8:45	6.43	2.73	5.5	0.80	14.28	-49	
8:48	6.43	2.73	5.4	0.79	14.30	-50	
8:50	Sample						

Sample Time: 08:50

Purge Volume: 3-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-19D Date: 1/12/12

Well Depth: 35.18 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 6.R5 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
8:15	5.86	1.32	0.7	3.98	14.61	7	
8:20	5.99	1.32	66.8	0.99	14.99	-30	
8:25	5.97	1.39	86	0.82	14.95	-39	
8:30	5.95	1.5	26.3	0.77	14.8	-43	
8:35	6.02	1.35	5.8	0.71	14.37	-47	
8:40	6.07	1.26	11.4	1.16	13.04	-48	
8:45	6.09	1.23	8.9	1.7	13.02	-40	
8:50	6.06	1.26	7.2	1.56	13.24	-39	
8:55	6.07	1.25	5.5	1.44	13.32	-40	

Sample Time: 9:00

Purge Volume: 2.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-05-15D Date: 1/12/12

Well Depth: 20.2 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 4.85 ft.

Measuring Point: 15 ft. Sampling Personnel: N. Olivo, M. Becker Pumping rate: 300 mL/min

Other Info.: PID Headspace = 0.2 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
10:40	Start						
10:45	6.38	1.43	4.4	0.898	14.86	-51	
10:48	6.36	1.4	5.8	0.73	15.02	-52	
10:51	6.34	1.38	4.9	0.67	15.11	-54	
10:54	6.34	1.31	1.9	0.62	15.2	-55	
10:57	6.33	1.3	1.3	0.61	15.24	-56	
11:00	6.33	1.3	1.3	0.59	15.27	-57	
11:03	6.32	1.31	0.0	0.57	15.28	-58	
11:06	6.33	1.3	0.0	0.57	15.29	-59	
11:09	6.32	1.29	0.0	0.56	15.3	-59	5.10
11:10	Sample						

Sample Time: 11:10

Purge Volume: 2.5-gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-23D Date: 1/12/12

Well Depth: 34.65 ft. bgs Screen length: 10-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.85 ft.

Measuring Point: Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.0 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
10:40	6.76	1.55	7.5	0.98	13.75	-114	
10:45	6.42	1.5	3	2.4	13.4	-106	
10:50	6.30	1.51	5.9	0.62	14.11	-106	
10:55	6.14	1.39	13.4	0.55	14.47	-100	
11:00	6.04	1.34	8.8	0.52	14.62	-97	
11:05	6.00	1.33	6.6	0.51	14.68	-97	
11:10	5.98	1.33	2.3	0.53	14.69	-97	5.96
11:15	Sample						

Sample Time: 11:15

Purge Volume: 2.5 gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-24S Date: 1/11/12

Well Depth: 19.65 ft. bgs Screen length: 5-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.65 ft.

Measuring Point: TOC Sampling Personnel: N. Olivo, M. Becker Pumping rate: 250 mL/min

Other Info.: PID Headspace = 0.2 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
12:50	Begin Purging						
12:52	5.13	8.35	4.0	1.22	16.14	-25	
12:57	5.73	9.48	0.0	0.56	15.46	-92	
13:02	5.90	10.1	0.0	0.48	15.33	-136	
13:07	6.00	10.3	0.0	0.44	15.25	-173	
13:12	6.07	10.4	0.0	0.42	15.15	-222	
13:17	6.11	10.6	0.0	0.41	15.09	-247	
13:22	6.16	10.8	0.7	0.4	15.04	-256	
13:27	6.18	11.1	1.2	0.4	14.98	-264	
13:32	6.19	11.2	1.7	0.38	14.94	-270	

Sample Time: 13:35

Purge Volume: 2.5 gallons

LOW-FLOW SAMPLING LOG

Project No.: 11130289 Site: Columbia Cement, NY Well No.: MW-09-25D Date: 1/11/12

Well Depth: 35.51 ft. bgs Screen length: 5-feet Well Dia.: 2-inches Casing Type: PVC

Sampling Device: Geopump Tubing Type: Poly Water Level: 5.54 ft.

Measuring Point: TOC Sampling Personnel: M. Dascoli Pumping rate: 200 mL/min

Other Info.: PID Headspace = 0.1 ppm

Time	Ph (s.u.)	Cond. (mS/cm)	Turbidity (NTU)	Diss. O2 (mg/l)	Temp (C)	ORP (mV)	Water Level (ft.)
12:53	5.36	0.392	19	7.37	15.57	148	5.53
12:58	6.33	0.173	8.9	4.95	15.03	58	
13:03	6.52	0.152	2.5	4.60	14.53	38	
13:08	6.52	0.323	2.7	4.23	14.49	33	5.73
13:13	6.60	0.73	2.9	2.85	14.43	23	5.79
13:18	6.56	1.98	2.7	1.63	14.49	-31	
13:23	6.60	3.73	2.8	0.92	14.67	-61	
13:28	6.55	4.52	2.2	0.77	14.67	-69	
13:33	6.55	4.68	2.3	0.73	14.62	-71	5.99
13:38	6.53	4.80	2.3	0.66	14.59	-73	
13:43	6.53	4.85	2.1	0.61	14.50	-74	6.08

Sample Time: 9:25

Purge Volume: 5-gallons

APPENDIX D
DATA VALIDATION REVIEW

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: DECEMBER 4 THROUGH DECEMBER 5, 2008
JOB NO.: 11130272

LAB REPORT NO. A08-F534

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-6, Revision 14, dated September 2006. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of ten groundwater samples were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
* Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation
* Tentatively Identified Compounds

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. A08-F534

Sample ID	Lab ID	Date Collected	Test Requested
GW-01A	A8F53405	12/5/08	VOA Special List
GW-01B	A8F53404	12/5/08	VOA Special List
GW-01C	A8F53403	12/5/08	VOA Special List
GW-01D	A8F53402	12/5/08	VOA Special List
GW-01E	A8F53401	12/5/08	VOA Special List
GW-09A	A8F53410	12/4/08	VOA Special List
GW-09B	A8F53409	12/4/08	VOA Special List
GW-09C	A8F53408	12/4/08	VOA Special List
GW-09D	A8F53407	12/4/08	VOA Special List
GW-09E	A8F53406	12/4/08	VOA Special List

Legend:

VOA Special List = Volatile Organic Compounds (chloroethane, methylene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane and chlorobenzene) analyzed following ASP 2005 CLP OLM04.3.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency, for the most part, does not impact data usability.

- The laboratory did not include the Internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (+2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No VOA contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent

recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- All of the samples were analyzed at a 1:2 dilution for the VOA analyses resulting in elevated detection limits, due to excessive foaming in the samples. No qualifier is required.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for any of the samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. Based on the data review, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: DECEMBER 3 THROUGH DECEMBER 5, 2008
JOB NO.: 11130272

LAB REPORT NO. A08-F536

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-6, Revision 14, dated September 2006. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of eleven groundwater samples, one field blank sample and one trip blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. A08-F536

Sample ID	Lab ID	Date Collected	Test Requested
FB120508	A8F53612	12/5/08	VOA Special List
GW-02A	A8F53610	12/5/08	VOA Special List
GW-02B	A8F53609	12/5/08	VOA Special List
GW-02C	A8F53608	12/5/08	VOA Special List
GW-02D	A8F53607	12/5/08	VOA Special List
GW-02E	A8F53606	12/5/08	VOA Special List
GW-02X	A8F53611	12/5/08	VOA Special List
GW-08A	A8F53605	12/3/08	VOA Special List
GW-08B	A8F53604	12/3/08	VOA Special List
GW-08C	A8F53603	12/3/08	VOA Special List
GW-08D	A8F53602	12/3/08	VOA Special List
GW-08E	A8F53601	12/3/08	VOA Special List
TB120508	A8F53613	12/5/08	VOA Special List

Legend:

VOA Special List = Volatile Organic Compounds (chloroethane, methylene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane and chlorobenzene) analyzed following ASP 2005 CLP OLM04.3.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency does not impact data usability.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

- Samples GW-08A, GW-08B, GW-08C, GW-08D and GW-08E were samples on 12/3/08. Samples need to be returned to the lab within 48 hours of sampling. These

sampled were not returned until 12/6/08. The results for these samples are qualified as estimated values (J) and (UJ).

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No VOA contaminants were identified in the laboratory method blanks, field or tip blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factors of the VOA compound, methylene chloride, associated with all of the samples, the non-detected methylene chloride results for these samples are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- All other VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples GW-02E and GW-02D were reanalyzed at a 1:2 dilution for VOA resulting in elevated detection limits, due to the target compound chloroethane concentration exceeding the linear calibration range requirements. Only chloroethane should be reported from the diluted analysis. No qualifier is required.

- Samples GW-08E, GW-08D, GW-08C, GW-08B, GW-08A, GW-02C, GW-02B and GW-02X for VOA were analyzed at a 1:4 dilution due to excessive foaming in the samples.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for any of the samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable with the qualifiers noted in this report. Based on the data review, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

FB120508

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53612

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1865.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	10	U

UJ QR 4/10/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53610

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1861.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	5	J
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	1	J

4J
QR
4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53609

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1860.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	50		
75-09-2	Methylene chloride	40	U	UJ
75-34-3	1,1-Dichloroethane	40	U	QR
71-55-6	1,1,1-Trichloroethane	40	U	4/1/11
108-90-7	Chlorobenzene	40	U	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53608

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1859.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	300		
75-09-2	Methylene chloride	40	U	UJ
75-34-3	1,1-Dichloroethane	40	U	OR
71-55-6	1,1,1-Trichloroethane	40	U	4/10/11
108-90-7	Chlorobenzene	4	J	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53607

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1858.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	210	E
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	4	J

UJ
QR
4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53607DL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1873.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	360	D	UJ
75-09-2	Methylene chloride	20	U	
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	QR 4/11/11
108-90-7	Chlorobenzene	4	DJ	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53606

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1857.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	230	E
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	1	J

UJ
QL
4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53606DL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1872.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	240	D
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	20	U

UJ
QR
4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-02X

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53611

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1862.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	320		
75-09-2	Methylene chloride	40	U	UJ
75-34-3	1,1-Dichloroethane	40	U	QR
71-55-6	1,1,1-Trichloroethane	40	U	4/11/11
108-90-7	Chlorobenzene	4	J	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-08A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53605

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1856.RR

Level: (low/med) LOW Date Samp/Recv: 12/03/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	40	U
75-09-2	Methylene chloride	40	U
75-34-3	1,1-Dichloroethane	40	U
71-55-6	1,1,1-Trichloroethane	40	U
108-90-7	Chlorobenzene	40	U

UJ

QC 4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-08B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53604

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1855.RR

Level: (low/med) LOW Date Samp/Recv: 12/03/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	40	U
75-09-2	Methylene chloride	40	U
75-34-3	1,1-Dichloroethane	40	U
71-55-6	1,1,1-Trichloroethane	40	U
108-90-7	Chlorobenzene	40	U

UJ

QR 4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-08C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53603

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1854.RR

Level: (low/med) LOW Date Samp/Recv: 12/03/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	8	J
75-09-2	Methylene chloride	40	U
75-34-3	1,1-Dichloroethane	40	U
71-55-6	1,1,1-Trichloroethane	40	U
108-90-7	Chlorobenzene	40	U

J EJ

QR 9/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-08D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53602

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1853.RR

Level: (low/med) LOW Date Samp/Recv: 12/03/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	39	J
75-09-2	Methylene chloride	40	U
75-34-3	1,1-Dichloroethane	40	U
71-55-6	1,1,1-Trichloroethane	40	U
108-90-7	Chlorobenzene	6	J

J
J

QR 4/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-08E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53601

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1852.RR

Level: (low/med) LOW Date Samp/Recv: 12/03/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 4.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	150	
75-09-2	Methylene chloride	40	U
75-34-3	1,1-Dichloroethane	40	U
71-55-6	1,1,1-Trichloroethane	40	U
108-90-7	Chlorobenzene	9	J

J J J

QR 9/11/11

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

TB120508

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F53613

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1866.RR

Level: (low/med) LOW Date Samp/Recv: 12/05/2008 12/06/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/13/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	10	U

UJ QR 4/10/11

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: DECEMBER 6 and DECEMBER 8, 2008
JOB NO.: 11130272

LAB REPORT NO. A08-F709

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of twelve groundwater samples were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. A08-F709

Sample ID	Lab ID	Date Collected	Test Requested
GW-03A	A8F70905	12/6/08	VOA Special List
GW-03B	A8F70904	12/6/08	VOA Special List
GW-03C	A8F70903	12/6/08	VOA Special List
GW-03D	A8F70902	12/6/08	VOA Special List
GW-03E	A8F70901	12/6/08	VOA Special List
GW-04A	A8F70910	12/6/08	VOA Special List
GW-04B	A8F70909	12/6/08	VOA Special List
GW-04C	A8F70908	12/6/08	VOA Special List
GW-04D	A8F70907	12/6/08	VOA Special List
GW-04E	A8F70906	12/6/08	VOA Special List
GW-05D	A8F70912	12/8/08	VOA Special List
GW-05E	A8F70911	12/8/08	VOA Special List

Legend:

VOA Special List = Volatile Organic Compounds (chloroethane, methylene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane and chlorobenzene) analyzed following ASP 2005 CLP OLM04.3.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency, for the most part, does not impact data usability.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- Samples GW-03CDL, GW-04A, GW-04B and GW-04C were analyzed one day outside the acceptable 10 day VOA holding time. The results for these samples are qualified as estimated values “J” and “UJ”.

- All the other samples were analyzed within the required 10-day hold time for VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the

reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

- All of the samples with the exception of GW-05E and GW-05D were not returned to the laboratory within 48 hours of field sampling. All VOA samples with the exception of GW-05E and GW-05D are qualified as estimated values "J" and "UJ".

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No VOA contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound methylene chloride, the non-detected methylene chloride results for all the samples are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- All other VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples GW-03A, GW-03B, GW-04A, GW-04B, GW-04D and GW-05E were analyzed at a 1:2 dilution for the VOA analyses resulting in elevated detection limits, due to matrix effect. No qualifier is required.

- The chloroethane concentration reported for sample GW-03C exceeded the instrument linear calibration range. The chloroethane concentration should be reported from the 2x diluted sample. All other results should be reported from the undiluted sample.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for any of the samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. Based on the data review, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70905

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1908.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	75		J
75-09-2	Methylene chloride	20	U	UJ
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	7	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70904

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1907.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	310	
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	11	J

J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70903

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1906.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	220	E	J
75-09-2	Methylene chloride	10	U	
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	11		J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70903DL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1919.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	290	D
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	14	DJ

J
UJ
J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70902

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1905.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	120		J
75-09-2	Methylene chloride	10	U	UJ
75-34-3	1,1-Dichloroethane	10	U	↓
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	11		J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-03E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70901

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1904.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	72		J
75-09-2	Methylene chloride	10	U	UJ
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	5	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-04A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70910

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1922.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	2	J
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	5	J

J 3.5 J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-04B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70909

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1921.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	4	J	J
75-09-2	Methylene chloride	20	U	UJ
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	9	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-04C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70908

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1920.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	80		J
75-09-2	Methylene chloride	10	U	UJ
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	8	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-04D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70907

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1910.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	150		J
75-09-2	Methylene chloride	20	U	
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	7	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-04E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70906

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1909.RR

Level: (low/med) LOW Date Samp/Recv: 12/06/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	160		J UJ
75-09-2	Methylene chloride	10	U	
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	5	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05D

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70912

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1924.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	1	J	UJ
75-09-2	Methylene chloride	10	U	
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	22		

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05E

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F70911

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1923.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/17/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	15	J	UJ
75-09-2	Methylene chloride	20	U	
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	63		

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: DECEMBER 8 and DECEMBER 9, 2008
JOB NO.: 11130272

LAB REPORT NO. A08-F710

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of fourteen groundwater samples, one field blank sample and one trip blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance

Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. A08-F710

Sample ID	Lab ID	Date Collected	Test Requested
FB120808	A8F71005	12/8/08	VOA Special List
GW-05A	A8F71003	12/8/08	VOA Special List
GW-05B	A8F71002	12/8/08	VOA Special List
GW-05C	A8F71001	12/8/08	VOA Special List
GW-05X	A8F71004	12/8/08	VOA Special List
GW-06A	A8F71015	12/9/08	VOA Special List
GW-06B	A8F71014	12/9/08	VOA Special List
GW-06C	A8F71013	12/9/08	VOA Special List
GW-06D	A8F71012	12/9/08	VOA Special List
GW-06E	A8F71011	12/9/08	VOA Special List
GW-07A	A8F71010	12/9/08	VOA Special List
GW-07B	A8F71009	12/9/08	VOA Special List
GW-07C	A8F71008	12/9/08	VOA Special List
GW-07D	A8F71007	12/9/08	VOA Special List
GW-07E	A8F71006	12/9/08	VOA Special List
TB120808	A8F71016	12/9/08	VOA Special List

Legend:

VOA Special List = Volatile Organic Compounds (chloroethane, methylene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane and chlorobenzene) analyzed following ASP 2005 CLP OLM04.3.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency, for the most part, does not impact data usability.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- All samples were analyzed within the required 10-day hold time for VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

- Samples GW-05C, GW-05B, GW-05A, GW-05X and FB120808 were not returned to the laboratory within 48 hours of field sampling. The results for these samples are qualified as estimated values "J" and "UJ".

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No VOA contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound methylene chloride, the non-detected methylene chloride results for samples GW-07B, GW-07A and TB120808 are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- All other VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples GW-05A, GW-05B, GW-05X, GW-06B, GW-06D, GW-07A and GW-07B were analyzed at a 1:2 dilution for the VOA analyses resulting in elevated detection limits, due to matrix effect. No qualifier is required.

- The chloroethane concentration reported for sample GW-07C exceeded the instrument linear calibration range. The chloroethane concentration should be reported from the 10x diluted sample. All other results should be reported from the undiluted sample.

- The chloroethane concentration reported for samples GW-07E and GW-07D exceeded the instrument linear calibration range. The chloroethane concentrations should be reported from the 20x diluted sample. All other results should be reported from the undiluted sample.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for any of the samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. Based on the data review, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

FB120808

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71005

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1880.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
108-90-7	Chlorobenzene	10	U

JJ

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71003

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1878.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	20	U
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	10	J

W → J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1875.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	20	U
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	3	J

UJ
J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05C

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1874.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	10	U	UJ
75-09-2	Methylene chloride	10	U	
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	2	J	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-05X

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71004

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1879.RR

Level: (low/med) LOW Date Samp/Recv: 12/08/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/15/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-00-3	Chloroethane	20	U
75-09-2	Methylene chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
108-90-7	Chlorobenzene	10	J

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-07A

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71010

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1897.RR

Level: (low/med) LOW Date Samp/Recv: 12/09/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	8	J	UJ
75-09-2	Methylene chloride	20	U	
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	20	U	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

GW-07B

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71009

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1896.RR

Level: (low/med) LOW Date Samp/Recv: 12/09/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	30		
75-09-2	Methylene chloride	20	U	UJ
75-34-3	1,1-Dichloroethane	20	U	
71-55-6	1,1,1-Trichloroethane	20	U	
108-90-7	Chlorobenzene	3	J	

ASP 2005 CLP (OLM04.3) - LIMITED LIST VOLATILES
ANALYSIS DATA SHEET

Client No.

TB120808

Lab Name: TestAmerica Laboratories Inc. Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A8F71016

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: Q1895.RR

Level: (low/med) LOW Date Samp/Recv: 12/09/2008 12/11/2008

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 12/16/2008

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-00-3	Chloroethane	10	U	UJ
75-09-2	Methylene chloride	10	U	
75-34-3	1,1-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
108-90-7	Chlorobenzene	10	U	

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: MARCH 12, 2009
URS PROJECT NO.: 11130272

LAB REPORT No: NY130775

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the USEPA Region II standard operating procedures (SOP) based on the Draft USEPA Contract Laboratory Program Scope of work (CLP SOW): Volatile Organics Analysis of Ambient Air in Canisters, dated December 1991, Revision VCAA01.0, and USEPA TO-15 methodology. The data validation review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with the New York State Department of Environmental Conservation (NYSDEC) Analytical Service Protocol (ASP) Category B data deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. Ten ambient air summa canister samples were collected by URS Corporation – Wayne, New Jersey, and submitted to Test America of South Burlington, Vermont (NYSDEC Certification No. 10391). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The samples were analyzed following USEPA TO-15 methodology. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* * Hold Times
* * Blank Contamination
* * GC/MS Performance Check (Tuning) Summaries
* * Internal Standard Area Performance
* * Initial and Continuing Calibration Results
* * Blank Spike (BS) and Blank Spike Duplicate (BSD) Summaries
* * Matrix Duplicate Summaries
* * Summa Canister Cleaning Certification
* * Target Compound Identification and Quantitation

* All criteria were met for this parameter.

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. NY130775

Sample ID	Lab ID	Date Collected	Test Requested
SS-162-01	789496	3/12/09	VOCs by TO15
IA-162-01	789497	3/12/09	VOCs by TO15
SS-162-02	789498	3/12/09	VOCs by TO15
IA-162-02	789499	3/12/09	VOCs by TO15
20090312-FD-1	789500	3/12/09	VOCs by TO15
AA-162-01	789501	3/12/09	VOCs by TO15
SS-191-01	789502	3/12/09	VOCs by TO15
IA-191-01	789503	3/12/09	VOCs by TO15
SS-191-02	789504	3/12/09	VOCs by TO15
IA-191-02	789505	3/12/09	VOCs by TO15

Legend:

TO-15 = Toxic Organic Compounds (Volatile Organic Compounds) following USEPA Method TO-15.

3.0 RESULTS

3.1 GENERAL COMMENTS

- With regard to the data package deliverables, all of the NYSDEC ASP Category B Data Deliverable format requirements were met.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The project samples associated with Data Set NY130775 were analyzed within the required hold time for VOA analyses. No qualifier is required.

Blank Contamination: Laboratory method blank is an unused, certified canister that has not left the laboratory. The blank canister is pressurized with humidified, ultra-pure zero air and carried through the same analytical procedure as the investigative sample. Air canister laboratory method blanks are used to identify whether the investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

- No VOA target compound contaminants were detected in the laboratory method blanks associated with the reviewed data set. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the VOA analyses.

- The VOA internal standard area counts and retention times associated with Data Set NY130775 fell within control limits. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD) and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Blank Spike (BS) and Blank Spike Duplicate (BSD) Summaries: Blank spikes are blank samples fortified (spiked) with known concentrations of analytes of interest. The percent recoveries and/or duplicate results of the blank spike and their duplicates are used to assess extraction efficiencies, and overall analytical accuracy and precision.

- The VOA BS/BSD results (recoveries and relative percent differences or RPD) associated with Data Set NY130775 fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Matrix Duplicate Summaries: Duplicate samples are used to demonstrate acceptable laboratory method precision at the time of analysis. Duplicate results are used to assess possible matrix effects, and overall analytical accuracy and precision.

- The VOA matrix duplicate for Data Set NY130775 fell within control limits. No qualifier is required.

Summa Canister Cleaning Certification: Each canister is evacuated and then pressurized with humidified ultra-pure zero air. This procedure is repeated a total of three times for each canister in the batch. One canister is randomly selected from the batch and then analyzed for clean test. Summa Canister Cleaning Certification verifies that the canister used to certify the canister batch is clean and free of any contaminants before sample collection.

- No VOA target compound contaminants were detected in the batch of canisters associated with the reviewed data set. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- The following project samples were analyzed at elevated dilutions for VOA due to the target compound concentrations exceeding the linear calibration range requirements. No qualifier is required.

Data Set	Associated Sample and Dilution
NY130775	20090312-FD-1 (1:1.7 and 1:4) AA-162-01 (1:4) IA-162-01 (1:1.5 and 1:4) IA-162-02 (1:4) IA-191-01 (1:4) IA-191-02 (1:4) SS-162-02 (1:2.5 and 1:4)

- The GC/MS raw data (quantitation reports, chromatograms and mass-spectra) were provided for review. No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP Category B Data Deliverable format requirements.

