

REMOVAL ACTION REPORT

**VCC COLUMBIA PHOSPHATE
COLUMBIA, RICHLAND COUNTY, SOUTH CAROLINA
TDD No.: TNA-05-001-0085
Contract No.: EP-W-05-053**

Revision 0

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Emergency Response and Removal Branch
Sam Nunn Atlanta Federal Center
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Prepared by:

Oneida Total Integrated Enterprises
Superfund Technical Assessment and Response Team
1220 Kennestone Circle, Suite D
Marietta, Georgia 30066

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Date Submitted	:	December 7, 2009
EPA OSC	:	Lynnette Sholar
Telephone No.	:	404-562-9126
Prepared by	:	OTIE-START
START Project Manager	:	Ryan Stubbs
Telephone No.	:	(678) 355-5550 Ext. 5701

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the Oneida Total Integrated Enterprises, (OTIE) Superfund Technical Assessment and Response Team (START), under Contract Number (No.) EP-W-05-053, Technical Direction Document (TDD) No. TNA-05-001-0085, to provide technical support during removal activities conducted at Virginia Carolina Chemical Company (VCC) Columbia Phosphate (site) located in Columbia, Richland County, South Carolina. The general purpose of a Time-Critical Removal Action (RA) is to remove or minimize any potential threats to human health or the environment. Under this TDD, START was specifically tasked with:

- Preparing a Site-Specific Health and Safety Plan (HASP);
- Documenting removal activities with written logbook notes and photographs;
- Conducting a treatability study to assess disposal options for the contaminated soils