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: SEPTEMBER 8 THROUGH 11, 2009
JOB NO.: 11130272

LAB REPORT NO. RSI0351

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-6, Revision 14, dated September 2006; evaluation of Metals data for USEPA Region II Contract Laboratory Program (CLP), SOP HW-2, Rev. 13; dated September 2006 and SW-846, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of fourteen groundwater samples, one blind field duplicate groundwater sample, one field-blank sample, and three trip-blank samples were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
  Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The inorganic and conventional parameter data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Instrument Calibration and Verifications

* Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Results
* Laboratory Control Sample (LCS) Results
  Matrix Spike (MS) and Duplicate (DU) Summaries
  ICP Serial Dilution Results
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. RSI0351

Sample ID	Lab ID	Date Collected	Test Requested
MW-09-26D	RSI0351-01	9/8/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-98-10D	RSI0351-02	9/8/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-97-2S	RSI0351-03	9/9/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-24S	RSI0351-04	9/9/09	Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-25D	RSI0351-05	9/9/09	Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-05-15D	RSI0351-06	9/9/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
TB090909	RSI0351-07	9/9/09	VOA
MW-05-14S	RSI0437-01	9/10/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-23D	RSI0437-02	9/10/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-03-13S	RSI0437-03	9/10/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-22S	RSI0437-04	9/10/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-21D	RSI0437-05	9/10/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide,

			Sulfate and TOC
MW-09-19D	RSI0437-06	9/11/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-18S	RSI0437-07	9/11/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-09-20S	RSI0437-08	9/11/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
FB091009	RSI0437-09	9/11/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
DUP091009	RSI0437-10	9/11/09	VOA, Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
TB091109-1	RSI0437-11	9/11/09	VOA
TB091109-2	RSI0437-12	9/11/09	VOA

Legend:

VOA	=	Analyzed following USEPA CLP-VOA.
Methane/Ethane/ Ethene	=	Analyzed following USEPA RSK 175.
(Total) Iron	=	Analyzed following USEPA CLP-M.
(Dissolved) Iron	=	Analyzed following USEPA CLP-M.
Sulfate	=	Analyzed following USEPA Method 9038.
Sulfide	=	Analyzed following USEPA Method 4500-SF.
TOC	=	Total Organic Carbon following USEPA Method 9060.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency, for the most part, does not impact data usability.

- The laboratory did not include the Internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required hold time for VOA and Methane/Ethane/Ethene analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (+2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No VOA and Methane/Ethane/Ethene contaminants were identified in the laboratory method blank and/or in the field/trip-blank sample associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

- Volatile surrogate compounds are not associated with Methane/Ethane/Ethene analyses. Therefore, no comments are offered regarding possible matrix effects and overall analytical accuracy. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factors of the VOA compound, chloroethane, associated with samples MW-09-26D, MW-98-10D, MW-97-2S, MW-05-15D and TB090909, the detected chloroethane results for these samples are qualified as estimated values (J). The non-detected chloroethane results for these samples are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factors of the VOA compounds, 2-butanone, 2-hexanone and acetone, associated with samples MW-05-14S, MW-09-23D, MW-03-13S, FB091009, MW-09-22S, MW-09-21D, MW-09-19D, DUP091009, MW-09-18S, MW-09-20S, TB091109-1 and TB091109-2 the non-detected 2-butanone, 2-hexanone and acetone results for these samples are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- All other VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

- The Methane/Ethane/Ethene target compounds initial and continuing calibration response factors, %RSD, and %D associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a

positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- The MS/MSD was outside acceptable QC limits for methane (high). The detected methane results for all the samples are qualified as estimated values (J).

- The other Methane/Ethane/Ethene MS/MSD results (recoveries and relative percent differences or RPD) and BS recoveries fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP091009 was collected and submitted as a blind field duplicate of sample MW-09023D. The reproducibility of the VOA and Methane/ Ethane/Ethene results is good, providing a positive indication of the overall accuracy and precision associated with this analysis. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Sample MW-05-15D was reanalyzed at a 1:8 dilution for VOA resulting in elevated detection limits, due to the target compound chloroethane concentration exceeding the linear calibration range requirements. Only chloroethane should be reported from the diluted analysis. No qualifier is required.

- Samples MW-09-18S, MW-09-20S, DUP091009, MW-05-14S, MW-09-23D, MW-03-13S, MW-09-22S, MW-09-21D and MW-09-19D for VOA were analyzed at a 1:5 dilution due to excessive foaming in the samples.

- The following samples were analyzed at elevated dilutions for Methane/Ethane/ Ethene resulting in elevated detection limits, due to the target compound methane concentrations exceeding the linear calibration range requirements. No qualifier is required.

Associated Sample and Dilution

Samples: MW-09-26D, MW-05-15D, MW-98-10D, MW-97-2S, MW-09-24S, MW-09-25D, MW-09-18S, MW-09-20S, DUP091009, MW-05-14S, MW-09-23D, MW-09-22S, MW-09-21D and MW-09-19D were all analyzed at a 1:1000 dilution due to concentrations exceeding the linear calibration range.

Sample MW-03-13S was analyzed at a 1:500 dilution due to concentrations exceeding the linear calibration range.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. Except where noted in Section 3.1, no other laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 INORGANIC AND CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for (total and dissolved) iron and conventional parameters (sulfide, sulfate, and TOC) analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No total iron was identified in the laboratory method blank and/or in the field-blank sample associated with the groundwater samples received and reviewed. No qualifier is required.

- Dissolved iron was identified in the laboratory method blank associated with the groundwater samples MW-09-26D, MW-98-10D, MW-97-2S, MW-09-24S, MW-09-25D and MW-05-15D. No qualifier is required since the concentrations detected in the samples are greater than 10 times that of the blank.

- No conventional parameter contaminants were detected in the laboratory method and/or instrument blanks associated with the reviewed project samples. No qualifier is required.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for (total and dissolved) iron fell within control limits. No qualifier is required.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for the conventional parameters fell within control limits. No qualifier is required.

Inductively Coupled Plasma (ICP) Interference Check Sample Results: The interference check sample (ICS) verifies the laboratory's ICP inter-element and background correction factors.

- The ICS analysis fell within control limits for (total and dissolved) iron. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for (total and dissolved) iron and conventional parameter analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The total iron MS recovery was outside acceptable QC limits (low) associated with samples MW-05-14S, MW-09-23D, MW-03-13S, MW-09-22S, MW-09-21D, MW-09-19D, MW-09-18S, MW-09-20S, FB091009 and DUP091009. The detected and non-detected total iron results reported for these samples are qualified as estimated values (J) and (UJ). The results may be biased low.

- The total iron MS recovery was outside acceptable QC limits (high) associated with samples MW-09-26D, MW-98-10D, MW-97-2S, MW-09-24S, MW-09-25D and MW-09-15D. The detected total iron results reported for these samples are qualified as estimated values (J). The non-detected results are not qualified. The results may be biased high.

- The (dissolved) iron MS recovery and DU RPD fell within control limits, providing a positive indication of the overall accuracy and precision associated with this analysis. No qualifier is required.

- The sulfate MS recovery was outside acceptable QC limits (high) associated with samples MW-05-14S, MW-09-23D, MW-03-13S, MW-09-22S, MW-09-21D, MW-09-19D, MW-09-18S, MW-09-20S, FB091009 and DUP091009. The detected sulfate results reported for these samples are qualified as estimated values (J). The non-detected results are not qualified. The results may be biased high.

- The other conventional parameters MS/MSD and/or DU (recoveries and RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP091009 was collected and submitted as a blind field duplicate of sample MW-09-23D. The reproducibility of the total iron and sulfide results is good, providing a positive indication of the overall accuracy and precision associated with this analysis. No qualifier is required.

- Sample DUP0910096 was collected and submitted as a blind field duplicate of sample MW-09-23D. The dissolved iron results for these two samples are qualified as estimated values (J).

- Sample DUP0910096 was collected and submitted as a blind field duplicate of sample MW-09-23D. The detected and non-detected sulfate results for these two samples are qualified as estimated values (J) and (UJ).

- Sample DUP0910096 was collected and submitted as a blind field duplicate of sample MW-09-23D. The TOC results for these two samples are qualified as estimated values (J).

ICP Serial Dilution Results: The ICP Serial dilution of samples demonstrates whether or not significant physical or chemical interference exist due to sample matrix.

- The dissolved iron ICP Serial dilution associated with samples MW-09-26D, MW-98-10D, MW-97-2S, MW-09-24S, MW-09-25D and MW-09-15D was outside acceptable QC limits. The detected dissolved iron results for these samples are qualified as estimated values (J).

- The other ICP serial dilution analyses of (total and dissolved) iron fell within control limits. No qualifier is required.

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The metals [(total and dissolved) iron] and conventional parameter raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). Except where noted in Section 3.1, no other laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

- Samples MW-09-25D (1:5), MW-09-23D (1:2) and MW-09-20S (1:10) for sulfate were analyzed at a dilution.

Additional Comments

- Metals were analyzed by ICP instrument; therefore, the Graphite Furnace Atomic Absorption (GFAA) QC data are not required for the project samples received and reviewed. No further action is required from the laboratory.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-26D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-01	File ID:	P0889.D
Sampled:	09/08/09 12:30	Prepared:	09/10/09 18:57	Analyzed:	09/11/09 00:34
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I10084	Sequence:	RI91022	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
108-90-7	Chlorobenzene	1	13	
75-00-3	Chloroethane	1	36	
75-09-2	Methylene Chloride	1	10	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	49.8	100	76 - 114	
4-Bromofluorobenzene	50.0	48.8	98	86 - 115	
Toluene-d8	50.0	48.4	97	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	994346	9.49	1087260	9.48	
Bromochloromethane	178958	8.33	195819	8.33	
Chlorobenzene-d5	999377	13.36	1090783	13.36	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-98-10D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-02	File ID:	P0890.D
Sampled:	09/08/09 14:53	Prepared:	09/10/09 18:57	Analyzed:	09/11/09 01:02
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I10084	Sequence:	RI91022	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
108-90-7	Chlorobenzene	1	5.0	J
75-00-3	Chloroethane	1	10	U
75-09-2	Methylene Chloride	1	10	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.6	101	76 - 114	
4-Bromofluorobenzene	50.0	49.3	99	86 - 115	
Toluene-d8	50.0	49.4	99	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1023023	9.49	1087260	9.48	
Bromochloromethane	181758	8.33	195819	8.33	
Chlorobenzene-d5	1022760	13.36	1090783	13.36	

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* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-97-2S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-03	File ID:	P0891.D
Sampled:	09/09/09 10:05	Prepared:	09/10/09 18:57	Analyzed:	09/11/09 01:31
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I10084	Sequence:	RI91022	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
108-90-7	Chlorobenzene	1	15	
75-00-3	Chloroethane	1	10	U
75-09-2	Methylene Chloride	1	10	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.1	100	76 - 114	
4-Bromofluorobenzene	50.0	49.4	99	86 - 115	
Toluene-d8	50.0	49.6	99	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1047312	9.49	1087260	9.48	
Bromochloromethane	188045	8.33	195819	8.33	
Chlorobenzene-d5	1049040	13.36	1090783	13.36	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-15D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-06	File ID:	P0892.D
Sampled:	09/09/09 14:44	Prepared:	09/10/09 18:57	Analyzed:	09/11/09 02:00
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I10084	Sequence:	RI91022	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
108-90-7	Chlorobenzene	1	2.9	J
75-00-3	Chloroethane	1	440	E
75-09-2	Methylene Chloride	1	10	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.8	102	76 - 114	
4-Bromofluorobenzene	50.0	50.4	101	86 - 115	
Toluene-d8	50.0	51.3	103	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1054650	9.49	1087260	9.48	
Bromochloromethane	189735	8.33	195819	8.33	
Chlorobenzene-d5	1046068	13.36	1090783	13.36	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB090909

Laboratory: TestAmerica Buffalo SDG: RSI0351

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RSI0351-07 File ID: P0893.D

Sampled: 09/09/09 14:44 Prepared: 09/10/09 18:57 Analyzed: 09/11/09 02:28

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 9I10084 Sequence: RI91022 Calibration: R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
108-90-7	Chlorobenzene	1	10	U
75-00-3	Chloroethane	1	10	U
75-09-2	Methylene Chloride	1	10	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.6	103	76 - 114	
4-Bromofluorobenzene	50.0	49.9	100	86 - 115	
Toluene-d8	50.0	51.3	103	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1017529	9.49	1087260	9.48	
Bromochloromethane	181500	8.33	195819	8.33	
Chlorobenzene-d5	1013619	13.36	1090783	13.36	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-14S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-01	File ID:	P0974.D
Sampled:	09/10/09 10:05	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 16:26
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	8.4	JD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-03-13S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-03	File ID:	P0976.D
Sampled:	09/10/09 13:08	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 17:22
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	50	UD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-21D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-05	File ID:	P0978.D
Sampled:	09/10/09 15:05	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 18:19
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	5.0	JD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	9.8	JD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-19D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-06	File ID:	P0979.D
Sampled:	09/11/09 10:20	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 18:47
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	
71-55-6	1,1,1-Trichloroethane	5	50	UD	
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD	
79-00-5	1,1,2-Trichloroethane	5	50	UD	
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD	
75-34-3	1,1-Dichloroethane	5	4.1	JD	✓
75-35-4	1,1-Dichloroethene	5	50	UD	
120-82-1	1,2,4-Trichlorobenzene	5	50	UD	
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD	
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD	
95-50-1	1,2-Dichlorobenzene	5	50	UD	
107-06-2	1,2-Dichloroethane	5	50	UD	
78-87-5	1,2-Dichloropropane	5	50	UD	
541-73-1	1,3-Dichlorobenzene	5	50	UD	
106-46-7	1,4-Dichlorobenzene	5	50	UD	
78-93-3	2-Butanone (MEK)	5	50	UD	UJ
591-78-6	2-Hexanone	5	50	UD	UJ
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD	
67-64-1	Acetone	5	50	UD	UJ
71-43-2	Benzene	5	50	UD	
75-27-4	Bromodichloromethane	5	50	UD	
75-25-2	Bromoform	5	50	UD	
74-83-9	Bromomethane	5	50	UD	
75-15-0	Carbon disulfide	5	50	UD	
56-23-5	Carbon Tetrachloride	5	50	UD	
108-90-7	Chlorobenzene	5	7.0	JD	✓
124-48-1	Chlorodibromomethane	5	50	UD	
75-00-3	Chloroethane	5	170	D	✓
67-66-3	Chloroform	5	50	UD	
74-87-3	Chloromethane	5	50	UD	
156-59-2	cis-1,2-Dichloroethene	5	50	UD	
10061-01-5	cis-1,3-Dichloropropene	5	50	UD	
110-82-7	Cyclohexane	5	50	UD	
75-71-8	Dichlorodifluoromethane	5	50	UD	
100-41-4	Ethylbenzene	5	50	UD	
98-82-8	Isopropylbenzene	5	50	UD	
79-20-9	Methyl Acetate	5	50	UD	
1634-04-4	Methyl tert-Butyl Ether	5	50	UD	
108-87-2	Methylcyclohexane	5	50	UD	
75-09-2	Methylene Chloride	5	50	UD	

QP 9/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-18S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-07	File ID:	P0980.D
Sampled:	09/11/09 11:13	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 19:16
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	50	UD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	77	D
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-20S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-08	File ID:	P0981.D
Sampled:	09/11/09 12:42	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 19:44
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	50	UD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

FB091009

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-09	File ID:	P0982.D
Sampled:	09/10/09 08:50	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 20:13
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004
Instrument:	HP5973P				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

QP 9/11/11

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

DUP091009

Laboratory: TestAmerica Buffalo SDG: RSI0351

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RSI0437-10 File ID: P0983.D

Sampled: 09/10/09 11:45 Prepared: 09/15/09 11:50 Analyzed: 09/15/09 20:41

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 9I15059 Sequence: RI91510 Calibration: R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	13	JD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB091109-1

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-11	File ID:	P0984.D
Sampled:	09/11/09 12:42	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 21:10
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB091109-2

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-12	File ID:	P0985.D
Sampled:	09/11/09 12:42	Prepared:	09/15/09 11:50	Analyzed:	09/15/09 21:38
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	9I15059	Sequence:	RI91510	Calibration:	R9H2004 Instrument: HP5973P

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

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Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-26D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-01	File ID:	15A55085
Sampled:	09/08/09 12:30	Prepared:	09/14/09 06:00	Analyzed:	09/14/09 14:13
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I14041	Sequence:	RI91606	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	11000	D

* Values outside of QC limits

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Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-98-10D

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0351-02	File ID:	15A55086
Sampled:	09/08/09 14:53	Prepared:	09/14/09 06:00	Analyzed:	09/14/09 14:28
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I14041	Sequence:	RI91606	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	11000	D

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* Values outside of QC limits

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Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-97-2S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351		
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement		
Matrix:	Water	Laboratory ID:	RSI0351-03	File ID:	15A55087		
Sampled:	09/09/09 10:05	Prepared:	09/14/09 06:00	Analyzed:	09/14/09 14:43		
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL		
Batch:	9I14041	Sequence:	RI91606	Calibration:	R9B0501	Instrument:	HP5890-15

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	9400	D

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* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-24S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-04	File ID:	15A55088
Sampled:	09/09/09 11:25	Prepared:	09/14/09 06:00	Analyzed:	09/14/09 14:58
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I14041	Sequence:	RI91606	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	8900	D

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* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-25D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0351-05	File ID:	15A55093
Sampled:	09/09/09 12:50	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 10:34
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	5400	D

* Values outside of QC limits

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Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-05-15D

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0351-06	File ID:	15A55094
Sampled:	09/09/09 14:44	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 10:49
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	4300	D

✓ J

* Values outside of QC limits

QA 4/11/10

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-05-14S

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-01	File ID:	15A55101
Sampled:	09/10/09 10:05	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 12:42
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	8100	D

✓ J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-23D

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-02	File ID:	15A55102
Sampled:	09/10/09 11:35	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 12:57
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	9900	D

✓ J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-03-13S

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-03	File ID:	15A55097
Sampled:	09/10/09 13:08	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 11:34
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	500	750	UD
74-85-1	Ethene	500	750	UD
74-82-8	Methane	500	9400	D ✓ J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-22S

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-04	File ID:	15A55103
Sampled:	09/10/09 14:20	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 13:12
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
				Instrument:	HP5890-15

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	11000	D / J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-21D

Laboratory:	TestAmerica Buffalo			SDG:	RSI0351
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSI0437-05	File ID:	15A55104
Sampled:	09/10/09 15:05	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 13:27
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	9200	D

✓ J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-19D

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-06	File ID:	15A55105
Sampled:	09/11/09 10:20	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 13:42
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence: RI91607		Calibration: R9B0501	Instrument: HP5890-15

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	9300	D ✓ J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-18S

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-07	File ID:	15A55106
Sampled:	09/11/09 11:13	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 13:57
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	7300	D / J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-09-20S

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-08	File ID:	15A55107
Sampled:	09/11/09 12:42	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 14:12
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	9200	D / J

* Values outside of QC limits

QR 4/11/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

DUP091009

Laboratory:	TestAmerica Buffalo		SDG:	RSI0351	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RSI0437-10	File ID:	15A55109
Sampled:	09/10/09 11:45	Prepared:	09/15/09 06:00	Analyzed:	09/15/09 14:41
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9I15060	Sequence:	RI91607	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	10000	D

J

* Values outside of QC limits

QP 4/11/11

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-26D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-01
File ID: 2091409-184
Sampled: 09/08/09 12:30
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:04
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	7530 ✓	ug/L	1	~~B~~ J	CLP-M

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Form 1

INORGANIC ANALYSIS DATA SHEET

CLP-M

MW-09-26D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-01
File ID: 3092409-026
Sampled: 09/08/09 12:30
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 19:05
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	22700	ug/L	1		CLP-M

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-98-10D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-02
File ID: 2091409-185
Sampled: 09/08/09 14:53
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:09
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	3120 ✓	ug/L	1	~~B~~	CLP-M

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Form Rev: 09/25/2009

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-98-10D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-02
File ID: 3092409-027
Sampled: 09/08/09 14:53
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 19:10
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	17600 ✓	ug/L	1		CLP-M

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Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-97-2S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-03
File ID: 2091409-186
Sampled: 09/09/09 10:05
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:14
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	13300 ✓	ug/L	1	~~B~~	CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-97-2S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-03
File ID: 3092409-028
Sampled: 09/09/09 10:05
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 19:15
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	35900 ✓	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-24S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-04
File ID: 2091409-187
Sampled: 09/09/09 11:25
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:19
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	887	ug/L	1	~~B~~	CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-24S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-04
File ID: 3092409-038
Sampled: 09/09/09 11:25
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 20:11
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	8780	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-25D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-05
File ID: 2091409-190
Sampled: 09/09/09 12:50
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:37
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	11400	ug/L	1	B	CLP-M

J

QR 4/11/11

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-25D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-05
File ID: 3092409-039
Sampled: 09/09/09 12:50
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 20:16
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	26700	ug/L	1		CLP-M

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Form 1

INORGANIC ANALYSIS DATA SHEET

CLP-M

MW-05-15D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-06
File ID: 2091409-191
Sampled: 09/09/09 14:44
Prepared: 09/14/09 09:50
Analyzed: 09/15/09 06:42
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I11059
Sequence: RI91715
Calibration: R9I1702
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	1090	ug/L	1	~~B~~ J	CLP-M

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-05-15D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0351-06
File ID: 3092409-040
Sampled: 09/09/09 14:44
Prepared: 09/24/09 08:15
Analyzed: 09/24/09 20:21
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I23083
Sequence: RI92524
Calibration: R9I2507
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	5950	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-05-14S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-01
File ID: 2092409-014
Sampled: 09/10/09 10:05
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 12:30
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	17800	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-23D

Laboratory: TestAmerica Buffalo | SDG: RSI0351

Client: URS Corporation - Wayne, New Jersey | Project: Columbia Cement

Matrix: Water | Laboratory ID: RSI0437-02 | File ID: 3092409-015

Sampled: 09/10/09 11:35 | Prepared: 09/18/09 09:15 | Analyzed: 09/24/09 17:59

Solids: 0.00 | Preparation: CLP Metals Prep (Water | Initial/Final: 50 mL / 50 mL

Batch: 9I14053 | Sequence: RI92524 | Calibration: R9I2507 | Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	196 ✓	ug/L	1		CLP-M

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INORGANIC ANALYSIS DATA SHEET

CLP-M

MW-09-23D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-02
File ID: 2092409-015
Sampled: 09/10/09 11:35
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 12:35
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	25700 ✓	ug/L	1		CLP-M

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-03-13S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-03
File ID: 2092409-016
Sampled: 09/10/09 13:08
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 12:41
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	25700 ✓	ug/L	1		CLP-M

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Form Rev: 09/25/2009

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Form 1

INORGANIC ANALYSIS DATA SHEET

CLP-M

MW-09-22S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-04
File ID: 2092409-021
Sampled: 09/10/09 14:20
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:06
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	1280 ✓	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-21D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-05
File ID: 2092409-024
Sampled: 09/10/09 15:05
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:22
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	20000 ✓	ug/L	1		CLP-M

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-19D

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-06
File ID: 2092409-025
Sampled: 09/11/09 10:20
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:27
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	23500 ✓	ug/L	1		CLP-M

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4/11/11

Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-18S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-07
File ID: 2092409-026
Sampled: 09/11/09 11:13
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:32
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	25300	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

MW-09-20S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-08
File ID: 2092409-027
Sampled: 09/11/09 12:42
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:37
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	8420 ✓	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

FB091009

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-09
File ID: 2092409-028
Sampled: 09/10/09 08:50
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:42
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	100 ✓	ug/L	1	U	CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

DUP091009

Laboratory: TestAmerica Buffalo — SDG: RSI0351

Client: URS Corporation - Wayne, New Jersey — Project: Columbia Cement

Matrix: Water — Laboratory ID: RSI0437-10 — File ID: 2092109-107

Sampled: 09/10/09 11:45 — Prepared: 09/18/09 09:15 — Analyzed: 09/22/09 00:29

Solids: 0.00 — Preparation: CLP Metals Prep (Water — Initial/Final: 50 mL / 50 mL

Batch: 9I14053 — Sequence: RI92531 — Calibration: R9I2510 — Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron (dissolved)	55.6 ✓	ug/L	1	J	CLP-M

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Form 1
INORGANIC ANALYSIS DATA SHEET
CLP-M

DUP091009

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-10
File ID: 2092409-029
Sampled: 09/10/09 11:45
Prepared: 09/18/09 09:15
Analyzed: 09/24/09 13:48
Solids: 0.00
Preparation: CLP Metals Prep (Water
Initial/Final: 50 mL / 50 mL
Batch: 9I14061
Sequence: RI92521
Calibration: R9I2505
Instrument: Trace 1

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7439-89-6	Iron	23000 ✓	ug/L	1		CLP-M

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Form Rev: 09/25/2009

Printed: 09/25/2009

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-09-20S

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-08
File ID:
Sampled: 09/11/09 12:42
Prepared: 09/15/09 10:30
Analyzed: 09/15/09 10:30
Solids: 0.00
Preparation: No prep Sulfate
Initial/Final: 2 mL / 2 mL
Batch: 9I15076
Sequence:
Calibration:
Instrument: Inst

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	64.2	mg/L	10	D	9038

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Form 1

INORGANIC ANALYSIS DATA SHEET

9038

DUP091009

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-10
File ID:
Sampled: 09/10/09 11:45
Prepared: 09/14/09 09:59
Analyzed: 09/14/09 09:59
Solids: 0.00
Preparation: No prep Sulfate
Initial/Final: 2 mL / 2 mL
Batch: 9I14068
Sequence:
Calibration:
Instrument: Inst

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	5.00	mg/L	1	U	9038

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Form 1

INORGANIC ANALYSIS DATA SHEET

9060

MW-09-23D

Laboratory: TestAmerica Buffalo | SDG: RSI0351

Client: URS Corporation - Wayne, New Jersey | Project: Columbia Cement

Matrix: Water | Laboratory ID: RSI0437-02 | File ID:

Sampled: 09/10/09 11:35 | Prepared: 09/15/09 19:29 | Analyzed: 09/15/09 19:29

Solids: 0.00 | Preparation: No prep Carbon | Initial/Final: 40 mL / 40 mL

Batch: 9I15105 | Sequence: | Calibration: | Instrument: Inst

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7440-44-0	Total Organic Carbon	14.1	mg/L	1		9060

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Form 1

INORGANIC ANALYSIS DATA SHEET

9060

DUP091009

Laboratory: TestAmerica Buffalo
SDG: RSI0351
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSI0437-10
File ID:
Sampled: 09/10/09 11:45
Prepared: 09/19/09 17:40
Analyzed: 09/19/09 17:40
Solids: 0.00
Preparation: No prep Carbon
Initial/Final: 40 mL / 40 mL
Batch: 9I19032
Sequence:
Calibration:
Instrument: Inst

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
7440-44-0	Total Organic Carbon	9.4	mg/L	1		9060

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DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: SEPTEMBER 30, 2009
JOB NO.: 11130272

LAB REPORT NO. RSJ0224

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in evaluation of Metals data for USEPA Region II Contract Laboratory Program (CLP), SOP HW-2, Rev. 13; dated September 2006 and SW-846, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of two groundwater samples and one field-blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Initial and Continuing Calibration Results
  Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The inorganic and conventional parameter data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Instrument Calibration and Verifications
* Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Results
* Laboratory Control Sample (LCS) Results
  Matrix Spike (MS) and Duplicate (DU) Summaries
* ICP Serial Dilution Results
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. RSJ0224

Sample ID	Lab ID	Date Collected	Test Requested
FB093009	RSJ0224-01	9/30/09	Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-07-16S	RSJ0224-02	9/30/09	Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC
MW-07-17D	RSJ0224-03	9/30/09	Methane/Ethane/Ethene, (Total & Dissolved) Iron, Sulfide, Sulfate and TOC

Legend:

Methane/Ethane/ Ethene	=	Analyzed following USEPA RSK 175.
(Total) Iron	=	Analyzed following USEPA CLP-M.
(Dissolved) Iron	=	Analyzed following USEPA CLP-M.
Sulfate	=	Analyzed following USEPA Method 9038.
Sulfide	=	Analyzed following USEPA Method 4500-SF.
TOC	=	Total Organic Carbon following USEPA Method 9060.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiency. Please note that this deficiency, for the most part, do not impact data usability.

- The laboratory did not include the Internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required hold time for Methane/Ethane/Ethene analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No Methane/Ethane/Ethene contaminants were identified in the laboratory method blank and/or in the field-blank sample associated with the groundwater samples received and reviewed. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- Volatile surrogate compounds are not associated with Methane/Ethane/Ethene analyses. Therefore, no comments are offered regarding possible matrix effects and overall analytical accuracy. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- Internal standards are not associated with Methane/Ethane/Ethene analyses. Therefore, no comments are offered regarding possible matrix effects and overall analytical accuracy. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The Methane/Ethane/Ethene target compounds initial and continuing calibration response factors, %RSD, and %D associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The MS/MSD was outside acceptable QC limits for methane (low). The detected and non-detected methane results for all the samples are qualified as estimated values (J) and (UJ).

- The other Methane/Ethane/Ethene MS/MSD results (recoveries and relative percent differences or RPD) and BS recoveries fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples MW-07-16S and MW-07-17D were analyzed at a 1:1000 dilution for Methane/Ethane/Ethene resulting in elevated detection limits, due to the target compound methane concentrations exceeding the linear calibration range requirements. No qualifier is required.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 INORGANIC AND CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for (total and dissolved) iron and conventional parameters (sulfide, sulfate, and TOC) analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No total or dissolved iron was identified in the laboratory method blank and/or in the field-blank sample associated with the groundwater samples received and reviewed. No qualifier is required.

- Sulfate was detected in the laboratory method blank. The concentrations reported for sulfate in samples FB093009 and MW-07-16S are negated due to method blank contamination.

- No other conventional parameter contaminants were detected in the laboratory method and/or instrument blanks associated with the reviewed project samples. No qualifier is required.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for (total and dissolved) iron fell within control limits. No qualifier is required.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for the conventional parameters fell within control limits. No qualifier is required.

Inductively Coupled Plasma (ICP) Interference Check Sample Results: The interference check sample (ICS) verifies the laboratory's ICP inter-element and background correction factors.

- The ICS analysis fell within control limits for (total and dissolved) iron. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for (total and dissolved) iron and conventional parameter analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to

provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The sulfide MS recovery was outside acceptable QC limits (high) associated with samples FB093009, MW-07-16S and MW-07-17D. The detected sulfate results reported for these samples are qualified as estimated values (J). The non-detected results are not qualified. The results may be biased high.

- The other conventional parameters MS/MSD and/or DU (recoveries and RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

ICP Serial Dilution Results: The ICP Serial dilution of samples demonstrates whether or not significant physical or chemical interference exist due to sample matrix.

- The ICP serial dilution analyses of (total and dissolved) iron fell within control limits. No qualifier is required.

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The metals [(total and dissolved) iron] and conventional parameter raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). Except where noted in Section 3.1, no other laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

- Sample MW-07-17D for sulfate was analyzed at a 1:20 dilution. No qualifier is required.

Additional Comments

- Metals were analyzed by ICP instrument; therefore, the Graphite Furnace Atomic Absorption (GFAA) QC data are not required for the project samples received and reviewed. No further action is required from the laboratory.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

FB093009

Laboratory:	TestAmerica Buffalo			SDG:	
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSJ0224-01	File ID:	15A56024
Sampled:	09/30/09 15:00	Prepared:	10/08/09 06:00	Analyzed:	10/08/09 10:10
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9J08044	Sequence:	RJ90830	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1	1.5	U
74-85-1	Ethene	1	1.5	U
74-82-8	Methane	1	1.0	U

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* Values outside of QC limits

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Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-07-16S

Laboratory:	TestAmerica Buffalo			SDG:	
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSJ0224-02	File ID:	15A56025
Sampled:	09/30/09 11:15	Prepared:	10/08/09 06:00	Analyzed:	10/08/09 10:25
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9J08044	Sequence:	RJ90830	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	8600	D ✓ J

* Values outside of QC limits

QR 4/11

Form 1

ORGANIC ANALYSIS DATA SHEET

RSK175

MW-07-17D

Laboratory:	TestAmerica Buffalo			SDG:	
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RSJ0224-03	File ID:	15A56026
Sampled:	09/30/09 11:58	Prepared:	10/08/09 06:00	Analyzed:	10/08/09 10:40
Solids:		Preparation:	RSK-175	Initial/Final:	1 mL / 1 mL
Batch:	9J08044	Sequence:	RJ90830	Calibration:	R9B0501
Instrument:	HP5890-15				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
74-84-0	Ethane	1000	1500	UD
74-85-1	Ethene	1000	1500	UD
74-82-8	Methane	1000	7400	D

✓ J

QR 4/11/11

* Values outside of QC limits

Form 1

INORGANIC ANALYSIS DATA SHEET

4500-S F

MW-07-17D

Laboratory: TestAmerica Buffalo
SDG:
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSJ0224-03
File ID:
Sampled: 09/30/09 11:58
Prepared: 10/02/09 12:30
Analyzed: 10/02/09 12:30
Solids: 0.00
Preparation: No prep Sulfide
Initial/Final: 100 mL / 100 mL
Batch: 9J02063
Sequence:
Calibration:
Instrument: Inst

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
18496-25-8	Sulfide	0.8	mg/L	1	J	4500-S F

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Form 1

INORGANIC ANALYSIS DATA SHEET

9038

FB093009

Laboratory: TestAmerica Buffalo
SDG:
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSJ0224-01
File ID: 100509AK-MR-116
Sampled: 09/30/09 15:00
Prepared: 10/05/09 09:52
Analyzed: 10/05/09 14:44
Solids: 0.00
Preparation: No prep Sulfate
Initial/Final: 2 mL / 2 mL
Batch: 9J05044
Sequence:
Calibration:
Instrument: AquaKem v. 6.5 /

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	1.90	mg/L	1	JB	9038

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Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-07-16S

Laboratory: TestAmerica Buffalo
SDG:
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RSJ0224-02
File ID: 100509AK-MR-117
Sampled: 09/30/09 11:15
Prepared: 10/05/09 09:52
Analyzed: 10/05/09 14:44
Solids: 0.00
Preparation: No prep Sulfate
Initial/Final: 2 mL / 2 mL
Batch: 9J05044
Sequence:
Calibration:
Instrument: AquaKem v. 6.5 /

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	1.64	mg/L	1	JB	9038

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DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: NOVEMBER 12, 2009
URS PROJECT NO.: 11130272

LAB REPORT No: NY134667

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the USEPA Region II standard operating procedures (SOP) based on the Draft USEPA Contract Laboratory Program Scope of work (CLP SOW): Volatile Organics Analysis of Ambient Air in Canisters, dated October 2006, SOP HW-31 Revision 4, and USEPA TO-15 methodology. The data validation review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with the New York State Department of Environmental Conservation (NYSDEC) Analytical Service Protocol (ASP) Category B data deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. Three ambient air summa canister samples were collected by URS Corporation – Wayne, New Jersey, and submitted to Test America of South Burlington, Vermont (NYSDEC Certification No. 10391). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The samples were analyzed following USEPA TO-15 methodology. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* • Holding Times
* • Blank Contamination
* • GC/MS Performance Check (Tuning) Summaries
* • Internal Standard Area Performance
* • Initial and Continuing Calibration Results
* • Blank Spike (BS) and Blank Spike Duplicate (BSD) Summaries
* • Matrix Duplicate Summaries
* • Summa Canister Cleaning Certification
* • Target Compound Identification and Quantitation

* All criteria were met for this parameter.

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. NY134667

Sample ID	Lab ID	Date Collected	Test Requested
SS-272-01	813511	11/12/09	VOCs by TO15
SS-272-02	813512	11/12/09	VOCs by TO15
AA-272-01	813513	11/12/09	VOCs by TO15

Legend:

TO-15 = Toxic Organic Compounds (Volatile Organic Compounds) following USEPA Method TO-15.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following deficiency. Please note that this deficiency does not impact data usability.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The project samples were analyzed within the required hold time for VOA analyses. No qualifier is required.

Blank Contamination: Laboratory method blank is an unused, certified canister that has not left the laboratory. The blank canister is pressurized with humidified, ultra-pure zero air and carried through the same analytical procedure as the investigative sample. Air canister laboratory method blanks are used to identify whether the investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

- No VOA target compound contaminants were detected in the laboratory method blank associated with the reviewed data set. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the VOA analyses.

- The VOA internal standard area counts and retention times fell within control limits. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD) and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Blank Spike (BS) and Blank Spike Duplicate (BSD) Summaries: Blank spikes are blank samples fortified (spiked) with known concentrations of analytes of interest. The percent recoveries and/or duplicate results of the blank spike and their duplicates are used to assess extraction efficiencies, and overall analytical accuracy and precision.

- The VOA BS/BSD results (recoveries and relative percent differences or RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Matrix Duplicate Summaries: Duplicate samples are used to demonstrate acceptable laboratory method precision at the time of analysis. Duplicate results are used to assess possible matrix effects, and overall analytical accuracy and precision.

- The VOA matrix duplicate fell within control limits. No qualifier is required.

Summa Canister Cleaning Certification: Each canister is evacuated and then pressurized with humidified ultra-pure zero air. This procedure is repeated a total of three times for each canister in the batch. One canister is randomly selected from the batch and then analyzed for clean test. Summa Canister Cleaning Certification verifies that the canister used to certify the canister batch is clean and free of any contaminants before sample collection.

- No VOA target compound contaminants were detected in the batch of canisters associated with the reviewed data set. No qualifier is required.

Target Compound Identification and Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- The GC/MS raw data (quantitation reports, chromatograms and mass-spectra) were provided for review. No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP Category B Data Deliverable format requirements.

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: OCTOBER 13 and 14, 2010
JOB NO.: 11130274

LAB REPORT NO. RTJ1427

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008; and SW-846, 600 Series and Standard Methods for the Evaluation of Water and Wastewater, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of nine groundwater samples, one field duplicate sample, one trip blank and one field blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The conventional parameter data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Instrument Calibration and Verifications
* Laboratory Control Sample (LCS) Results

Matrix Spike (MS) and Duplicate (DU) Summaries
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. RTJ1427

Sample ID	Lab ID	Date Collected	Test Requested
MW-09-18S	RTJ1427-01	10/13/10	TCL VOA+10, Sulfate
MW-09-19D	RTJ1427-02	10/13/10	TCL VOA+10, Sulfate
MW-09-24S	RTJ1427-03	10/13/10	TCL VOA+10, Sulfate
MW-09-25D	RTJ1427-04	10/13/10	TCL VOA+10, Sulfate
MW-09-26D	RTJ1427-05	10/13/10	TCL VOA+10, Sulfate
TB101410	RTJ1427-06	10/14/10	TCL VOA+10
FB101410	RTJ1427-07	10/14/10	TCL VOA+10, Sulfate
MW-05-14S	RTJ1427-08	10/14/10	TCL VOA+10, Sulfate
MW-05-15D	RTJ1427-09	10/14/10	TCL VOA+10, Sulfate
MW-09-23D	RTJ1427-10	10/14/10	TCL VOA+10, Sulfate
DUP101410	RTJ1427-11	10/14/10	TCL VOA+10, Sulfate
MW-09-22S	RTJ1427-13	10/14/10	TCL VOA+10, Sulfate

Legend:

TCL VOA	=	Target Compound List Volatile Organic Compounds plus Forward Library Searches analyzed following ASP 2005 CLP OLM04.3.
Sulfate	=	Analyzed following USEPA Method 9038.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiencies. Please note that these deficiencies, for the most part, do not impact data usability. The laboratory was contacted and the missing information requested. As of this writing, Test America-Buffalo has not provided the required information. This report may be amended upon the receipt of the laboratory corrections.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for TCL VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (+2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No TCL VOA contaminants were identified in the laboratory method/field/trip blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The TCL VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for TCL VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The response factor for trichloroethene did not meet the minimum requirement of 0.3 on the initial calibration associated with all the samples. The non-detected trichloroethene concentrations are qualified as estimated values "UJ".

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound 2-butanone the non-detected 2-butanone result reported for sample MW-05-15D is qualified as an estimated value and is flagged (UJ) on the laboratory summary pages and on the summary table.

- All other TCL VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP101410 was collected and submitted as a blind field duplicate of sample MW-09-22S. The field duplicate pair reported unacceptable precision for chlorobenzene. Therefore, the detected and non-detected chlorobenzene results reported for these two samples are qualified as estimated values "J" and "UJ".

Target Compound Identification Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples MW-09-19D and DUP101410 were analyzed at a 1:2 dilution due to excessive foaming of the samples. No qualifier is required.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Tentatively Identified Compounds: In addition to the specific target compounds identified, 10 non-target volatile organic compounds of greatest apparent concentration were tentatively identified by a computerized search of the National Bureau of Standards (NBS) mass-spectral library. A mass-spectral interpretation specialist compares the sample mass-spectrum to the library search and assigns a tentative identification. The validity of the tentatively identified compounds (TICs) was evaluated based upon the identifications made by the laboratory, and the following comments are offered:

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for sulfate analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No sulfate contaminants were detected in the laboratory method and/or instrument/field blanks associated with the reviewed project samples. No qualifier is required.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for sulfate fell within control limits. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for sulfate analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The sulfate RPD was outside the acceptable QC limits. Therefore, the detected sulfate results are qualified as estimated values "J".

- The sulfate MS/MSD fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP101410 was collected and submitted as a blind field duplicate of sample MW-09-22S. The reproducibility of sulfate results is good, providing a positive indication of the overall accuracy and precision associated with this analysis. No qualifier is required.

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The sulfate raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data

contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-18S 101310

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1427
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1427-01	File ID:	S1214.D
Sampled:	10/13/10 08:35	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 16:51
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	37	
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-18S 101310

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-01	File ID:	S1214.D
Sampled:	10/13/10 08:35	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 16:51
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	9.4	J

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.9	102	76 - 114	
4-Bromofluorobenzene	50.0	50.4	101	86 - 115	
Toluene-d8	50.0	49.8	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1381690	4.93	1434804	4.93	
Bromochloromethane	214715	4.19	223332	4.19	
Chlorobenzene-d5	1231436	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-19D 101310

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-02	File ID:	S1215.D
Sampled:	10/13/10 09:37	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 17:12
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence: T004731	Calibration:	R10J104	Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	2	20	UD
79-34-5	1,1,2,2-Tetrachloroethane	2	20	UD
79-00-5	1,1,2-Trichloroethane	2	20	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	2	20	UD
75-34-3	1,1-Dichloroethane	2	20	UD
75-35-4	1,1-Dichloroethene	2	20	UD
120-82-1	1,2,4-Trichlorobenzene	2	20	UD
96-12-8	1,2-Dibromo-3-chloropropane	2	20	UD
106-93-4	1,2-Dibromoethane (EDB)	2	20	UD
95-50-1	1,2-Dichlorobenzene	2	20	UD
107-06-2	1,2-Dichloroethane	2	20	UD
78-87-5	1,2-Dichloropropane	2	20	UD
541-73-1	1,3-Dichlorobenzene	2	20	UD
106-46-7	1,4-Dichlorobenzene	2	20	UD
78-93-3	2-Butanone (MEK)	2	20	UD
591-78-6	2-Hexanone	2	20	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	2	20	UD
67-64-1	Acetone	2	20	UD
71-43-2	Benzene	2	20	UD
75-27-4	Bromodichloromethane	2	20	UD
75-25-2	Bromoform	2	20	UD
74-83-9	Bromomethane	2	20	UD
75-15-0	Carbon disulfide	2	20	UD
56-23-5	Carbon Tetrachloride	2	20	UD
108-90-7	Chlorobenzene	2	5.2	JD
124-48-1	Chlorodibromomethane	2	20	UD
75-00-3	Chloroethane	2	58	D
67-66-3	Chloroform	2	20	UD
74-87-3	Chloromethane	2	20	UD
156-59-2	cis-1,2-Dichloroethene	2	20	UD
10061-01-5	cis-1,3-Dichloropropene	2	20	UD
110-82-7	Cyclohexane	2	20	UD
75-71-8	Dichlorodifluoromethane	2	20	UD
100-41-4	Ethylbenzene	2	20	UD
98-82-8	Isopropylbenzene	2	20	UD
79-20-9	Methyl Acetate	2	20	UD
1634-04-4	Methyl tert-Butyl Ether	2	20	UD
108-87-2	Methylcyclohexane	2	20	UD
75-09-2	Methylene Chloride	2	20	UD

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-19D 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-02 File ID: S1215.D

Sampled: 10/13/10 09:37 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 17:12

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	2	20	UD
127-18-4	Tetrachloroethene	2	20	UD
108-88-3	Toluene	2	20	UD
156-60-5	trans-1,2-Dichloroethene	2	20	UD
10061-02-6	trans-1,3-Dichloropropene	2	20	UD
79-01-6	Trichloroethene	2	20	UD
75-69-4	Trichlorofluoromethane	2	20	UD
75-01-4	Vinyl chloride	2	20	UD
1330-20-7	Xylenes, total	2	20	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	12	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.4	103	76 - 114	D
4-Bromofluorobenzene	50.0	49.5	99	86 - 115	D
Toluene-d8	50.0	49.2	98	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1370122	4.93	1434804	4.93	
Bromochloromethane	212796	4.19	223332	4.19	
Chlorobenzene-d5	1230167	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-24S 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-03 File ID: S1216.D

Sampled: 10/13/10 10:52 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 17:34

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	1.8	J
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	3.3	J
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	0.79	J
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-24S 101310

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-03	File ID:	S1216.D
Sampled:	10/13/10 10:52	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 17:34
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104	Instrument:	HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	14	

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.9	102	76 - 114	
4-Bromofluorobenzene	50.0	50.4	101	86 - 115	
Toluene-d8	50.0	50.2	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1365895	4.93	1434804	4.93	
Bromochloromethane	216227	4.19	223332	4.19	
Chlorobenzene-d5	1231870	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-25D 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-04 File ID: S1217.D

Sampled: 10/13/10 12:27 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 17:55

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	1.8	J ✓
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	5.5	J ✓
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	6.5	J ✓
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-25D 101310

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-04	File ID:	S1217.D
Sampled:	10/13/10 12:27	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 17:55
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	47	
000090-12-0	Naphthalene, 1-methyl-	11.742	12	
000091-57-6	Naphthalene, 2-methyl-	11.882	7.8	

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.6	101	76 - 114	
4-Bromofluorobenzene	50.0	49.8	100	86 - 115	
Toluene-d8	50.0	49.8	100	88 - 110	
INTERNAL STANDARD	**AREA**	**RT**	**REF AREA**	**REF RT**	**Q**
1,4-Difluorobenzene	1414414	4.93	1434804	4.93	
Bromochloromethane	219029	4.19	223332	4.19	
Chlorobenzene-d5	1244582	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-26D 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-05 File ID: S1218.D

Sampled: 10/13/10 13:57 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 18:16

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	2.1	J
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	14	
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	4.2	J
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-26D 101310

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1427
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1427-05	File ID:	S1218.D
Sampled:	10/13/10 13:57	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 18:16
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	45	
000091-57-6	Naphthalene, 2-methyl-	11.742	6.5	

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.7	103	76 - 114	
4-Bromofluorobenzene	50.0	50.4	101	86 - 115	
Toluene-d8	50.0	49.6	99	88 - 110	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1378656	4.93	1434804	4.93	
Bromochloromethane	215065	4.19	223332	4.19	
Chlorobenzene-d5	1227621	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-06 File ID: S1219.D

Sampled: 10/14/10 00:00 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 18:38

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-06	File ID:	S1219.D
Sampled:	10/14/10 00:00	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 18:38
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.4	103	76 - 114	
4-Bromofluorobenzene	50.0	50.1	100	86 - 115	
Toluene-d8	50.0	50.0	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1403019	4.93	1434804	4.93	
Bromochloromethane	218443	4.19	223332	4.19	
Chlorobenzene-d5	1249950	7.13	1286302	7.13	

QC limit UJ

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

FB 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-07 File ID: S1220.D

Sampled: 10/14/10 12:30 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 18:59

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

FB 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-07	File ID:	S1220.D
Sampled:	10/14/10 12:30	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 18:59
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.0	102	76 - 114	
4-Bromofluorobenzene	50.0	49.2	98	86 - 115	
Toluene-d8	50.0	49.0	98	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1378874	4.93	1434804	4.93	
Bromochloromethane	212900	4.19	223332	4.19	
Chlorobenzene-d5	1230145	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-14S 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-08 File ID: S1221.D

Sampled: 10/14/10 09:37 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 19:21

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	1.3	J
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	6.2	J
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-14S 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-08	File ID:	S1221.D
Sampled:	10/14/10 09:37	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 19:21
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence: T004731		Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	52.0	104	76 - 114	
4-Bromofluorobenzene	50.0	50.8	102	86 - 115	
Toluene-d8	50.0	49.8	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1350714	4.93	1434804	4.93	
Bromochloromethane	210513	4.19	223332	4.19	
Chlorobenzene-d5	1211699	7.13	1286302	7.13	

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-15D 101410

Laboratory: TestAmerica Buffalo | SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey | Project: Columbia Cement

Matrix: Water | Laboratory ID: RTJ1427-09 | File ID: S1231.D

Sampled: 10/14/10 08:37 | Prepared: 10/22/10 08:46 | Analyzed: 10/22/10 13:35

Solids: | Preparation: 5030B MS | Initial/Final: 5 mL / 5 mL

Batch: 10J1889 | Sequence: T004745 | Calibration: R10J104 | Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	140	
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-05-15D 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-09	File ID:	S1231.D
Sampled:	10/14/10 08:37	Prepared:	10/22/10 08:46	Analyzed:	10/22/10 13:35
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence: T004745	Calibration:	R10J104	Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.4	101	76 - 114	
4-Bromofluorobenzene	50.0	49.3	99	86 - 115	
Toluene-d8	50.0	49.5	99	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1366113	4.93	1381314	4.93	
Bromochloromethane	213661	4.19	218356	4.19	
Chlorobenzene-d5	1209549	7.13	1250730	7.13	

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-23D 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-10 File ID: S1223.D

Sampled: 10/14/10 11:58 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 20:03

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	2.9	J
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	14	
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	3.1	J
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-23D 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-10 File ID: S1223.D

Sampled: 10/14/10 11:58 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 20:03

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	25	

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.2	102	76 - 114	
4-Bromofluorobenzene	50.0	50.4	101	86 - 115	
Toluene-d8	50.0	49.8	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1338924	4.93	1434804	4.93	
Bromochloromethane	210171	4.19	223332	4.19	
Chlorobenzene-d5	1201100	7.13	1286302	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

DUP 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-11 File ID: S1224.D

Sampled: 10/14/10 13:00 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 20:24

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	2	20	UD
79-34-5	1,1,2,2-Tetrachloroethane	2	20	UD
79-00-5	1,1,2-Trichloroethane	2	20	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	2	20	UD
75-34-3	1,1-Dichloroethane	2	20	UD
75-35-4	1,1-Dichloroethene	2	20	UD
120-82-1	1,2,4-Trichlorobenzene	2	20	UD
96-12-8	1,2-Dibromo-3-chloropropane	2	20	UD
106-93-4	1,2-Dibromoethane (EDB)	2	20	UD
95-50-1	1,2-Dichlorobenzene	2	20	UD
107-06-2	1,2-Dichloroethane	2	20	UD
78-87-5	1,2-Dichloropropane	2	20	UD
541-73-1	1,3-Dichlorobenzene	2	20	UD
106-46-7	1,4-Dichlorobenzene	2	20	UD
78-93-3	2-Butanone (MEK)	2	20	UD
591-78-6	2-Hexanone	2	20	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	2	20	UD
67-64-1	Acetone	2	20	UD
71-43-2	Benzene	2	20	UD
75-27-4	Bromodichloromethane	2	20	UD
75-25-2	Bromoform	2	20	UD
74-83-9	Bromomethane	2	20	UD
75-15-0	Carbon disulfide	2	20	UD
56-23-5	Carbon Tetrachloride	2	20	UD
108-90-7	Chlorobenzene	2	20	UD
124-48-1	Chlorodibromomethane	2	20	UD
75-00-3	Chloroethane	2	20	UD
67-66-3	Chloroform	2	20	UD
74-87-3	Chloromethane	2	20	UD
156-59-2	cis-1,2-Dichloroethene	2	20	UD
10061-01-5	cis-1,3-Dichloropropene	2	20	UD
110-82-7	Cyclohexane	2	20	UD
75-71-8	Dichlorodifluoromethane	2	20	UD
100-41-4	Ethylbenzene	2	20	UD
98-82-8	Isopropylbenzene	2	20	UD
79-20-9	Methyl Acetate	2	20	UD
1634-04-4	Methyl tert-Butyl Ether	2	20	UD
108-87-2	Methylcyclohexane	2	20	UD
75-09-2	Methylene Chloride	2	20	UD

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

DUP 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-11	File ID:	S1224.D
Sampled:	10/14/10 13:00	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 20:24
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence:	T004731	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	2	20	UD
127-18-4	Tetrachloroethene	2	20	UD
108-88-3	Toluene	2	20	UD
156-60-5	trans-1,2-Dichloroethene	2	20	UD
10061-02-6	trans-1,3-Dichloropropene	2	20	UD
79-01-6	Trichloroethene	2	20	UD
75-69-4	Trichlorofluoromethane	2	20	UD
75-01-4	Vinyl chloride	2	20	UD
1330-20-7	Xylenes, total	2	20	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	11	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.5	103	76 - 114	D
4-Bromofluorobenzene	50.0	49.6	99	86 - 115	D
Toluene-d8	50.0	49.5	99	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1367355	4.93	1434804	4.93	
Bromochloromethane	213232	4.19	223332	4.19	
Chlorobenzene-d5	1228365	7.13	1286302	7.13	

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-22S 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-13 File ID: S1226.D

Sampled: 10/14/10 11:00 Prepared: 10/21/10 15:44 Analyzed: 10/21/10 21:08

Solids: Preparation: 5030B MS Initial/Final: 5 mL / 5 mL

Batch: 10J1798 Sequence: T004731 Calibration: R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	2.9	J
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-22S 101410

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1427	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1427-13	File ID:	S1226.D
Sampled:	10/14/10 11:00	Prepared:	10/21/10 15:44	Analyzed:	10/21/10 21:08
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1798	Sequence: T004731	Calibration:	R10J104	Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	13	

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.0	100	76 - 114	
4-Bromofluorobenzene	50.0	49.0	98	86 - 115	
Toluene-d8	50.0	49.0	98	88 - 110	
INTERNAL STANDARD	**AREA**	**RT**	**REF AREA**	**REF RT**	**Q**
1,4-Difluorobenzene	1338393	4.93	1434804	4.93	
Bromochloromethane	209782	4.19	223332	4.19	
Chlorobenzene-d5	1199681	7.13	1286302	7.13	

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-09-18S 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-01 File ID: 10192010AK-MR-024

Sampled: 10/13/10 08:35 Prepared: 10/19/10 08:56 Analyzed: 10/19/10 09:58

Solids: 0.00 Preparation: No prep Sulfate Initial/Final: 2 mL / 2 mL

Batch: 10J1547 Sequence: Calibration: Instrument: AquaKem v. 6.5 /

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	5.00	mg/L	1	U	9038

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-09-19D 101310

Laboratory: TestAmerica Buffalo
SDG: RTJ1427
Client: URS Corporation - Wayne, New Jersey
Project: Columbia Cement
Matrix: Water
Laboratory ID: RTJ1427-02
File ID: 10192010AK-MR-025
Sampled: 10/13/10 09:37
Prepared: 10/19/10 08:56
Analyzed: 10/19/10 10:01
Solids: 0.00
Preparation: No prep Sulfate
Initial/Final: 2 mL / 2 mL
Batch: 10J1547
Sequence:
Calibration:
Instrument: AquaKem v. 6.5 A

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	20.4	mg/L	1		9038

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-09-24S 101310

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-03 File ID: 10192010AK-MR-026

Sampled: 10/13/10 10:52 Prepared: 10/19/10 08:56 Analyzed: 10/19/10 10:01

Solids: 0.00 Preparation: No prep Sulfate Initial/Final: 2 mL / 2 mL

Batch: 10J1547 Sequence: Calibration: Instrument: AquaKem v. 6.5 A

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	10.1	mg/L	1		9038

J

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-05-14S 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-08 File ID: 10192010AK-MR-092

Sampled: 10/14/10 09:37 Prepared: 10/19/10 08:56 Analyzed: 10/19/10 11:07

Solids: 0.00 Preparation: No prep Sulfate Initial/Final: 2 mL / 2 mL

Batch: 10J1547 Sequence: Calibration: Instrument: AquaKem v. 6.5 /

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	106	mg/L	5	D	9038

QR 5/11/11

J

Form Rev: 9/21/10

Printed: 10/25/2010

Form 1

INORGANIC ANALYSIS DATA SHEET

9038

MW-05-15D 101410

Laboratory: TestAmerica Buffalo SDG: RTJ1427

Client: URS Corporation - Wayne, New Jersey Project: Columbia Cement

Matrix: Water Laboratory ID: RTJ1427-09 File ID: 10192010AK-MR-093

Sampled: 10/14/10 08:37 Prepared: 10/19/10 08:56 Analyzed: 10/19/10 11:11

Solids: 0.00 Preparation: No prep Sulfate Initial/Final: 2 mL / 2 mL

Batch: 10J1547 Sequence: Calibration: Instrument: AquaKem v. 6.5 /

CAS NO.	Analyte	Concentration	Units	Dilution Factor	Q	Method
14808-79-8	Sulfate	49.6	mg/L	5	D	9038

J

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: OCTOBER 20, 2010
JOB NO.: 11130274

LAB REPORT NO. RTJ1777

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008; and SW-846, 600 Series and Standard Methods for the Evaluation of Water and Wastewater, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of four groundwater samples, one trip blank and one field blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The conventional parameter data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Instrument Calibration and Verifications
* Laboratory Control Sample (LCS) Results

* Matrix Spike (MS) and Duplicate (DU) Summaries
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. RTJ1777

Sample ID	Lab ID	Date Collected	Test Requested
FB102010	RTJ1777-01	10/20/10	TCL VOA+10, Sulfate
TB102010	RTJ1777-02	10/20/10	TCL VOA+10
MW-09-20S	RTJ1777-03	10/20/10	TCL VOA+10, Sulfate
MW-07-16S	RTJ1777-04	10/20/10	TCL VOA+10, Sulfate
MW-07-17D	RTJ1777-05	10/20/10	TCL VOA+10, Sulfate
MW-09-21D	RTJ1777-06	10/20/10	TCL VOA+10, Sulfate

Legend:

TCL VOA	=	Target Compound List Volatile Organic Compounds plus Forward Library Searches analyzed following ASP 2005 CLP OLM04.3.
Sulfate	=	Analyzed following USEPA Method 9038.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiencies. Please note that these deficiencies, for the most part, do not impact data usability. The laboratory was contacted and the missing information requested. As of this writing, Test America-Buffalo has not provided the required information. This report may be amended upon the receipt of the laboratory corrections.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for TCL VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No TCL VOA contaminants were identified in the laboratory method/trip blanks associated with the groundwater samples received and reviewed. No qualifier is required.

- Acetone was detected in the field blank. However, it was not detected in any of the associated samples. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The TCL VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for TCL VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The response factor for trichloroethene did not meet the minimum requirement of 0.3 on the initial calibration associated with all the samples. The non-detected trichloroethene concentrations are qualified as estimated values "UJ".

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound 2-butanone the non-detected 2-butanone results for all the samples are qualified as estimated values and are flagged (UJ) on the laboratory summary pages and on the summary table.

- All other TCL VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples MW-09-20S and MW-09-21D were analyzed at a 1:5 dilution due to excessive foaming of the samples. No qualifier is required.

- Samples MW-07-16S and MW-07-17D were analyzed at a 1:4 dilution due to excessive foaming of the samples. No qualifier is required.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Tentatively Identified Compounds: In addition to the specific target compounds identified, 10 non-target volatile organic compounds of greatest apparent concentration were tentatively identified by a computerized search of the National Bureau of Standards (NBS) mass-spectral library. A mass-spectral interpretation specialist compares the sample mass-spectrum to the library search and assigns a tentative identification. The validity of the tentatively identified compounds (TICs) was evaluated based upon the identifications made by the laboratory, and the following comments are offered:

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for sulfate analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No sulfate contaminants were detected in the laboratory method and/or instrument/field blanks associated with the reviewed project samples. No qualifier is required.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for sulfate fell within control limits. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for sulfate analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The sulfate MS/MSD and/or DU (recoveries and RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The sulfate raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

FB102010

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-01	File ID:	S1232.D
Sampled:	10/20/10 13:40	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 17:49
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	3.1	J
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

QR 4/11/11

UJ

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

FB102010

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-01	File ID:	S1232.D
Sampled:	10/20/10 13:40	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 17:49
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104 Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.3	101	76 - 114	
4-Bromofluorobenzene	50.0	49.3	99	86 - 115	
Toluene-d8	50.0	49.8	100	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1430617	4.93	1381314	4.93	
Bromochloromethane	227711	4.19	218356	4.19	
Chlorobenzene-d5	1259041	7.13	1250730	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB102010

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-02	File ID:	S1233.D
Sampled:	10/20/10 00:00	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:10
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	10	U
79-34-5	1,1,2,2-Tetrachloroethane	1	10	U
79-00-5	1,1,2-Trichloroethane	1	10	U
76-13-1	1,1,2-Trichlorotrifluoroethane	1	10	U
75-34-3	1,1-Dichloroethane	1	10	U
75-35-4	1,1-Dichloroethene	1	10	U
120-82-1	1,2,4-Trichlorobenzene	1	10	U
96-12-8	1,2-Dibromo-3-chloropropane	1	10	U
106-93-4	1,2-Dibromoethane (EDB)	1	10	U
95-50-1	1,2-Dichlorobenzene	1	10	U
107-06-2	1,2-Dichloroethane	1	10	U
78-87-5	1,2-Dichloropropane	1	10	U
541-73-1	1,3-Dichlorobenzene	1	10	U
106-46-7	1,4-Dichlorobenzene	1	10	U
78-93-3	2-Butanone (MEK)	1	10	U
591-78-6	2-Hexanone	1	10	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	10	U
67-64-1	Acetone	1	10	U
71-43-2	Benzene	1	10	U
75-27-4	Bromodichloromethane	1	10	U
75-25-2	Bromoform	1	10	U
74-83-9	Bromomethane	1	10	U
75-15-0	Carbon disulfide	1	10	U
56-23-5	Carbon Tetrachloride	1	10	U
108-90-7	Chlorobenzene	1	10	U
124-48-1	Chlorodibromomethane	1	10	U
75-00-3	Chloroethane	1	10	U
67-66-3	Chloroform	1	10	U
74-87-3	Chloromethane	1	10	U
156-59-2	cis-1,2-Dichloroethene	1	10	U
10061-01-5	cis-1,3-Dichloropropene	1	10	U
110-82-7	Cyclohexane	1	10	U
75-71-8	Dichlorodifluoromethane	1	10	U
100-41-4	Ethylbenzene	1	10	U
98-82-8	Isopropylbenzene	1	10	U
79-20-9	Methyl Acetate	1	10	U
1634-04-4	Methyl tert-Butyl Ether	1	10	U
108-87-2	Methylcyclohexane	1	10	U
75-09-2	Methylene Chloride	1	10	U

QR 4/11/11

US

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

TB102010

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1777	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1777-02	File ID:	S1233.D
Sampled:	10/20/10 00:00	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:10
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	1	10	U
127-18-4	Tetrachloroethene	1	10	U
108-88-3	Toluene	1	10	U
156-60-5	trans-1,2-Dichloroethene	1	10	U
10061-02-6	trans-1,3-Dichloropropene	1	10	U
79-01-6	Trichloroethene	1	10	U
75-69-4	Trichlorofluoromethane	1	10	U
75-01-4	Vinyl chloride	1	10	U
1330-20-7	Xylenes, total	1	10	U

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.6	101	76 - 114	
4-Bromofluorobenzene	50.0	49.4	99	86 - 115	
Toluene-d8	50.0	49.7	99	88 - 110	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1331913	4.93	1381314	4.93	
Bromochloromethane	210343	4.19	218356	4.19	
Chlorobenzene-d5	1192137	7.13	1250730	7.13	

QP 3/11/11

UJ

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-20S

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-03	File ID:	S1234.D
Sampled:	10/20/10 13:12	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:31
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	50	UD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-20S

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1777	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1777-03	File ID:	S1234.D
Sampled:	10/20/10 13:12	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:31
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	5	50	UD
127-18-4	Tetrachloroethene	5	50	UD
108-88-3	Toluene	5	50	UD
156-60-5	trans-1,2-Dichloroethene	5	50	UD
10061-02-6	trans-1,3-Dichloropropene	5	50	UD
79-01-6	Trichloroethene	5	50	UD
75-69-4	Trichlorofluoromethane	5	50	UD
75-01-4	Vinyl chloride	5	50	UD
1330-20-7	Xylenes, total	5	50	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	UD

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.1	102	76 - 114	D
4-Bromofluorobenzene	50.0	49.9	100	86 - 115	D
Toluene-d8	50.0	50.2	100	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1327145	4.93	1381314	4.93	
Bromochloromethane	208656	4.19	218356	4.19	
Chlorobenzene-d5	1183855	7.13	1250730	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-07-16S

Laboratory:	TestAmerica Buffalo		SDG:	RTJ1777	
Client:	URS Corporation - Wayne, New Jersey		Project:	Columbia Cement	
Matrix:	Water	Laboratory ID:	RTJ1777-04	File ID:	S1235.D
Sampled:	10/20/10 10:25	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:52
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence: T004745	Calibration:	R10J104	Instrument: HP5973S

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	
71-55-6	1,1,1-Trichloroethane	4	40	UD	
79-34-5	1,1,2,2-Tetrachloroethane	4	40	UD	
79-00-5	1,1,2-Trichloroethane	4	40	UD	
76-13-1	1,1,2-Trichlorotrifluoroethane	4	40	UD	
75-34-3	1,1-Dichloroethane	4	40	UD	
75-35-4	1,1-Dichloroethene	4	40	UD	
120-82-1	1,2,4-Trichlorobenzene	4	40	UD	
96-12-8	1,2-Dibromo-3-chloropropane	4	40	UD	
106-93-4	1,2-Dibromoethane (EDB)	4	40	UD	
95-50-1	1,2-Dichlorobenzene	4	40	UD	
107-06-2	1,2-Dichloroethane	4	40	UD	
78-87-5	1,2-Dichloropropane	4	40	UD	OR 4/11/11
541-73-1	1,3-Dichlorobenzene	4	40	UD	
106-46-7	1,4-Dichlorobenzene	4	40	UD	
78-93-3	2-Butanone (MEK)	4	40	UD	UJ
591-78-6	2-Hexanone	4	40	UD	
108-10-1	4-Methyl-2-pentanone (MIBK)	4	40	UD	
67-64-1	Acetone	4	40	UD	
71-43-2	Benzene	4	40	UD	
75-27-4	Bromodichloromethane	4	40	UD	
75-25-2	Bromoform	4	40	UD	
74-83-9	Bromomethane	4	40	UD	
75-15-0	Carbon disulfide	4	40	UD	
56-23-5	Carbon Tetrachloride	4	40	UD	
108-90-7	Chlorobenzene	4	6.5	JD	✓
124-48-1	Chlorodibromomethane	4	40	UD	
75-00-3	Chloroethane	4	13	JD	✓
67-66-3	Chloroform	4	40	UD	
74-87-3	Chloromethane	4	40	UD	
156-59-2	cis-1,2-Dichloroethene	4	40	UD	
10061-01-5	cis-1,3-Dichloropropene	4	40	UD	
110-82-7	Cyclohexane	4	40	UD	
75-71-8	Dichlorodifluoromethane	4	40	UD	
100-41-4	Ethylbenzene	4	40	UD	
98-82-8	Isopropylbenzene	4	40	UD	
79-20-9	Methyl Acetate	4	40	UD	
1634-04-4	Methyl tert-Butyl Ether	4	40	UD	
108-87-2	Methylcyclohexane	4	40	UD	
75-09-2	Methylene Chloride	4	40	UD	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-07-16S

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-04	File ID:	S1235.D
Sampled:	10/20/10 10:25	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 18:52
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence: T004745		Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	4	40	UD
127-18-4	Tetrachloroethene	4	40	UD
108-88-3	Toluene	4	40	UD
156-60-5	trans-1,2-Dichloroethene	4	40	UD
10061-02-6	trans-1,3-Dichloropropene	4	40	UD
79-01-6	Trichloroethene	4	40	UD
75-69-4	Trichlorofluoromethane	4	40	UD
75-01-4	Vinyl chloride	4	40	UD
1330-20-7	Xylenes, total	4	40	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	51	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.4	103	76 - 114	D
4-Bromofluorobenzene	50.0	50.1	100	86 - 115	D
Toluene-d8	50.0	50.3	101	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1341754	4.93	1381314	4.93	
Bromochloromethane	210651	4.19	218356	4.19	
Chlorobenzene-d5	1190604	7.13	1250730	7.13	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-07-17D

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-05	File ID:	S1236.D
Sampled:	10/20/10 11:13	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 19:14
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	
71-55-6	1,1,1-Trichloroethane	4	40	UD	
79-34-5	1,1,2,2-Tetrachloroethane	4	40	UD	
79-00-5	1,1,2-Trichloroethane	4	40	UD	
76-13-1	1,1,2-Trichlorotrifluoroethane	4	40	UD	
75-34-3	1,1-Dichloroethane	4	40	UD	
75-35-4	1,1-Dichloroethene	4	40	UD	
120-82-1	1,2,4-Trichlorobenzene	4	40	UD	
96-12-8	1,2-Dibromo-3-chloropropane	4	40	UD	
106-93-4	1,2-Dibromoethane (EDB)	4	40	UD	
95-50-1	1,2-Dichlorobenzene	4	40	UD	
107-06-2	1,2-Dichloroethane	4	40	UD	
78-87-5	1,2-Dichloropropane	4	40	UD	QL 4/11
541-73-1	1,3-Dichlorobenzene	4	40	UD	
106-46-7	1,4-Dichlorobenzene	4	40	UD	
78-93-3	2-Butanone (MEK)	4	40	UD	UJ
591-78-6	2-Hexanone	4	40	UD	
108-10-1	4-Methyl-2-pentanone (MIBK)	4	40	UD	
67-64-1	Acetone	4	40	UD	
71-43-2	Benzene	4	40	UD	
75-27-4	Bromodichloromethane	4	40	UD	
75-25-2	Bromoform	4	40	UD	
74-83-9	Bromomethane	4	40	UD	
75-15-0	Carbon disulfide	4	40	UD	
56-23-5	Carbon Tetrachloride	4	40	UD	
108-90-7	Chlorobenzene	4	9.1	JD	✓
124-48-1	Chlorodibromomethane	4	40	UD	
75-00-3	Chloroethane	4	31	JD	✓
67-66-3	Chloroform	4	40	UD	
74-87-3	Chloromethane	4	40	UD	
156-59-2	cis-1,2-Dichloroethene	4	40	UD	
10061-01-5	cis-1,3-Dichloropropene	4	40	UD	
110-82-7	Cyclohexane	4	40	UD	
75-71-8	Dichlorodifluoromethane	4	40	UD	
100-41-4	Ethylbenzene	4	40	UD	
98-82-8	Isopropylbenzene	4	40	UD	
79-20-9	Methyl Acetate	4	40	UD	
1634-04-4	Methyl tert-Butyl Ether	4	40	UD	
108-87-2	Methylcyclohexane	4	40	UD	
75-09-2	Methylene Chloride	4	40	UD	

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-07-17D

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-05	File ID:	S1236.D
Sampled:	10/20/10 11:13	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 19:14
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	4	40	UD
127-18-4	Tetrachloroethene	4	40	UD
108-88-3	Toluene	4	40	UD
156-60-5	trans-1,2-Dichloroethene	4	40	UD
10061-02-6	trans-1,3-Dichloropropene	4	40	UD
79-01-6	Trichloroethene	4	40	UD
75-69-4	Trichlorofluoromethane	4	40	UD
75-01-4	Vinyl chloride	4	40	UD
1330-20-7	Xylenes, total	4	40	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
000496-11-7	Indane	9.211	44	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.5	103	76 - 114	D
4-Bromofluorobenzene	50.0	49.9	100	86 - 115	D
Toluene-d8	50.0	49.9	100	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1326872	4.93	1381314	4.93	
Bromochloromethane	205656	4.19	218356	4.19	
Chlorobenzene-d5	1171930	7.13	1250730	7.13	

QR 4/11/11

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Form 1

ORGANIC ANALYSIS DATA SHEET

EPA VOA

MW-09-21D

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-06	File ID:	S1237.D
Sampled:	10/20/10 12:17	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 19:35
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	5	50	UD
79-34-5	1,1,2,2-Tetrachloroethane	5	50	UD
79-00-5	1,1,2-Trichloroethane	5	50	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	5	50	UD
75-34-3	1,1-Dichloroethane	5	50	UD
75-35-4	1,1-Dichloroethene	5	50	UD
120-82-1	1,2,4-Trichlorobenzene	5	50	UD
96-12-8	1,2-Dibromo-3-chloropropane	5	50	UD
106-93-4	1,2-Dibromoethane (EDB)	5	50	UD
95-50-1	1,2-Dichlorobenzene	5	50	UD
107-06-2	1,2-Dichloroethane	5	50	UD
78-87-5	1,2-Dichloropropane	5	50	UD
541-73-1	1,3-Dichlorobenzene	5	50	UD
106-46-7	1,4-Dichlorobenzene	5	50	UD
78-93-3	2-Butanone (MEK)	5	50	UD
591-78-6	2-Hexanone	5	50	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	5	50	UD
67-64-1	Acetone	5	50	UD
71-43-2	Benzene	5	50	UD
75-27-4	Bromodichloromethane	5	50	UD
75-25-2	Bromoform	5	50	UD
74-83-9	Bromomethane	5	50	UD
75-15-0	Carbon disulfide	5	50	UD
56-23-5	Carbon Tetrachloride	5	50	UD
108-90-7	Chlorobenzene	5	50	UD
124-48-1	Chlorodibromomethane	5	50	UD
75-00-3	Chloroethane	5	50	UD
67-66-3	Chloroform	5	50	UD
74-87-3	Chloromethane	5	50	UD
156-59-2	cis-1,2-Dichloroethene	5	50	UD
10061-01-5	cis-1,3-Dichloropropene	5	50	UD
110-82-7	Cyclohexane	5	50	UD
75-71-8	Dichlorodifluoromethane	5	50	UD
100-41-4	Ethylbenzene	5	50	UD
98-82-8	Isopropylbenzene	5	50	UD
79-20-9	Methyl Acetate	5	50	UD
1634-04-4	Methyl tert-Butyl Ether	5	50	UD
108-87-2	Methylcyclohexane	5	50	UD
75-09-2	Methylene Chloride	5	50	UD

QL 4/nl

UJ

Form 1

ORGANIC ANALYSIS DATA SHEET

MW-09-21D

EPA VOA

Laboratory:	TestAmerica Buffalo			SDG:	RTJ1777
Client:	URS Corporation - Wayne, New Jersey			Project:	Columbia Cement
Matrix:	Water	Laboratory ID:	RTJ1777-06	File ID:	S1237.D
Sampled:	10/20/10 12:17	Prepared:	10/22/10 09:46	Analyzed:	10/22/10 19:35
Solids:		Preparation:	5030B MS	Initial/Final:	5 mL / 5 mL
Batch:	10J1889	Sequence:	T004745	Calibration:	R10J104
Instrument:	HP5973S				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
100-42-5	Styrene	5	50	UD
127-18-4	Tetrachloroethene	5	50	UD
108-88-3	Toluene	5	50	UD
156-60-5	trans-1,2-Dichloroethene	5	50	UD
10061-02-6	trans-1,3-Dichloropropene	5	50	UD
79-01-6	Trichloroethene	5	50	UD
75-69-4	Trichlorofluoromethane	5	50	UD
75-01-4	Vinyl chloride	5	50	UD
1330-20-7	Xylenes, total	5	50	UD

CAS NO.	TENTATIVELY IDENTIFIED COMPOUND	RT	EST. CONC. (ug/L)	Q
NOTICS	No TICs found		0.0	UD

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	51.4	103	76 - 114	D
4-Bromofluorobenzene	50.0	49.4	99	86 - 115	D
Toluene-d8	50.0	50.2	100	88 - 110	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Difluorobenzene	1337325	4.93	1381314	4.93	
Bromochloromethane	211092	4.19	218356	4.19	
Chlorobenzene-d5	1186448	7.13	1250730	7.13	

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: OCTOBER 10 AND 11, 2011
JOB NO.: 11130289

LAB REPORT NO. 480-11107-1

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008; and SW-846, 600 Series and Standard Methods for the Evaluation of Water and Wastewater, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of nine groundwater samples, one field blank sample and one trip blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
  Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The conventional parameter data quality review is based on the following parameters:

* Hold Times
  Blank Contamination
* Instrument Calibration and Verifications
* Laboratory Control Sample (LCS) Results

Matrix Spike (MS) and Duplicate (DU) Summaries
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. 480-11107-1

Sample ID	Lab ID	Date Collected	Test Requested
MW-09-24S	480-11107-1	10/10/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-25D	480-11107-2	10/10/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-19D	480-11107-3	10/10/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-18S	480-11107-4	10/10/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-26D	480-11107-5	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-05-14S	480-11107-6	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-05-15D	480-11107-7	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
FB101111	480-11107-8	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-23D	480-11107-9	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-22S	480-11107-10	10/11/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
TB101111	480-11107-11	10/11/11	VOA

Legend:

VOA	=	Analyzed following USEPA CLP-VOA.
Methane/Ethane/ Ethene	=	Analyzed following USEPA RSK 175.
Sulfate	=	Analyzed following USEPA Method 9038.
TOC	=	Total Organic Carbon following USEPA Method 9060.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiencies. Please note that these deficiencies, for the most part, do not impact data usability. The laboratory was contacted and the missing information requested. As of this writing, Test America-Buffalo has not provided the required information. This report may be amended upon the receipt of the laboratory corrections.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for TCL VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C ($\pm$2° C) requirement. No qualifier is required.

- The samples for Methane/Ethane/Ethene were analyzed within the required holding time. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No TCL VOA and methane/ethane/ethane contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

- The chloroethane concentrations reported in all the samples are negated due to field blank contamination.

- No other TCL VOA and methane/ethane/ethane contaminants were identified in the field/trip blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The TCL VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

- Volatile surrogate compounds are not associated with Methane/Ethane/Ethene analyses. Therefore, no comments are offered regarding possible matrix effects and overall analytical accuracy. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for TCL VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compounds bromomethane, acetone and 2-butanone, the detected and non-detected bromomethane, acetone and 2-butanone results for sample MW-09-24S are qualified as estimated values and are flagged (J) and (UJ) on the laboratory summary pages and on the summary table.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compounds acetone and chloroethane, the detected and non-detected acetone and chloroethane results for all the samples except MW-09-24S are qualified as estimated values and are flagged (J) and (UJ) on the laboratory summary pages and on the summary table.

- The continuing calibration did not meet the minimum requirement of 0.30 for trichloroethene. The detected and non-detected trichloroethene results for all the samples with the exception of sample MW-09-24S are qualified as estimated values (J) and (UJ).

- All other TCL VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

- The Methane/Ethane/Ethene target compounds initial and continuing calibration response factors, %RSD, and %D associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- The laboratory control sample was outside the acceptable QC limits (biased low) for methane. The detected and non-detected methane results reported for all the samples are qualified as estimated values (J) and (UJ). The results may be biased low.

- All other Methane/Ethane/Ethene MS/MSD results (recoveries and relative percent differences or RPD) and BS recoveries fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples MW-09-23D and MW-09-22S were analyzed at a 1:2 dilution for VOA resulting in elevated detection limits due to foaming in the samples. No qualifier is required.

- Samples MW-09-19D and MW-05-15D were analyzed at a 1:4 dilution for VOA resulting in elevated detection limits due to high concentration of target analytes in the samples. No qualifier is required.

- All samples were analyzed at 1:100 dilutions for methane resulting in elevated detection limits, due to the target compound methane concentrations exceeding the linear calibration range requirements. No qualifier is required.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Tentatively Identified Compounds: In addition to the specific target compounds identified, 10 non-target volatile organic compounds of greatest apparent concentration were tentatively identified by a computerized search of the National Bureau of Standards (NBS) mass-spectral library. A mass-spectral interpretation specialist compares the sample mass-spectrum to the library search and assigns a tentative identification. The validity of the tentatively identified compounds (TICs) was evaluated based upon the identifications made by the laboratory, and the following comments are offered:

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for the conventional parameters (sulfate and TOC) analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No TOC contaminants were detected in the laboratory method blanks associated with the reviewed project samples. No qualifier is required.

- The sulfate concentration reported for sample FB101111 is qualified as an estimated value “J” due to method blank contamination.

- The sulfate concentration reported for sample MW-09-23D is negated due to method blank contamination.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for the conventional parameters fell within control limits. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for the conventional parameter analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The matrix spike for sulfate was outside acceptable QC limits (biased low). The detected and non-detected sulfate results reported for all the samples are qualified as estimated values (J) and (UJ). The results may be biased low.

- All other conventional parameters MS/MSD and/or DU (recoveries and RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The conventional parameters raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

- The following samples were analyzed at elevated dilutions for sulfate resulting in elevated detection limits, due to the target compound sulfate concentrations exceeding the linear calibration range requirements. No qualifier is required.

MW-09-24S (1:5)
MW-05-15D (1:1210)

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-24S**

Lab Sample ID: 480-11107-1
Client Matrix: Water

Date Sampled: 10/10/2011 1015
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35934	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5905.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/18/2011 1545			Final Weight/Volume:	5 mL
Prep Date:	10/18/2011 1545				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.7	J	1.1	10
2-Butanone (MEK)	ND J		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND J		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	13	13U	2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-25D**

Lab Sample ID: 480-11107-2
Client Matrix: Water

Date Sampled: 10/10/2011 0925
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5889.D
Dilution:	1.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0025			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0025				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.9	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	16 164J OR 12/14		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND J		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-19D**

Lab Sample ID: 480-11107-3
Client Matrix: Water

Date Sampled: 10/10/2011 0920
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35582	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5868.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2011 1736			Final Weight/Volume:	5 mL
Prep Date:	10/15/2011 1736				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	3.3	J	2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	130		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.9	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	440	E	2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	0.72	J	0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND J		1.9	10
Trichlorofluoromethane	ND		1.3	10

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-19D**

Lab Sample ID: 480-11107-3
Client Matrix: Water

Date Sampled: 10/10/2011 0920
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35934	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5904.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/18/2011 1430	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	10/18/2011 1430				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.4	40
1,1,2,2-Tetrachloroethane	ND		6.0	40
1,1,2-Trichloroethane	ND		7.6	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.0	40
1,1-Dichloroethane	120		6.8	40
1,1-Dichloroethene	ND		10	40
1,2,4-Trichlorobenzene	ND		2.3	40
1,2-Dibromo-3-Chloropropane	ND		20	40
1,2-Dibromoethane	ND		8.0	40
1,2-Dichlorobenzene	ND		4.8	40
1,2-Dichloroethane	ND		3.3	40
1,2-Dichloropropane	ND		6.8	40
1,3-Dichlorobenzene	ND		4.8	40
1,4-Dichlorobenzene	ND		4.4	40
2-Butanone (MEK)	ND		6.0	40
2-Hexanone	ND		7.2	40
4-Methyl-2-pentanone (MIBK)	ND		6.8	40
Acetone	ND	J	7.6	40
Benzene	ND		6.4	40
Dichlorobromomethane	ND		6.0	40
Bromoform	ND		20	40
Bromomethane	ND		17	40
Carbon disulfide	ND		8.4	40
Carbon tetrachloride	ND		8.0	40
Chlorobenzene	ND		6.4	40
Chlorodibromomethane	ND		6.8	40
Chloroethane	340	340 UJ	10	40
Chloroform	ND		7.6	40
Chloromethane	ND		9.2	40
cis-1,2-Dichloroethene	ND	QL 12/14	7.2	40
cis-1,3-Dichloropropene	ND		5.6	40
Cyclohexane	ND		2.3	40
Dichlorodifluoromethane	ND		8.4	40
Ethylbenzene	ND		6.4	40
Isopropylbenzene	ND		1.5	40
Methyl acetate	ND		2.7	40
Methyl tert-butyl ether	ND		1.8	40
Methylcyclohexane	ND		2.4	40
Methylene Chloride	ND		5.2	40
Styrene	ND		6.8	40
Tetrachloroethene	ND		8.4	40
Toluene	ND		6.4	40
trans-1,2-Dichloroethene	ND		7.6	40
trans-1,3-Dichloropropene	ND		6.4	40
Trichloroethene	ND	J	7.6	40
Trichlorofluoromethane	ND		5.2	40

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-18S**

Lab Sample ID: 480-11107-4
Client Matrix: Water

Date Sampled: 10/10/2011 1025
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35582	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5869.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2011 1906			Final Weight/Volume:	5 mL
Prep Date:	10/15/2011 1906				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	1.6	J	1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	79 79 UJ		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND QR 12/14		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND J		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-26D**

Lab Sample ID: 480-11107-5
Client Matrix: Water

Date Sampled: 10/11/2011 1030
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35582	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5870.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2011 1931			Final Weight/Volume:	5 mL
Prep Date:	10/15/2011 1931				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	2.4	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	13		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	35 35 UJ		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND OK 12/14		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND J		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-05-14S**

Lab Sample ID: 480-11107-6
Client Matrix: Water

Date Sampled: 10/11/2011 0855
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35582	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5871.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2011 1956			Final Weight/Volume:	5 mL
Prep Date:	10/15/2011 1956				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND J		1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	4.7	J NOD J	2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND J		1.9	10
Trichlorofluoromethane	ND		1.3	10

QP 3/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-05-15D

Lab Sample ID: 480-11107-7
Client Matrix: Water

Date Sampled: 10/11/2011 0900
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5891.D
Dilution:	4.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0114			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0114				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.4	40
1,1,2,2-Tetrachloroethane	ND		6.0	40
1,1,2-Trichloroethane	ND		7.6	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.0	40
1,1-Dichloroethane	140		6.8	40
1,1-Dichloroethene	ND		10	40
1,2,4-Trichlorobenzene	ND		2.3	40
1,2-Dibromo-3-Chloropropane	ND		20	40
1,2-Dibromoethane	ND		8.0	40
1,2-Dichlorobenzene	ND		4.8	40
1,2-Dichloroethane	ND		3.3	40
1,2-Dichloropropane	ND		6.8	40
1,3-Dichlorobenzene	ND		4.8	40
1,4-Dichlorobenzene	ND		4.4	40
2-Butanone (MEK)	ND		6.0	40
2-Hexanone	ND		7.2	40
4-Methyl-2-pentanone (MIBK)	ND		6.8	40
Acetone	ND	J	7.6	40
Benzene	ND		6.4	40
Dichlorobromomethane	ND		6.0	40
Bromoform	ND		20	40
Bromomethane	ND		17	40
Carbon disulfide	ND		8.4	40
Carbon tetrachloride	ND		8.0	40
Chlorobenzene	ND		6.4	40
Chlorodibromomethane	ND		6.8	40
Chloroethane	430	430 UJ OR 12/14	10	40
Chloroform	ND		7.6	40
Chloromethane	ND		9.2	40
cis-1,2-Dichloroethene	ND		7.2	40
cis-1,3-Dichloropropene	ND		5.6	40
Cyclohexane	ND		2.3	40
Dichlorodifluoromethane	ND		8.4	40
Ethylbenzene	ND		6.4	40
Isopropylbenzene	ND		1.5	40
Methyl acetate	ND		2.7	40
Methyl tert-butyl ether	ND		1.8	40
Methylcyclohexane	ND		2.4	40
Methylene Chloride	ND		5.2	40
Styrene	ND		6.8	40
Tetrachloroethene	ND		8.4	40
Toluene	ND		6.4	40
trans-1,2-Dichloroethene	ND		7.6	40
trans-1,3-Dichloropropene	ND		6.4	40
Trichloroethene	ND	J	7.6	40
Trichlorofluoromethane	ND		5.2	40

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: FB101111

Lab Sample ID: 480-11107-8
Client Matrix: Water

Date Sampled: 10/11/2011 1120
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5892.D
Dilution:	1.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0139			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0139				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND	J	1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	97	J	2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND	J	1.9	10
Trichlorofluoromethane	ND		1.3	10

GR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-23D**

Lab Sample ID: 480-11107-9
Client Matrix: Water

Date Sampled: 10/11/2011 1320
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5893.D
Dilution:	2.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0204			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0204				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		4.2	20
1,1,2,2-Tetrachloroethane	ND		3.0	20
1,1,2-Trichloroethane	ND		3.8	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.0	20
1,1-Dichloroethane	ND		3.4	20
1,1-Dichloroethene	ND		5.0	20
1,2,4-Trichlorobenzene	ND		1.1	20
1,2-Dibromo-3-Chloropropane	ND		10	20
1,2-Dibromoethane	ND		4.0	20
1,2-Dichlorobenzene	ND		2.4	20
1,2-Dichloroethane	ND		1.7	20
1,2-Dichloropropane	ND		3.4	20
1,3-Dichlorobenzene	ND		2.4	20
1,4-Dichlorobenzene	ND		2.2	20
2-Butanone (MEK)	ND		3.0	20
2-Hexanone	ND		3.6	20
4-Methyl-2-pentanone (MIBK)	ND		3.4	20
Acetone	ND	J	3.8	20
Benzene	ND		3.2	20
Dichlorobromomethane	ND		3.0	20
Bromoform	ND		10	20
Bromomethane	ND		8.6	20
Carbon disulfide	ND		4.2	20
Carbon tetrachloride	ND		4.0	20
Chlorobenzene	ND		3.2	20
Chlorodibromomethane	ND		3.4	20
Chloroethane	ND	J	5.0	20
Chloroform	ND		3.8	20
Chloromethane	ND		4.6	20
cis-1,2-Dichloroethene	ND		3.6	20
cis-1,3-Dichloropropene	ND		2.8	20
Cyclohexane	ND		1.2	20
Dichlorodifluoromethane	ND		4.2	20
Ethylbenzene	ND		3.2	20
Isopropylbenzene	ND		0.75	20
Methyl acetate	ND		1.3	20
Methyl tert-butyl ether	ND		0.91	20
Methylcyclohexane	ND		1.2	20
Methylene Chloride	ND		2.6	20
Styrene	ND		3.4	20
Tetrachloroethene	ND		4.2	20
Toluene	ND		3.2	20
trans-1,2-Dichloroethene	ND		3.8	20
trans-1,3-Dichloropropene	ND		3.2	20
Trichloroethene	ND	J	3.8	20
Trichlorofluoromethane	ND		2.6	20

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-22S

Lab Sample ID: 480-11107-10
Client Matrix: Water

Date Sampled: 10/11/2011 1315
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5894.D
Dilution:	2.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0229			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0229				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		4.2	20
1,1,2,2-Tetrachloroethane	ND		3.0	20
1,1,2-Trichloroethane	ND		3.8	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.0	20
1,1-Dichloroethane	ND		3.4	20
1,1-Dichloroethene	ND		5.0	20
1,2,4-Trichlorobenzene	ND		1.1	20
1,2-Dibromo-3-Chloropropane	ND		10	20
1,2-Dibromoethane	ND		4.0	20
1,2-Dichlorobenzene	ND		2.4	20
1,2-Dichloroethane	ND		1.7	20
1,2-Dichloropropane	ND		3.4	20
1,3-Dichlorobenzene	ND		2.4	20
1,4-Dichlorobenzene	2.6	J	2.2	20
2-Butanone (MEK)	ND		3.0	20
2-Hexanone	ND		3.6	20
4-Methyl-2-pentanone (MIBK)	ND		3.4	20
Acetone	ND J		3.8	20
Benzene	ND		3.2	20
Dichlorobromomethane	ND		3.0	20
Bromoform	ND		10	20
Bromomethane	ND		8.6	20
Carbon disulfide	ND		4.2	20
Carbon tetrachloride	ND		4.0	20
Chlorobenzene	ND		3.2	20
Chlorodibromomethane	ND		3.4	20
Chloroethane	ND J		5.0	20
Chloroform	ND		3.8	20
Chloromethane	ND		4.6	20
cis-1,2-Dichloroethene	ND		3.6	20
cis-1,3-Dichloropropene	ND		2.8	20
Cyclohexane	ND		1.2	20
Dichlorodifluoromethane	ND		4.2	20
Ethylbenzene	ND		3.2	20
Isopropylbenzene	ND		0.75	20
Methyl acetate	ND		1.3	20
Methyl tert-butyl ether	ND		0.91	20
Methylcyclohexane	ND		1.2	20
Methylene Chloride	ND		2.6	20
Styrene	ND		3.4	20
Tetrachloroethene	ND		4.2	20
Toluene	ND		3.2	20
trans-1,2-Dichloroethene	ND		3.8	20
trans-1,3-Dichloropropene	ND		3.2	20
Trichloroethene	ND J		3.8	20
Trichlorofluoromethane	ND		2.6	20

GP 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **TB101111**

Lab Sample ID: 480-11107-11TB
Client Matrix: Water

Date Sampled: 10/11/2011 1315
Date Received: 10/12/2011 1010

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-35817	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P5895.D
Dilution:	1.0			Initial Weight/Volume:	1 uL
Analysis Date:	10/18/2011 0253			Final Weight/Volume:	1 uL
Prep Date:	10/18/2011 0253				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND	J	1.9	10
Benzene	ND		1.6	10
Dichlorobromomethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	ND	J	2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND		2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND	J	1.9	10
Trichlorofluoromethane	ND		1.3	10

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-24S

Lab Sample ID: 480-11107-1
Client Matrix: Water

Date Sampled: 10/10/2011 1015
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1755			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	3100	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-25D**

Lab Sample ID: 480-11107-2
Client Matrix: Water

Date Sampled: 10/10/2011 0925
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1824			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	6500	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-19D

Lab Sample ID: 480-11107-3
Client Matrix: Water

Date Sampled: 10/10/2011 0920
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1838			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	6600	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **MW-09-18S**

Lab Sample ID: 480-11107-4
Client Matrix: Water

Date Sampled: 10/10/2011 1025
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1852			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	6600	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-26D

Lab Sample ID: 480-11107-5
Client Matrix: Water

Date Sampled: 10/11/2011 1030
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1907			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	11000	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-05-14S

Lab Sample ID: 480-11107-6
Client Matrix: Water

Date Sampled: 10/11/2011 0855
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 1921			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	5500	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-05-15D

Lab Sample ID: 480-11107-7
Client Matrix: Water

Date Sampled: 10/11/2011 0900
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 2021			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	1200	* J	22	100

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: **FB101111**

Lab Sample ID: 480-11107-8
Client Matrix: Water

Date Sampled: 10/11/2011 1120
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 2131			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		0.49	1.5
Ethene	ND		0.52	1.5
Methane	ND	* J	0.22	1.0

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-23D

Lab Sample ID: 480-11107-9
Client Matrix: Water

Date Sampled: 10/11/2011 1320
Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 2049			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	5700	* J	22	100

QR
12/14

Client: URS Corporation

Job Number: 480-11107-1

Client Sample ID: MW-09-22S

Lab Sample ID: 480-11107-10

Client Matrix: Water

Date Sampled: 10/11/2011 1315

Date Received: 10/12/2011 1010

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-35319	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/13/2011 2103			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	8500	* J	22	100

QR 12/14

General Chemistry

Client Sample ID: MW-09-24S

Lab Sample ID: 480-11107-1

Client Matrix: Water

Date Sampled: 10/10/2011 1015

Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	23.7	J	mg/L	7.5	25.0	5.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0850						
Total Organic Carbon	10.7		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1424						

J AR 12/14

General Chemistry

Client Sample ID: MW-09-25D

Lab Sample ID: 480-11107-2
Client Matrix: Water

Date Sampled: 10/10/2011 0925
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	ND		mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0843						
Total Organic Carbon	14.0		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1455						

J

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

General Chemistry

Client Sample ID: MW-09-19D

Lab Sample ID: 480-11107-3
Client Matrix: Water

Date Sampled: 10/10/2011 0920
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method	
Sulfate	7.5		mg/L	1.5	5.0	1.0	9038	J
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0843							
Total Organic Carbon	9.4		mg/L	0.43	1.0	1.0	9060	AR 12/14
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1524							

General Chemistry

Client Sample ID: **MW-09-18S**

Lab Sample ID: 480-11107-4
Client Matrix: Water

Date Sampled: 10/10/2011 1025
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.6	J	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0843						
Total Organic Carbon	7.3		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1624						

J

QR 12/14

Client: URS Corporation

Job Number: 480-11107-1

General Chemistry

Client Sample ID: MW-09-26D

Lab Sample ID: 480-11107-5
Client Matrix: Water

Date Sampled: 10/11/2011 1030
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.7	J	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-38032	Analysis Date: 10/29/2011 1323						
Total Organic Carbon	5.3		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1825						

J
QA2 12/14

General Chemistry

Client Sample ID: MW-05-14S

Lab Sample ID: 480-11107-6
Client Matrix: Water

Date Sampled: 10/11/2011 0855
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	23.2	B	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0905						
Total Organic Carbon	7.2		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1854						

J
QA
12/14

General Chemistry

Client Sample ID: **MW-05-15D**

Lab Sample ID: 480-11107-7
Client Matrix: Water

Date Sampled: 10/11/2011 0900
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	7060		mg/L	1820	6050	1210	9038
Analysis Batch: 480-38833	Analysis Date: 11/03/2011 1211						
Total Organic Carbon	9.1		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1925						

J
QR
12/14

General Chemistry

Client Sample ID: FB101111

Lab Sample ID: 480-11107-8
Client Matrix: Water

Date Sampled: 10/11/2011 1120
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method	
Sulfate	10.9	B	mg/L	1.5	5.0	1.0	9038	J
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0905							
Total Organic Carbon	ND		mg/L	0.43	1.0	1.0	9060	QL 12/14
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 1954							

General Chemistry

Client Sample ID: MW-09-23D

Lab Sample ID: 480-11107-9
Client Matrix: Water

Date Sampled: 10/11/2011 1320
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	2.2	J B	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0905						
Total Organic Carbon	10.9		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 2024						

ND J
QR
12/14

General Chemistry

Client Sample ID: **MW-09-22S**

Lab Sample ID: 480-11107-10
Client Matrix: Water

Date Sampled: 10/11/2011 1315
Date Received: 10/12/2011 1010

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	2.0	J B	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-37673	Analysis Date: 10/27/2011 0924						
Total Organic Carbon	11.2		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-35613	Analysis Date: 10/14/2011 2054						

J
QP
12/14

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: OCTOBER 20, 2011
JOB NO.: 11130289

LAB REPORT NO. 480-11745-1

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008; and SW-846, 600 Series and Standard Methods for the Evaluation of Water and Wastewater, 18th Edition (Standard Methods) methodologies. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of four groundwater samples, one field duplicate sample and one trip blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

The conventional parameter data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* Instrument Calibration and Verifications
* Laboratory Control Sample (LCS) Results

Matrix Spike (MS) and Duplicate (DU) Summaries
* Target Analyte Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. 480-11745-1

Sample ID	Lab ID	Date Collected	Test Requested
TB102011	480-11745-1	10/20/11	VOA
MW-07-16S	480-11745-2	10/20/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-07-17D	480-11745-3	10/20/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-20S	480-11745-4	10/20/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
MW-09-21D	480-11745-5	10/20/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC
DUP102011	480-11745-6	10/20/11	VOA, Methane/Ethane/Ethene, Sulfate and TOC

Legend:

VOA	=	Analyzed following USEPA CLP-VOA.
Methane/Ethane/ Ethene	=	Analyzed following USEPA RSK 175.
Sulfate	=	Analyzed following USEPA Method 9038.
TOC	=	Total Organic Carbon following USEPA Method 9060.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiencies. Please note that these deficiencies, for the most part, do not impact data usability. The laboratory was contacted and the missing information requested. As of this writing, Test America-Buffalo has not provided the required information. This report may be amended upon the receipt of the laboratory corrections.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for TCL VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (±2° C) requirement. No qualifier is required.

- The samples for Methane/Ethane/Ethene were analyzed within the required holding time. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- The carbon disulfide and methylene chloride concentrations detected in the samples are negated due to method blank contamination.

- The acetone concentrations detected in the samples are negated due to trip blank contamination.

- The tentatively identified compound dibromomethane (RT 4.49) detected in the samples is negated due to method blank contamination.

- No other TCL VOA contaminants were identified in the laboratory method/trip blanks associated with the groundwater samples received and reviewed. No qualifier is required.

- No methane/ethane/ethane contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The TCL VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

- Volatile surrogate compounds are not associated with Methane/Ethane/Ethene analyses. Therefore, no comments are offered regarding possible matrix effects and overall analytical accuracy. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for TCL VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound acetone, the detected and non-detected acetone results for all the samples are qualified as estimated values and are flagged (J) and (UJ) on the laboratory summary pages and on the summary table.

- All other TCL VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

- The Methane/Ethane/Ethene target compounds initial and continuing calibration response factors, %RSD, and %D associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- The Methane/Ethane/Ethene MS/MSD results (recoveries and relative percent differences or RPD) and BS recoveries fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP102011 was collected as a field duplicate of sample MW-07-16S. The RPD was met for all VOA and Methane/Ethane/Ethene compounds indicating overall precision. No qualifier is required.

Target Compound Identification Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- The following samples were analyzed at elevated dilutions for methane resulting in elevated detection limits, due to the target compound methane concentrations exceeding the linear calibration range requirements. No qualifier is required.

  MW-07-16S (1:100)
  MW-07-17D (1:100)
  MW-09-20S (1:100)
  MW-09-21D (1:100)

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Tentatively Identified Compounds: In addition to the specific target compounds identified, 10 non-target volatile organic compounds of greatest apparent concentration were tentatively identified by a computerized search of the National Bureau of Standards (NBS) mass-spectral library. A mass-spectral interpretation specialist compares the sample mass-spectrum to the library search and assigns a tentative identification. The validity of the tentatively identified compounds (TICs) was evaluated based upon the identifications made by the laboratory, and the following comments are offered:

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

3.3 CONVENTIONAL PARAMETER QUALIFIERS

Hold Times: Technical hold times are assessed by comparing the sampling dates with that of the preparation dates and/or analysis dates.

- The reviewed project samples were prepared and/or analyzed within the required hold time for the conventional parameters (sulfate and TOC) analyses. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis, or from a previous sample (instrument carry-over).

- No conventional parameter contaminants were detected in the laboratory method blanks associated with the reviewed project samples. No qualifier is required.

Instrument Calibration and Verifications: Control limits for initial and continuing calibration verifications (ICV and CCV) are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- The initial and continuing calibration verification (ICV/CCV) standard recoveries for the conventional parameters fell within control limits. No qualifier is required.

Laboratory Control Sample Results: The laboratory control sample (LCS) is a blank sample fortified (spiked) with known concentrations of analytes of interest. The percent recoveries are used to assess extraction efficiencies and overall analytical accuracy.

- LCS recoveries fell within control limits for the conventional parameter analyses. No qualifier is required.

Matrix Spike (MS) and Duplicate (DU) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The spiked sample analysis is designed to provide information about the sample matrix effect on the sample preparation procedures and the measurement methodology. Duplicate samples are used to demonstrate acceptable method precision from the laboratory at the time of analysis. The percent recoveries and duplicate results are used to assess digestion efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- All conventional parameters MS/MSD and/or DU (recoveries and RPD) fell within control limits providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP102011 was collected as a field duplicate of sample MW-07-16S. The RPD was met for TOC indicating overall precision. No qualifier is required.

- Sample DUP102011 was collected as a field duplicate of sample MW-07-16S. The RPD was not met for sulfate. The detected and non-detected sulfate results for these two samples are qualified as estimated values "J" and "UJ".

Target Analyte Identification and Quantitation: The laboratory calculations are verified and compound identifications assessed by the data reviewer.

- The conventional parameters raw data and/or laboratory worksheets were provided for review (as required under the NYSDEC ASP B Data Deliverable format). No laboratory calculation errors were noted for samples selected for verification during the Data Validation Review. No further action is required from the laboratory.

- The following samples were analyzed at elevated dilutions for sulfate resulting in elevated detection limits, due to the target compound sulfate concentrations exceeding the linear calibration range requirements. No qualifier is required.

  MW-07-17D (1:2)

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

METHOD / ANALYST SUMMARY

Client: URS Corporation

Job Number: 480-11745-1

Method	Analyst	Analyst ID
OLM04.2 OLM04.2/Vol	Humbert, Dave	DH
RSK RSK-175	Neary, Mary Ann	MN
SW846 9038	Nyznyk, Peter	PN
SW846 9060	Cudney, Kevin A	KAC

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **TB102011**

Lab Sample ID: 480-11745-1TB
Client Matrix: Water

Date Sampled: 10/20/2011 0000
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6380.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1416			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1416				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	ND		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	0.19	J * B	0.10	10
Methylene Chloride	0.72	J B	0.10	10
Acetone	3.2	J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	ND		0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	ND		0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	ND		0.10	10
1,2-Dichlorobenzene	ND		0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: TB102011

Lab Sample ID: 480-11745-1TB
Client Matrix: Water

Date Sampled: 10/20/2011 0000
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6380.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1416			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1416				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	ND		0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		76 - 114
Toluene-d8 (Surr)	100		88 - 110
4-Bromofluorobenzene	91		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **TB102011**

Lab Sample ID: 480-11745-1TB
Client Matrix: Water

Date Sampled: 10/20/2011 0000
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6380.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1416			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1416				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	
74-95-3	Dibromomethane	4.49	0.46	J B

100

QR
12/13

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: MW-07-16S

Lab Sample ID: 480-11745-2
Client Matrix: Water

Date Sampled: 10/20/2011 1455
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6381.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1441			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1441				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	42		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	0.21	J B * ND	0.10	10
Methylene Chloride	0.20	J B ND	0.10	10
Acetone	0.88	J ND J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	7.6	J	0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	0.99	J	0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	2.2	J	0.10	10
1,2-Dichlorobenzene	0.21	J	0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

AR 12/13

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-07-16S**

Lab Sample ID: 480-11745-2
Client Matrix: Water

Date Sampled: 10/20/2011 1455
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6381.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1441			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1441				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	0.66	J	0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		76 - 114
Toluene-d8 (Surr)	98		88 - 110
4-Bromofluorobenzene	96		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-07-16S**

Lab Sample ID: 480-11745-2
Client Matrix: Water

Date Sampled: 10/20/2011 1455
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6381.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1441			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1441				

Tentatively Identified Compounds **Number TIC's Found:** 3

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
74-95-3	Dibromomethane	4.49	0.33	J B
496-11-7	Indane	10.53	99	T J N
91-57-6	Naphthalene, 2-methyl-	12.88	7.7	T J N

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-07-17D**

Lab Sample ID: 480-11745-3
Client Matrix: Water

Date Sampled: 10/20/2011 1510
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6382.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1507			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1507				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	55		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	0.18	J * B	0.10	10
Methylene Chloride	0.33	J B	0.10	10
Acetone	0.89	J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	0.29	J	0.10	10
Methylcyclohexane	0.33	J	0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	14		0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	0.86	J	0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	2.8	J	0.10	10
1,2-Dichlorobenzene	0.21	J	0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-07-17D**

Lab Sample ID: 480-11745-3
Client Matrix: Water

Date Sampled: 10/20/2011 1510
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6382.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1507			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1507				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	0.67	J	0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		76 - 114
Toluene-d8 (Surr)	99		88 - 110
4-Bromofluorobenzene	97		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: MW-07-17D

Lab Sample ID: 480-11745-3
Client Matrix: Water

Date Sampled: 10/20/2011 1510
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6382.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1507			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1507				

Tentatively Identified Compounds **Number TIC's Found:** 2

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
74-95-3	Dibromomethane	4.49	0.47	J B
496-11-7	Indane	10.53	70	T J N

ND

QR 12/13

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-09-20S**

Lab Sample ID: 480-11745-4
Client Matrix: Water

Date Sampled: 10/20/2011 1600
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6383.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1532			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1532				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	ND		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	0.25	J * B ND	0.10	10
Methylene Chloride	0.23	J B ND	0.10	10
Acetone	0.55	J ND J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	1.7	J	0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	ND		0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	1.0	J	0.10	10
1,2-Dichlorobenzene	ND		0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

QL 12/13

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-09-20S**

Lab Sample ID: 480-11745-4
Client Matrix: Water

Date Sampled: 10/20/2011 1600
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6383.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1532			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1532				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	0.12	J	0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		76 - 114
Toluene-d8 (Surr)	98		88 - 110
4-Bromofluorobenzene	97		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-09-20S**

Lab Sample ID: 480-11745-4
Client Matrix: Water

Date Sampled: 10/20/2011 1600
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6383.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1532			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1532				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	
74-95-3	Dibromomethane	4.49	0.49	J B

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-09-21D**

Lab Sample ID: 480-11745-5
Client Matrix: Water

Date Sampled: 10/20/2011 1605
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6384.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1557			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1557				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	29		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	ND	*	0.10	10
Methylene Chloride	0.31	J B	0.10	10
Acetone	0.47	J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	4.4	J	0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	ND		0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	1.5	J	0.10	10
1,2-Dichlorobenzene	0.16	J	0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

ND
ND J

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12/13

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **MW-09-21D**

Lab Sample ID: 480-11745-5
Client Matrix: Water

Date Sampled: 10/20/2011 1605
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6384.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1557			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1557				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	0.16	J	0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		76 - 114
Toluene-d8 (Surr)	100		88 - 110
4-Bromofluorobenzene	97		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: MW-09-21D

Lab Sample ID: 480-11745-5
Client Matrix: Water

Date Sampled: 10/20/2011 1605
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6384.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1557			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1557				

Tentatively Identified Compounds **Number TIC's Found:** 2

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
74-95-3	Dibromomethane	4.49	0.50	J B
496-11-7	Indane	10.53	33	T J N

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Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **DUP102011**

Lab Sample ID: 480-11745-6
Client Matrix: Water

Date Sampled: 10/20/2011 1400
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6385.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1622			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1622				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	45		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	0.18	J B *	0.10	10
Methylene Chloride	0.21	J B	0.10	10
Acetone	0.92	J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	7.8	J	0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	1.0	J	0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	2.1	J	0.10	10
1,2-Dichlorobenzene	0.19	J	0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

ND
ND
ND J

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Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **DUP102011**

Lab Sample ID: 480-11745-6
Client Matrix: Water

Date Sampled: 10/20/2011 1400
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6385.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1622			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1622				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2-Dichloroethene, Total	ND		0.10	10
Xylenes, Total	0.73	J	0.10	10
Chloroform	ND		0.10	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		76 - 114
Toluene-d8 (Surr)	100		88 - 110
4-Bromofluorobenzene	100		86 - 115

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: DUP102011

Lab Sample ID: 480-11745-6
Client Matrix: Water

Date Sampled: 10/20/2011 1400
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6385.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1622			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1622				

Tentatively Identified Compounds **Number TIC's Found:** 5

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
74-95-3	Dibromomethane	4.49	0.43	J B
496-11-7	Indane	10.53	99	T J N
4265-25-2	Benzofuran, 2-methyl-	11.42	5.1	T J N
91-57-6	Naphthalene, 2-methyl-	12.88	8.5	T J N
90-12-0	Naphthalene, 1-methyl-	12.98	5.7	T J N

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: VHB

Lab Sample ID: 480-11745-7STOBLK
Client Matrix: Water

Date Sampled: 10/20/2011 0000
Date Received: 10/25/2011 0945

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	220-55810	Instrument ID:	MSY
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Y6386.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/27/2011 1647			Final Weight/Volume:	5 mL
Prep Date:	10/27/2011 1647				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	*	0.10	10
Chloromethane	ND	*	0.10	10
Vinyl chloride	ND		0.10	10
Bromomethane	ND		0.10	10
Chloroethane	ND		0.10	10
Trichlorofluoromethane	ND		0.10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.10	10
1,1-Dichloroethene	ND		0.10	10
Carbon disulfide	ND	*	0.10	10
Methylene Chloride	0.28	J B	0.10	10
Acetone	0.51	J	0.10	10
Methyl acetate	ND	*	0.10	10
trans-1,2-Dichloroethene	ND		0.10	10
Methyl tert-butyl ether	ND		0.10	10
1,1-Dichloroethane	ND		0.10	10
cis-1,2-Dichloroethene	ND		0.10	10
2-Butanone (MEK)	ND		0.10	10
1,2-Dichloroethane	ND		0.10	10
1,1,1-Trichloroethane	ND		0.10	10
Carbon tetrachloride	ND		0.10	10
Benzene	ND		0.10	10
Cyclohexane	ND		0.10	10
Methylcyclohexane	ND		0.10	10
Trichloroethene	ND		0.10	10
1,2-Dichloropropane	ND		0.10	10
Dichlorobromomethane	ND		0.10	10
cis-1,3-Dichloropropene	ND		0.10	10
trans-1,3-Dichloropropene	ND		0.10	10
1,1,2-Trichloroethane	ND		0.10	10
Chlorodibromomethane	ND		0.10	10
Bromoform	ND		0.10	10
Toluene	ND		0.10	10
4-Methyl-2-pentanone (MIBK)	ND		0.10	10
Tetrachloroethene	ND		0.10	10
1,2-Dibromoethane	ND		0.10	10
2-Hexanone	ND		0.10	10
Chlorobenzene	ND		0.10	10
Ethylbenzene	ND		0.10	10
Styrene	ND		0.10	10
Isopropylbenzene	ND		0.10	10
1,1,2,2-Tetrachloroethane	ND		0.10	10
1,3-Dichlorobenzene	ND		0.10	10
1,4-Dichlorobenzene	ND		0.10	10
1,2-Dichlorobenzene	ND		0.10	10
1,2-Dibromo-3-Chloropropane	ND		0.10	10
1,2,4-Trichlorobenzene	ND		0.10	10

Client: URS Corporation

Job Number: 480-11745-1

Client Sample ID: **DUP102011**

Lab Sample ID: 480-11745-6
Client Matrix: Water

Date Sampled: 10/20/2011 1400
Date Received: 10/25/2011 0945

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-37985	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	100			Final Weight/Volume:	1.0 mL
Analysis Date:	10/29/2011 1403			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Ethane	ND		49	150
Ethene	ND		52	150
Methane	13000		22	100

Client: URS Corporation

Job Number: 480-11745-1

General Chemistry

Client Sample ID: **MW-07-16S**

Lab Sample ID: 480-11745-2
Client Matrix: Water

Date Sampled: 10/20/2011 1455
Date Received: 10/25/2011 0945

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	1.6	J	mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-38558	Analysis Date: 11/02/2011 0721						
Total Organic Carbon	9.6		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-37905	Analysis Date: 10/26/2011 2244						

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General Chemistry

Client Sample ID: **DUP102011**

Lab Sample ID: 480-11745-6
Client Matrix: Water

Date Sampled: 10/20/2011 1400
Date Received: 10/25/2011 0945

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	ND		mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-38558	Analysis Date: 11/02/2011 0725						
Total Organic Carbon	9.6		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-37905	Analysis Date: 10/27/2011 0243						

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General Chemistry

Client Sample ID: **MW-09-21D**

Lab Sample ID: 480-11745-5
Client Matrix: Water

Date Sampled: 10/20/2011 1605
Date Received: 10/25/2011 0945

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Sulfate	ND		mg/L	1.5	5.0	1.0	9038
Analysis Batch: 480-38558	Analysis Date: 11/02/2011 0725						
Total Organic Carbon	6.9		mg/L	0.43	1.0	1.0	9060
Analysis Batch: 480-37905	Analysis Date: 10/27/2011 0213						

DATA VALIDATION REVIEW
PROJECT: COLUMBIA CEMENT, FREEPORT, LONG ISLAND, NY
DATE SAMPLES COLLECTED: JANUARY 11 THROUGH 12, 2012
JOB NO.: 11130292

LAB REPORT NO. 480-14987-1

1.0 INTRODUCTION

This Data Validation Review has been performed in accordance with the requirements specified in the standard operating procedures for the validation of volatile organic data using USEPA Region II Contract Laboratory Program (CLP) Organics Data Review and Preliminary Data Review, SOP HW-34, Revision 1 dated August 2007 and SOP HW-33 Revision 2 dated November 2008. The quality assurance review requirements are applied such that specifications of the methods take precedence over the specifications of the USEPA Region II data review guidelines in those instances where the specifications differ.

The objective of the review was to assess data usability and compliance with New York State Department of Environmental Conservation (NYSDEC) ASP Category B deliverable requirements. The Data Validation Review provides an interpretation of data usability based on the reported quality control parameters. A total of eight groundwater samples, one field duplicate sample, one trip blank sample and one field blank sample were collected by URS Corporation, Wayne, New Jersey, office personnel and submitted to Test America of Buffalo, New York (NYSDEC Certification No. 10026). Section 2.0 of this report summarizes the samples included in this review and the analyses performed. The groundwater samples were analyzed following USEPA CLP and Standard Methodologies. The laboratory analytical data set contained herein was prepared in accordance with NYSDEC ASP Category B Data Deliverable Format (Exhibit B).

The organic data quality review is based on the following parameters:

* Hold Times
* Blank Contamination
* GC/MS Performance Check (Tuning) Summaries
* System Monitoring Compound (Surrogate) Recoveries
* Internal Standard Area Performance
  Initial and Continuing Calibration Results
* Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries
* Target Compound Identification and Quantitation

*All criteria were met for this parameter

This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Overall, the data quality is acceptable. The results of the Data Validation Review are presented in Section 3.0. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported result.

2.0 SAMPLES INCLUDED IN REVIEW

Lab Report No. 480-14987-1

Sample ID	Lab ID	Date Collected	Test Requested
MW-09-24S	480-14987-1	01/11/12	VOA
MW-09-25D	480-14987-2	01/11/12	VOA
MW-09-18S	480-14987-3	01/12/12	VOA
MW-09-19D	480-14987-4	01/12/12	VOA
MW-05-14S	480-14987-5	01/12/12	VOA
MW-05-15D	480-14987-6	01/12/12	VOA
MW-09-22S	480-14987-7	01/12/12	VOA
MW-09-23D	480-14987-8	01/12/12	VOA
TB011112A	480-14987-9	01/11/12	VOA
FB011112A	480-14987-10	01/11/12	VOA
DUP011212A	480-14987-11	01/12/12	VOA

Legend:

VOA = Analyzed following USEPA CLP-VOA.

3.0 RESULTS

3.1 GENERAL COMMENTS

With regard to the data package deliverables, most of the NYSDEC ASP Category B Data Deliverable format requirements were met, with the exception of the following correctable deficiencies. Please note that these deficiencies, for the most part, do not impact data usability. The laboratory was contacted and the missing information requested. As of this writing, Test America-Buffalo has not provided the required information. This report may be amended upon the receipt of the laboratory corrections.

- The laboratory did not include the internal chain-of-custody (COC) as required under NYSDEC ASP Category B Data Deliverable format requirements.

3.2 ORGANIC QUALIFIERS

Hold Times: Technical hold times were assessed by comparing the sample dates with that of the preparation dates and/or analysis dates.

- The samples were analyzed within the required 10-day hold time for TCL VOA analyses. Additionally, the laboratory cooler receipt temperature associated with the reviewed project samples fell within the 4°C (+2° C) requirement. No qualifier is required.

Blank Contamination: Laboratory method blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the investigative samples. Water laboratory method blanks are used to identify whether investigative samples have been contaminated during sample preparation, sample analysis or from a previous sample (instrument carry-over).

Field-blanks consist of deionized water poured over or through decontaminated sampling equipment and collected into the sample bottles. Field-blanks measure contamination potentially caused by inadequate decontamination of sampling equipment. Trip-blanks are carbon-free deionized water samples that accompany volatile investigative samples during each stage of shipment, storage and analysis. The trip-blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

- No TCL VOA contaminants were identified in the laboratory method blanks associated with the groundwater samples received and reviewed. No qualifier is required.

GC/MS Performance Check (Tuning) Summary: Gas chromatograph/mass spectrometer (GC/MS) instrument tuning and performance checks are performed to ensure the instrument's ability to provide appropriate mass-resolution, identification, and sensitivity.

- The bromofluorobenzene (BFB) tuning compound mass-ion abundance criteria for the volatile organic compound analyses were reported within control limits. No qualifier is required.

System Monitoring Compound (Surrogate) Recoveries: System monitoring compounds (surrogates) are those compounds, which are not expected to be detected in the investigative samples but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy.

- The TCL VOA surrogate recoveries fell within control limits for the project samples received and reviewed. No qualifier is required.

Internal Standards Area Performance: Internal standards are analytes of interest, which are added to the investigative samples prior to analysis to ensure that GC/MS sensitivity and responses remain stable. Internal standards are reported with the volatile analysis.

- The volatile internal standard area counts and retention times fell within control limits for the project samples received and reviewed for TCL VOA analyses. No qualifier is required.

Initial and Continuing Calibration Results: Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative data at the beginning and throughout each of the analyses.

- Due to the high percent difference (%D >25 but <90) between the initial and continuing calibration response factor of the VOA compound dichlorodifluoromethane the non-detected dichlorodifluoromethane results for all the samples are qualified as estimated values and are flagged "UJ" on the laboratory summary pages and on the summary table.

- All other TCL VOA target compound initial and continuing calibration response factors, percent relative standard deviations (%RSD), and percent differences (%D) associated with the reviewed project samples fell within acceptable control limits. No qualifier is required.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Summaries: Matrix spikes are samples spiked with known concentrations of analytes of interest. The MS/MSD percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Blank spikes (BS) are blank samples fortified (spiked) with known concentrations of analytes of interest. The blank spike percent recoveries results are used to assess extraction efficiencies, and overall analytical accuracy and precision.

Field duplicate samples are taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Therefore, results may have more variability than laboratory duplicates, which measure only laboratory performance.

- The VOA MS/MSD results (recoveries and Relative Percent Difference or RPD) associated with the reviewed project samples fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

- Sample DUP011212A was collected as a field duplicate of MW-05-14S. All fell within control limits, providing a positive indication of the overall accuracy and precision associated with these analyses. No qualifier is required.

Target Compound Identification Quantitation: The laboratory calculations are verified and compound identifications are reviewed and assessed by the data reviewer.

- Samples MW-09-19D and MW-05-15D were analyzed at a 1:4 dilution for VOA resulting in elevated detection limits due to foaming in the samples. No qualifier is required.

- Samples MW-09-22S and MW-09-23D were analyzed at a 1:2 dilution for VOA resulting in elevated detection limits due to foaming in the samples. No qualifier is required.

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Tentatively Identified Compounds: In addition to the specific target compounds identified, 10 non-target volatile organic compounds of greatest apparent concentration were tentatively identified by a computerized search of the National Bureau of Standards (NBS) mass-spectral library. A mass-spectral interpretation specialist compares the sample mass-spectrum to the library search and assigns a tentative identification. The validity of the tentatively identified compounds (TICs) was evaluated based upon the identifications made by the laboratory, and the following comments are offered:

- The GC and GC/MS raw data (quantitation reports, chromatograms and GC/MS mass-spectra) were provided for review. No laboratory calculation errors were noted for the reviewed project samples. No further action is required from the laboratory.

Additional Comments

- As per the requirements, values calculated below the Reporting Limit (RL) should be considered estimated and are flagged (J) on the summary table.

4.0 CONCLUSIONS

Overall, the data quality is acceptable. The Data Validation Review has identified aspects of the analytical data that require qualification. Data qualifiers, when applicable, are placed next to the results so that the data user can assess the qualitative and/or quantitative reliability of the reported results. Except where noted, the laboratory analytical data contained herein are deemed usable and in compliance with the NYSDEC ASP B Data Deliverable Format requirements. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented.

METHOD / ANALYST SUMMARY

Client: URS Corporation

Job Number: 480-14987-1

Method	Analyst	Analyst ID
OLM04.2 OLM04.2/Vol	Jones, Rebecca	RJ

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-24S

Lab Sample ID: 480-14987-1
Client Matrix: Water

Date Sampled: 01/11/2012 1335
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7428.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2100			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2100				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.8	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	14		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-25D

Lab Sample ID: 480-14987-2
Client Matrix: Water

Date Sampled: 01/11/2012 1348
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7429.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2124			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2124				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.6	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	19		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: **MW-09-25D**

Lab Sample ID: 480-14987-2
Client Matrix: Water

Date Sampled: 01/11/2012 1348
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7429.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2124			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2124				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		2.3	10
Xylenes, Total	ND		0.82	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		76 - 114
Toluene-d8 (Surr)	99		88 - 110
4-Bromofluorobenzene (Surr)	96		86 - 115

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-25D

Lab Sample ID: 480-14987-2
Client Matrix: Water

Date Sampled: 01/11/2012 1348
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7429.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2124			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2124				

Tentatively Identified Compounds **Number TIC's Found:** 2

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Unknown	6.51	21	T J
496-11-7	Indane	15.32	34	T J N

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: **MW-09-18S**

Lab Sample ID: 480-14987-3
Client Matrix: Water

Date Sampled: 01/12/2012 0850
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7430.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2149			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2149				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	1.5	J	1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	130		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND	02/1/26	0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-19D

Lab Sample ID: 480-14987-4
Client Matrix: Water

Date Sampled: 01/12/2012 0900
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7431.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2214			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2214				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.4	40
1,1,2,2-Tetrachloroethane	ND		6.0	40
1,1,2-Trichloroethane	ND		7.6	40
1,1,2-Trichlorotrifluoroethane	ND		6.0	40
1,1-Dichloroethane	ND		6.8	40
1,1-Dichloroethene	ND		10	40
1,2,4-Trichlorobenzene	ND		2.3	40
1,2-Dibromo-3-Chloropropane	ND		20	40
1,2-Dibromoethane (EDB)	ND		8.0	40
1,2-Dichlorobenzene	ND		4.8	40
1,2-Dichloroethane	ND		3.3	40
1,2-Dichloropropane	ND		6.8	40
1,3-Dichlorobenzene	ND		4.8	40
1,4-Dichlorobenzene	ND		4.4	40
2-Butanone (MEK)	ND		6.0	40
2-Hexanone	ND		7.2	40
4-Methyl-2-pentanone (MIBK)	ND		6.8	40
Acetone	ND		7.6	40
Benzene	ND		6.4	40
Bromodichloromethane	ND		6.0	40
Bromoform	ND		20	40
Bromomethane	ND		17	40
Carbon disulfide	ND		8.4	40
Carbon tetrachloride	ND		8.0	40
Chlorobenzene	ND		6.4	40
Chlorodibromomethane	ND		6.8	40
Chloroethane	ND		10	40
Chloroform	ND		7.6	40
Chloromethane	ND		9.2	40
cis-1,2-Dichloroethene	ND		7.2	40
cis-1,3-Dichloropropene	ND		5.6	40
Cyclohexane	ND		2.3	40
Dichlorodifluoromethane	ND	J	8.4	40
Ethylbenzene	ND	QR 1/26	6.4	40
Isopropylbenzene	ND		1.5	40
Methyl acetate	ND		2.7	40
Methyl tert-butyl ether	ND		1.8	40
Methylcyclohexane	ND		2.4	40
Methylene Chloride	ND		5.2	40
Styrene	ND		6.8	40
Tetrachloroethene	ND		8.4	40
Toluene	ND		6.4	40
trans-1,2-Dichloroethene	ND		7.6	40
trans-1,3-Dichloropropene	ND		6.4	40
Trichloroethene	ND		7.6	40
Trichlorofluoromethane	ND		5.2	40

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-19D

Lab Sample ID: 480-14987-4
Client Matrix: Water

Date Sampled: 01/12/2012 0900
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7431.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2214			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2214				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		9.2	40
Xylenes, Total	ND		3.3	40

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		76 - 114
Toluene-d8 (Surr)	98		88 - 110
4-Bromofluorobenzene (Surr)	94		86 - 115

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-19D

Lab Sample ID: 480-14987-4
Client Matrix: Water

Date Sampled: 01/12/2012 0900
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7431.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2214			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2214				

Tentatively Identified Compounds **Number TIC's Found:** 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-05-14S

Lab Sample ID: 480-14987-5
Client Matrix: Water

Date Sampled: 01/12/2012 1010
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7432.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2238			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2238				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	ND		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-05-15D

Lab Sample ID: 480-14987-6
Client Matrix: Water

Date Sampled: 01/12/2012 1015
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7433.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2302			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2302				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.4	40
1,1,2,2-Tetrachloroethane	ND		6.0	40
1,1,2-Trichloroethane	ND		7.6	40
1,1,2-Trichlorotrifluoroethane	ND		6.0	40
1,1-Dichloroethane	ND		6.8	40
1,1-Dichloroethene	ND		10	40
1,2,4-Trichlorobenzene	ND		2.3	40
1,2-Dibromo-3-Chloropropane	ND		20	40
1,2-Dibromoethane (EDB)	ND		8.0	40
1,2-Dichlorobenzene	ND		4.8	40
1,2-Dichloroethane	ND		3.3	40
1,2-Dichloropropane	ND		6.8	40
1,3-Dichlorobenzene	ND		4.8	40
1,4-Dichlorobenzene	ND		4.4	40
2-Butanone (MEK)	ND		6.0	40
2-Hexanone	ND		7.2	40
4-Methyl-2-pentanone (MIBK)	ND		6.8	40
Acetone	ND		7.6	40
Benzene	ND		6.4	40
Bromodichloromethane	ND		6.0	40
Bromoform	ND		20	40
Bromomethane	ND		17	40
Carbon disulfide	9.6	J	8.4	40
Carbon tetrachloride	ND		8.0	40
Chlorobenzene	ND		6.4	40
Chlorodibromomethane	ND		6.8	40
Chloroethane	100		10	40
Chloroform	ND		7.6	40
Chloromethane	ND		9.2	40
cis-1,2-Dichloroethene	ND		7.2	40
cis-1,3-Dichloropropene	ND		5.6	40
Cyclohexane	ND		2.3	40
Dichlorodifluoromethane	ND		8.4	40
Ethylbenzene	ND		6.4	40
Isopropylbenzene	ND		1.5	40
Methyl acetate	ND		2.7	40
Methyl tert-butyl ether	ND		1.8	40
Methylcyclohexane	ND		2.4	40
Methylene Chloride	ND		5.2	40
Styrene	ND		6.8	40
Tetrachloroethene	ND		8.4	40
Toluene	ND		6.4	40
trans-1,2-Dichloroethene	ND		7.6	40
trans-1,3-Dichloropropene	ND		6.4	40
Trichloroethene	ND		7.6	40
Trichlorofluoromethane	ND		5.2	40

J 97 1/26

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-05-15D

Lab Sample ID: 480-14987-6
Client Matrix: Water

Date Sampled: 01/12/2012 1015
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7433.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2302			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2302				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		9.2	40
Xylenes, Total	ND		3.3	40

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		76 - 114
Toluene-d8 (Surr)	101		88 - 110
4-Bromofluorobenzene (Surr)	95		86 - 115

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-05-15D

Lab Sample ID: 480-14987-6
Client Matrix: Water

Date Sampled: 01/12/2012 1015
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7433.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2302			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2302				

Tentatively Identified Compounds **Number TIC's Found:** 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-22S

Lab Sample ID: 480-14987-7
Client Matrix: Water

Date Sampled: 01/12/2012 1110
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7434.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2327			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2327				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		4.2	20
1,1,2,2-Tetrachloroethane	ND		3.0	20
1,1,2-Trichloroethane	ND		3.8	20
1,1,2-Trichlorotrifluoroethane	ND		3.0	20
1,1-Dichloroethane	ND		3.4	20
1,1-Dichloroethene	ND		5.0	20
1,2,4-Trichlorobenzene	ND		1.1	20
1,2-Dibromo-3-Chloropropane	ND		10	20
1,2-Dibromoethane (EDB)	ND		4.0	20
1,2-Dichlorobenzene	ND		2.4	20
1,2-Dichloroethane	ND		1.7	20
1,2-Dichloropropane	ND		3.4	20
1,3-Dichlorobenzene	ND		2.4	20
1,4-Dichlorobenzene	ND		2.2	20
2-Butanone (MEK)	ND		3.0	20
2-Hexanone	ND		3.6	20
4-Methyl-2-pentanone (MIBK)	ND		3.4	20
Acetone	ND		3.8	20
Benzene	ND		3.2	20
Bromodichloromethane	ND		3.0	20
Bromoform	ND		10	20
Bromomethane	ND		8.6	20
Carbon disulfide	ND		4.2	20
Carbon tetrachloride	ND		4.0	20
Chlorobenzene	ND		3.2	20
Chlorodibromomethane	ND		3.4	20
Chloroethane	ND		5.0	20
Chloroform	ND		3.8	20
Chloromethane	ND		4.6	20
cis-1,2-Dichloroethene	ND		3.6	20
cis-1,3-Dichloropropene	ND		2.8	20
Cyclohexane	ND		1.2	20
Dichlorodifluoromethane	ND	J	4.2	20
Ethylbenzene	ND		3.2	20
Isopropylbenzene	ND		0.75	20
Methyl acetate	ND		1.3	20
Methyl tert-butyl ether	ND		0.91	20
Methylcyclohexane	ND		1.2	20
Methylene Chloride	ND		2.6	20
Styrene	ND		3.4	20
Tetrachloroethene	ND		4.2	20
Toluene	ND		3.2	20
trans-1,2-Dichloroethene	ND		3.8	20
trans-1,3-Dichloropropene	ND		3.2	20
Trichloroethene	ND		3.8	20
Trichlorofluoromethane	ND		2.6	20

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-23D

Lab Sample ID: 480-14987-8
Client Matrix: Water

Date Sampled: 01/12/2012 1115
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7435.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2351			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2351				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		4.2	20
1,1,2,2-Tetrachloroethane	ND		3.0	20
1,1,2-Trichloroethane	ND		3.8	20
1,1,2-Trichlorotrifluoroethane	ND		3.0	20
1,1-Dichloroethane	ND		3.4	20
1,1-Dichloroethene	ND		5.0	20
1,2,4-Trichlorobenzene	ND		1.1	20
1,2-Dibromo-3-Chloropropane	ND		10	20
1,2-Dibromoethane (EDB)	ND		4.0	20
1,2-Dichlorobenzene	ND		2.4	20
1,2-Dichloroethane	ND		1.7	20
1,2-Dichloropropane	ND		3.4	20
1,3-Dichlorobenzene	ND		2.4	20
1,4-Dichlorobenzene	2.4	J	2.2	20
2-Butanone (MEK)	ND		3.0	20
2-Hexanone	ND		3.6	20
4-Methyl-2-pentanone (MIBK)	ND		3.4	20
Acetone	ND		3.8	20
Benzene	ND		3.2	20
Bromodichloromethane	ND		3.0	20
Bromoform	ND		10	20
Bromomethane	ND		8.6	20
Carbon disulfide	ND		4.2	20
Carbon tetrachloride	ND		4.0	20
Chlorobenzene	ND		3.2	20
Chlorodibromomethane	ND		3.4	20
Chloroethane	ND		5.0	20
Chloroform	ND		3.8	20
Chloromethane	ND		4.6	20
cis-1,2-Dichloroethene	ND		3.6	20
cis-1,3-Dichloropropene	ND		2.8	20
Cyclohexane	ND		1.2	20
Dichlorodifluoromethane	ND	J	4.2	20
Ethylbenzene	ND		3.2	20
Isopropylbenzene	ND		0.75	20
Methyl acetate	ND		1.3	20
Methyl tert-butyl ether	ND		0.91	20
Methylcyclohexane	ND		1.2	20
Methylene Chloride	ND		2.6	20
Styrene	ND		3.4	20
Tetrachloroethene	ND		4.2	20
Toluene	ND		3.2	20
trans-1,2-Dichloroethene	ND		3.8	20
trans-1,3-Dichloropropene	ND		3.2	20
Trichloroethene	ND		3.8	20
Trichlorofluoromethane	ND		2.6	20

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-23D

Lab Sample ID: 480-14987-8
Client Matrix: Water

Date Sampled: 01/12/2012 1115
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7435.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2351			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2351				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		4.6	20
Xylenes, Total	ND		1.6	20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		76 - 114
Toluene-d8 (Surr)	100		88 - 110
4-Bromofluorobenzene (Surr)	94		86 - 115

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: MW-09-23D

Lab Sample ID: 480-14987-8
Client Matrix: Water

Date Sampled: 01/12/2012 1115
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7435.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/13/2012 2351			Final Weight/Volume:	5 mL
Prep Date:	01/13/2012 2351				

Tentatively Identified Compounds **Number TIC's Found:** 1

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
496-11-7	Indane	15.32	24	T J N

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: TB011112A

Lab Sample ID: 480-14987-9TB
Client Matrix: Water

Date Sampled: 01/11/2012 0000
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7436.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/14/2012 0015			Final Weight/Volume:	5 mL
Prep Date:	01/14/2012 0015				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	ND		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: FB011112A

Lab Sample ID: 480-14987-10
Client Matrix: Water

Date Sampled: 01/11/2012 1400
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7437.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/14/2012 0040			Final Weight/Volume:	5 mL
Prep Date:	01/14/2012 0040				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	ND		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: **FB011112A**

Lab Sample ID: 480-14987-10
Client Matrix: Water

Date Sampled: 01/11/2012 1400
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7437.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/14/2012 0040			Final Weight/Volume:	5 mL
Prep Date:	01/14/2012 0040				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		2.3	10
Xylenes, Total	ND		0.82	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		76 - 114
Toluene-d8 (Surr)	99		88 - 110
4-Bromofluorobenzene (Surr)	94		86 - 115

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: FB011112A

Lab Sample ID: 480-14987-10
Client Matrix: Water

Date Sampled: 01/11/2012 1400
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7437.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/14/2012 0040			Final Weight/Volume:	5 mL
Prep Date:	01/14/2012 0040				

Tentatively Identified Compounds **Number TIC's Found:** 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

Client: URS Corporation

Job Number: 480-14987-1

Client Sample ID: **DUP011212A**

Lab Sample ID: 480-14987-11
Client Matrix: Water

Date Sampled: 01/12/2012 0930
Date Received: 01/13/2012 1015

OLM04.2/Vol Volatile Organic Compounds (GC/MS)

Analysis Method:	OLM04.2/Vol	Analysis Batch:	480-47951	Instrument ID:	HP5973P
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	P7438.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	01/14/2012 0105			Final Weight/Volume:	5 mL
Prep Date:	01/14/2012 0105				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		2.1	10
1,1,2,2-Tetrachloroethane	ND		1.5	10
1,1,2-Trichloroethane	ND		1.9	10
1,1,2-Trichlorotrifluoroethane	ND		1.5	10
1,1-Dichloroethane	ND		1.7	10
1,1-Dichloroethene	ND		2.5	10
1,2,4-Trichlorobenzene	ND		0.57	10
1,2-Dibromo-3-Chloropropane	ND		5.0	10
1,2-Dibromoethane (EDB)	ND		2.0	10
1,2-Dichlorobenzene	ND		1.2	10
1,2-Dichloroethane	ND		0.83	10
1,2-Dichloropropane	ND		1.7	10
1,3-Dichlorobenzene	ND		1.2	10
1,4-Dichlorobenzene	ND		1.1	10
2-Butanone (MEK)	ND		1.5	10
2-Hexanone	ND		1.8	10
4-Methyl-2-pentanone (MIBK)	ND		1.7	10
Acetone	ND		1.9	10
Benzene	ND		1.6	10
Bromodichloromethane	ND		1.5	10
Bromoform	ND		5.0	10
Bromomethane	ND		4.3	10
Carbon disulfide	ND		2.1	10
Carbon tetrachloride	ND		2.0	10
Chlorobenzene	ND		1.6	10
Chlorodibromomethane	ND		1.7	10
Chloroethane	ND		2.5	10
Chloroform	ND		1.9	10
Chloromethane	ND		2.3	10
cis-1,2-Dichloroethene	ND		1.8	10
cis-1,3-Dichloropropene	ND		1.4	10
Cyclohexane	ND		0.59	10
Dichlorodifluoromethane	ND	J	2.1	10
Ethylbenzene	ND		1.6	10
Isopropylbenzene	ND		0.37	10
Methyl acetate	ND		0.66	10
Methyl tert-butyl ether	ND		0.46	10
Methylcyclohexane	ND		0.59	10
Methylene Chloride	ND		1.3	10
Styrene	ND		1.7	10
Tetrachloroethene	ND		2.1	10
Toluene	ND		1.6	10
trans-1,2-Dichloroethene	ND		1.9	10
trans-1,3-Dichloropropene	ND		1.6	10
Trichloroethene	ND		1.9	10
Trichlorofluoromethane	ND		1.3	10

APPENDIX E
2003 FISH AND WILDLIFE IMPACT ASSESSMENT

7.0 FISH AND WILDLIFE IMPACT ANALYSIS

This section presents the findings of the Fish and Wildlife Impact Analysis (FWIA) performed at the former CCC facility. The FWIA was performed following the NYSDEC FWIA procedures presented in the NYSDEC, Division of Fish and Wildlife, "Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites" (October 1994). The results of the Step I (Site Description) and the Step IIA (Pathway Analysis) sections of the FWIA are presented.

The objectives of the Step I, Site description is to identify the fish and wildlife resources, land-use and habitat types that exist in the vicinity of the Site. In addition, fish and wildlife species that may utilize habitats that could potentially be impacted by Site-related contaminants are identified. This information is necessary to allow identification of potential pathways of contaminant migration that could impact fish and wildlife resources.

The Step II pathway analysis evaluates and identifies potential contaminants of concern, sources of contaminants, potential pathways of contaminant migration and potential for fish and wildlife resources to be impacted by Site-related contaminants. If there are no potential pathways or if analytical data indicate that contaminants have not migrated to a resource along potential pathways, then it can be concluded that there has been minimal impact on the resource.

A cover type map documenting land use and the terrestrial, palustrine and lacustrine communities located within a one-half mile radius of the Site is provided in Drawing No. 3 (Map Pocket). Topography and drainage within a two-mile radius of the Site are depicted on Drawing No. 4 (Map Pocket). The locations of New York State regulated freshwater wetlands within a two-mile radius of the Site are depicted in Drawing No 5 (Map Pocket). The NYSDEC Tidal Wetlands Maps for the Freeport and Jones Beach quads (Tidal Wetland Map Numbers Index 2 Map No.620-498 and 620-500) were reviewed to determine the location of Tidal Wetlands within a two-mile radius of the Site.

Significant natural resources (e.g., wetlands, streams) located within a two-mile radius of the Site are documented. A description of the fish and wildlife resources that could potentially utilize the cover types located within a one half-mile radius of the Site is presented. The general habitat quality within a one-half mile radius of the Site is discussed.

7.1 Site Topography And Drainage

Located to the north of the plant is a storage warehouse used by TACC. To the south of the main plant is storage warehouse divided into three sections. Love Quiches uses the front half for storage of bulk food supplies. The middle section is storage of empty 50-gallon drums for TACC. The back of the building farthest from Hanse Ave is storage of wood paneling by Knickerbocker. Lea Ronal Specialty Chemicals Worldwide (224-272 Buffalo Avenue Ext.) is located east of the Site. Farber Plastics (162 Hanse Avenue) is located west of the Site.

The Site is located approximately 500 feet east of the Freeport Creek, approximately 1,000 feet to the west of the Stadium Park Canal (also referred to as the Merrick River), and 4,000 feet to the northwest of Merrick Bay on the southeast shore of Long Island.

The Site is flat, sloping gently from north to south, with all elevations greater than 5 feet and less

than 10 feet above mean sea level. The Site is asphalt covered. The Site storm-water drainage system discharges into Freeport Creek approximately 1,000 feet northwest of the Site.

7.2 Land Use/Major Plant Communities Within One-Half Mile Of The Site

A cover type map detailing the major land use/plant communities within approximately a one-half mile radius of the Site is presented on Drawing No. 3 (Map Pocket). The cover type map was prepared based on interpretation and evaluation of aerial photographs, topographic maps and NYSDEC wetland maps. Field checking was performed to verify the accuracy of the cover type map. The cover types within a half-mile of the Site were classified using the New York Heritage Program Classification System (NHPCS, Reschke, 1990).

The predominant vegetation in each cover type was identified for areas classified as terrestrial natural (TN), palustrine (P) and lacustrine (L). The cover type boundary lines are approximate and have not been surveyed. The determination of dominance was qualitative, based on visual estimates. Vegetative plots and transects were not used in determining dominance. These methods are beyond the scope of a Step I analysis.

The predominant land use within a one-half mile radius of the Site is industrial and commercial with some residential homes. With the exception of five small areas of tidal marsh and an isolated area of upland habitat located along the Meadowbrook Parkway, there is no undeveloped land located within a one-half mile radius of the Site.

The upland habitat along the Meadowbrook Parkway is located approximately two thousand feet west of the Site. The predominant vegetation in this area is a mixture of herbaceous and woody vegetation. The predominant herbaceous vegetation is red raspberry (Rubus strigosus), seaside goldenrod (Solidago sempervirens), pokeweed (Phytolacca rigida) and grass species. The dominant woody vegetation is tartarian honeysuckle (Lonicera tatarica), staghorn sumac (Rhus typhinia) and arrowwood (Viburnum dentatum).

There are tidal marsh areas located south-southeast and east of the Site. The two tidal marshes to the south and southeast are part of a mosaic of tidal marshes located between the mainland and Jones Inlet. The other three tidal wetlands are small isolated areas located east of the Site; two along Stadium Park Canal and the third further east. The dominant vegetation in each of the marshes is spartina (Spartina species).

7.3 Wetlands Within A One-Half Mile And Two Mile Radius Of The Site

There are five New York State regulated freshwater wetlands located within a two-mile radius of the Site. Wetland F-5 is a Class I wetland. Wetlands F-2, F-4, F-6 and F-10 are Class II wetlands. The NYSDEC wetland classification system is based on a numerical rating of I to IV, with Class I wetlands representing the most significant wetlands. Criteria for classifying a wetland are detailed in the Freshwater Wetlands Maps and Classification Regulations (6NYCRR Part 664). The wetland locations are presented in Drawing No 5.

The is a large mosaic of tidal marshes, depicted on the New York State tidal marsh Inventory Maps located within a two mile radius of the Site. There are five tidal marshes located within a

one-half mile radius of the Site, which are classified by NYSDEC as High Marsh or Salt Meadow. The two tidal marshes to the south and southeast are part of a mosaic of tidal marshes located between the mainland and Jones Inlet. The other three tidal wetlands are small isolated areas located east of the Site; two along Stadium Park Canal and the third further east. The dominant vegetation in each of the marshes is spartina (Spartina species)

7.4 Streams And Related Surface Water Bodies Within A One Half Mile And Two Mile Radius Of The Site

Freeport Creek and Stadium Park Canal (Merrick River) are the only streams located within a two-mile radius of the Site. Freeport Creek and Stadium Park Canal are classified as Class SC, saline surface waters. The best usage of these waters is for fishing and they are suitable for fish propagation and survival. Water quality may also be suitable for primary and secondary contact recreation although other factors may limit the use for these purposes.

7.5 Resource Characterization Within One-Half And Two Miles Of The Site

Resource characterization consists of determining the wildlife species that may potentially utilize, or have been determined to utilize, the plant communities or habitats identified in the previous sections as existing within one-half mile of the Site. Also, any known species of concern (i.e., endangered, threatened, etc.) or significant habitats that may exist within two miles of the Site are identified. Additionally, the general quality of the habitats that are located within one-half mile of the Site and their ability to provide for the needs of the species that may utilize the habitats is discussed. Areas of observed vegetative stress, leachate seeps, documented evidence of fish and/or wildlife mortality and any known population impacts related to Site-related contaminants are presented.

7.5.1 Endangered, Threatened Or Special Concern Fish And Wildlife Or Plant Species Or Significant Habitats

The United States Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the NYSDEC Wildlife Resources Center and the NYSDEC Region 1 Office were contacted regarding the known occurrence of endangered, threatened, or special concern species or habitats located within a one-half mile radius of the Site.

The NYSDEC, USFWS and the NMFS indicated that there are no known occurrences of threatened, endangered, or special concern fish and wildlife species located within a one-half mile radius of the Site.

7.5.2 Fish and Wildlife Species Potentially Using Habitats Within a One-Half Mile Radius of the Site

The highly developed nature of the land located within a one-half mile radius of the Site severely limits the number of species that will occur within this defined area. Terrestrial species utilizing the upland habitat along the Meadowbrook parkway is most likely limited to small mammals and bird.

The aquatic species utilizing Freeport Creek and Stadium Canal is most likely somewhat limited due to the developed nature of these creeks. Within a one-half mile radius of the Site, fish and invertebrate species in these creeks would be representative of species associated with estuaries.

The species utilizing the tidal marsh areas south of the Site are potentially significant and could be representative of the large diversity of species that inhabit estuaries. A listing of the fish, invertebrate and amphibian, mammal and bird species that inhabit estuaries is beyond the scope of this document. However, a listing of some of the common species that could potentially be found in this area is provided in Table 22.

All species that could potentially utilize the habitats within a one-half mile radius of the Site are not included on these lists. Also, these lists are not meant to indicate that these species can always be found, or that all will be present at one time within one-half mile of the Site. These lists were prepared following a limited field evaluation of the habitats and review of available literature. These lists are not the result of a Site-specific population survey. Actual population surveys are complex and time intensive and are beyond the scope of a Step I baseline evaluation.

Many wildlife species are mobile and generally require a range of habitat types to meet their life cycle requirements. In addition, many species will only use the area within one-half mile of the Site for a portion of their life requisites. Thus, all the species identified on these lists were not actually observed within a one-half mile radius of the Site.

7.5.3 General Habitat Quality Within One-Half Mile of the Site

The upland habitat located adjacent to the Meadowbrook parkway is considered a poor quality habitat. This is a small area and its juxtaposition between the parkway and Stadium Park Canal limit wildlife access to the area. The area may provide habitat for a limited variety of small mammals and birds. It is a common ecological tenant that large blocks of undisturbed areas can support a greater number of species than smaller areas. This is partially related to the fact that larger areas will typically contain a wider variety of habitat types. Areas with diverse habitat types are more likely to contain the range of resources necessary to support a given species life cycle requirements. The greater number of habitat types the wider the diversity of plant communities. Animal species are ultimately dependent upon plants for survival, either directly in the case of herbivores, or indirectly with respect to animal species that use plants for shelter or feed on herbivores

The aquatic habitats of Freeport Creek and Stadium Park Canal located within a one-half mile radius of the Site most likely represent poor to moderate quality habitat. The shoreline of Freeport Creek has been bullheaded and is developed along both shores within a one-half mile radius of the Site. The western shore of Stadium Park canal is entirely developed within a one-half mile radius of the Site. There is a limited area of undeveloped terrestrial habitat and tidal marsh located along the east side of Stadium Park Canal.

The tidal wetland areas located within a half mile of the Site are most likely of moderate quality. Although these areas are small, there are larger areas of tidal wetlands located nearby in East Bay, on Fighting Island and in the Cow Meadow Preserve.

7.6 Applicable Fish And Wildlife Regulatory Criteria

The appropriate Site Specific Criteria (SSC) that may potentially be applicable to the Site are detailed below:

- Clean Water Act, 233 U.S.C. 1261 et seq. Sec. 404 regulates the discharge of pollutants into wetlands and other water bodies, including dredged or fill materials;
- The Freshwater Wetlands Act (Article 24 of the Environmental Conservation Law) and the Freshwater Wetlands Implementing Regulations (6NYCRR Parts 663 and 664) are designed to protect wetlands. Only wetlands that have been mapped by the State of New York are regulated;
- Tidal Wetlands Act (Article 25 of the Environmental Conservation Law) and the Tidal Wetlands Implementing Regulations (6NYCRR Part 661).
- Executive Order 11990, Protection of Wetlands. This order recognized the value of wetlands and directed federal agencies to minimize the degradation, destruction and loss of wetlands;
- Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.);
- Fish and Wildlife Coordination Act;
- NYSDEC, Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values, October 1993;
- NYSDEC, Water Quality Regulations for Surface Waters and Ground waters, 6NYCRR Parts 700-705;
- NYSDEC, Technical Guidance for Screening Contaminated Sediments, November 1993;
- USEPA, Interim Sediment Criteria Values For Nonpolar Hydrophytic Organic Chemicals (May 1988); and
- NYSDEC, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994.

7.7 Pathway Analysis

This section evaluates pathways through which wildlife could potentially be exposed to Site related contaminants. This evaluation includes the identification of habitats and fish and wildlife resources that could potentially be impacted by Site contaminants, potential pathways of contamination migration and exposure, and sources of contamination.

In order for fish and wildlife to be affected by chemical constituents from a Site, two conditions must exist. There first must be an avenue by which fish and wildlife can be exposed to chemical

constituents, referred to as a completed exposure pathway. In addition, the chemical concentrations within the completed exposure pathway must be of sufficient magnitude to cause an impact.

Potential fish and wildlife exposure pathways with respect to Site related contaminants include direct contact with water, soil or sediments that contain Site related chemicals, or ingestion of plants, animals or water, which have become contaminated with Site related chemicals.

There is no completed exposure pathway for wildlife exposure to Site contaminants at the Site or the immediately surrounding area. The area is paved and intensively developed with little to no wildlife habitat. Impacted media at the Site included ground water; sub-surface soils and to a limited extent storm drain sediments. The impacted sub-surface soils are at depth and are covered by asphalt. There are no ground water discharge points located on or in the immediate vicinity of the Site. The available information indicates that the contaminated media on-Site does not represent a threat to wildlife.

Ground water from the Site discharges to Freeport Creek. Additionally, storm drains from the Site discharge storm water and sediments to Freeport Creek via the on-Site storm drain system. Therefore, it is theoretically possible for fish and wildlife in Freeport Creek to be exposed to Site related chemicals.

FREEPORT CREEK SURFACE WATER AND SEDIMENT SAMPLES

Ten sediment samples were taken through out Freeport Creek and were analyzed for the NYSDEC TCL volatile organic compounds and TOC.

Freeport Creek Sediment volatile organic data are summarized in Table 19. The Freeport Creek sediment data indicate that the Site has not had a significant impact on Freeport Creek Sediment Quality. With the exception of a low estimated concentration (9 ug/Kg) of 1,1,1-TCA in the sample collected 200 feet downstream of the outfall from the Center of Freeport Creek, no 1,1,1-TCA or related degradation products were detected in the Freeport Creek sediment samples. No 1,1,1-TCA or related degradation products were detected in the sediment sample collected at the stormwater outfall.

Several volatile organic compounds (acetone, carbon disulfide, 2-butanone) were detected in the sediment samples collected upstream and downstream of the outfall. Upstream concentrations were generally consistent with the downstream concentrations. Chloroform, which is not a Site related chemical of concern, was detected at a low concentration (13 ug/Kg) in the downstream sample collected 100 feet downstream of the outfall and twenty-five feet from shore. Chloroform was not detected in the upstream samples.

Overall, Freeport Creek sediment quality downstream of the outfall is consistent with sediment quality upstream of the outfall. Sediment quality at the outfall does not indicate any Site related impacts. Data indicate that the Site has not had a significant impact on Freeport Creek sediment quality. Site related chemicals do not represent a threat to fish and wildlife via exposure to Freeport Creek sediments.

Nine surface water samples were collected from Freeport Creek and were analyzed for the

NYSDEC TCL volatile organic compounds. Analytical results are summarized in Table 18. The surface water data demonstrates that the Site is not impacting surface water quality in Freeport Creek. All surface water analytical results were below the respective surface water standards. With the exception of low concentrations of trichloroethene and 4-methyl-2-pentanone in the upstream center shallow sample and a low concentration of tetrachloroethene in the downstream center deep sample, no volatile organic compounds were detected at or above the reporting limit in any of the samples. Data indicates that Freeport Creek surface waters have not been significantly impacted and that the Site does not represent a threat to fish and wildlife associated with the Freeport Creek habitat.

LEGEND

RESD	RESIDENTIAL
IND	INDUSTRIAL
COM	COMMERCIAL
SMG	SALT MARSH GRASS
SSF	SUCCESSIONAL SHRUB FIELD
LZ	LITTORAL ZONE
	ONE-HALF MILE RADIUS
	APPROXIMATE VEGETATION BOUNDARY

GRAPHIC SCALE

300' 0 150' 300' 600' 1200'

(IN FEET)
1 inch = 300' ft.

LAND-USE
ONE-HALF MILE RADIUS

BURMAH CASTROL, INC.
159 HANSE AVENUE
FREEPORT, NEW YORK

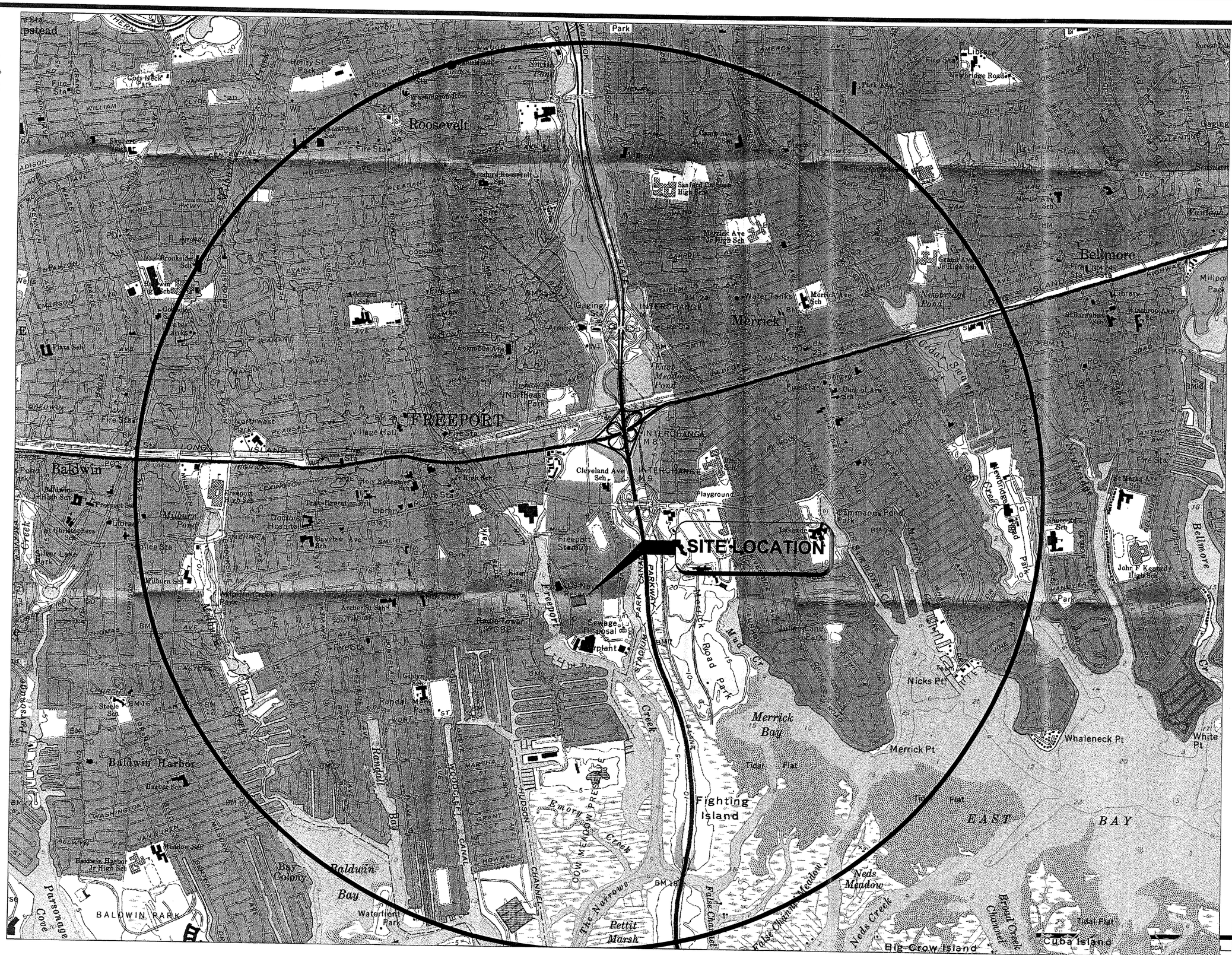
DELAWARE ENGINEERING, P.C.
28 Madison Avenue Extension
Albany, New York 12203
Phone 518-452-1290
FAX 518-452-1335

SCALE	AS SHOWN
DATE	JAN. 3, 2001
DRAWN BY	KJ
CHECKED BY	BZ
APPROVED BY	EF
FILENAME	Plot_aero.dwg
PROJECT NO.	
REVISED	

DRAWING NUMBER No. 3

SHEET NUMBER 1 OF 1

FILENAME: PLOT_AERO.DWG



MAP REFERENCE: USGS QUADRANGLE FREEPORT, N.Y. DATED 1969, PHOTOREVISED 1979.

DRAWING NO. 4

TOPOGRAPHY & DRAINAGE TWO-MILE RADIUS OF THE SITE

BURMAH CASTROL, INC.
(Formerly Columbia Cement Co. Site)
159 Hanse Avenue, Freeport, N.Y.

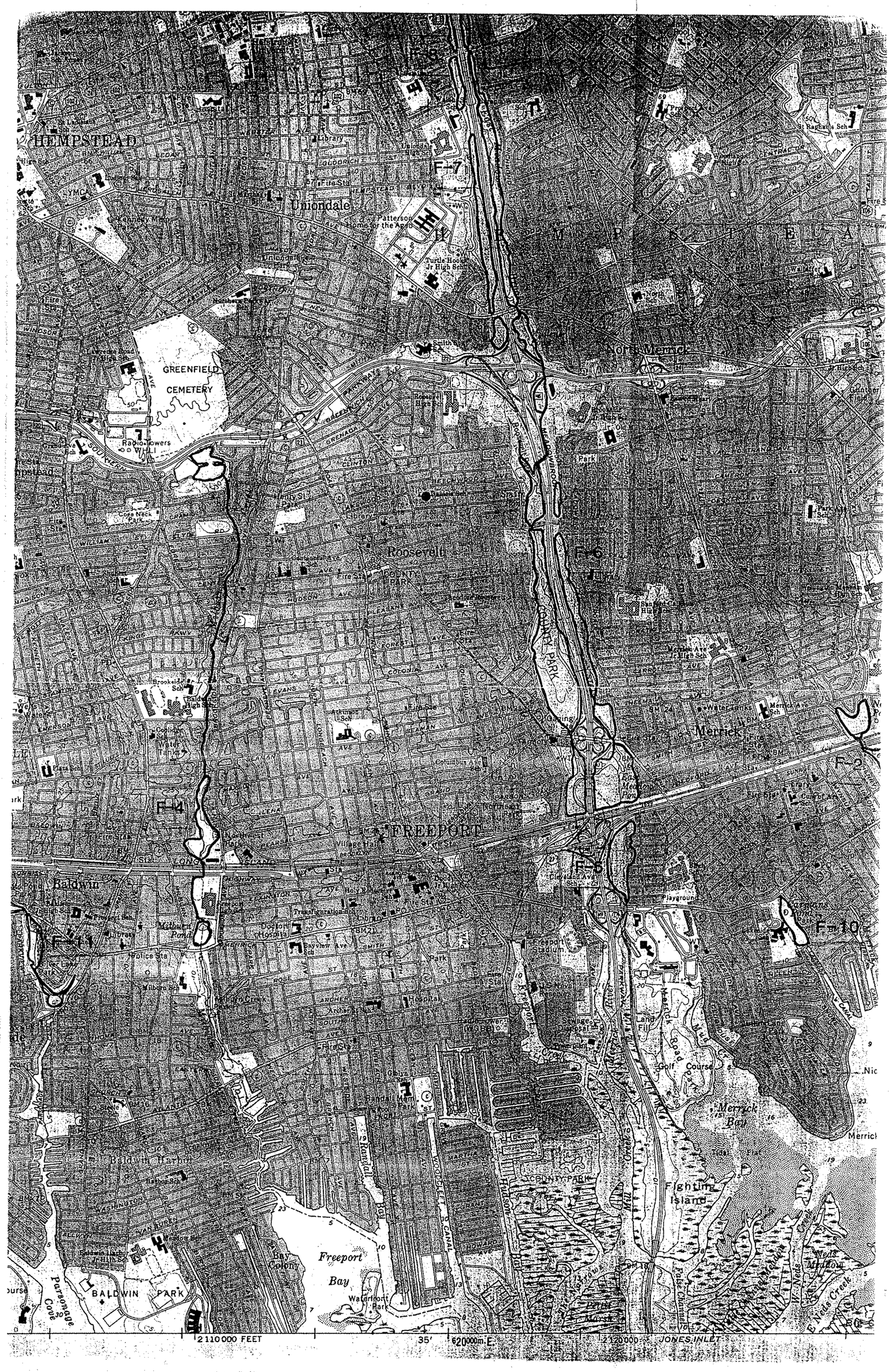
DELAWARE ENGINEERING, P.C.
28 Madison Avenue Extension
Albany, New York 12203
Phone 518-452-1290
FAX 518-452-1335

DRAWN BY	KJ
CHECKED BY	
APPROVED BY	EF
FILENAME	
PROJECT NO.	
REVISED	

DRAWING NUMBER

SHEET NUMBER OF

FILENAME: BURMA CASTROL/IMAGE.DWG



DRAWING NO. 5

LEGEND:

F-1

Indicates NYSDEC Wetland

GRAPHIC SCALE

2000' 0 1000' 2000' 4000' 8000'

(IN FEET)
1 inch = 2000ft.

NYSDEC REGULATED WETLANDS WITHIN TWO MILES OF THE BURMAH CASTROL FORMER CCC SITE

BURMAH CASTROL, INC.
(Formerly Columbia Cement Co. Site)
159 Hanse Avenue, Freeport, N.Y.

SCALE	AS SHOWN
DATE	JAN. 8, 2001
DRAWN BY	KJ
CHECKED BY	
APPROVED BY	EF
FILENAME	
PROJECT NO.	
REVISED	

DELAWARE ENGINEERING, P.C.
28 Madison Avenue Extension
Albany, New York 12203
Phone 518-452-1290
FAX 518-452-1335

DRAWING NUMBER

SHEET NUMBER OF

FILENAME: FIG_G-3.DWG

Appendix 3C Fish and Wildlife Resource Impact Analysis Decision Key		If YES Go to:	If NO Go to:	ANSWER
1.	Is this site or area of concern a discharge or spill event?	13	2	**YES**
2.	Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3	
3.	Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9	
4.	Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5	
5.	Has the contamination gone off-site?	6	14	
6.	Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14	
7.	Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8	
8.	Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14	
9.	Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake or lagoon vi. Drainage ditch or canal vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10	
10.	Is the lack of resources due to the contamination?	Section 3.10.1	14	
11.	Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12	
12.	Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12	
13.	Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resources? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14	**NO**
14.	No Fish and Wildlife Resources Impact Analysis needed.			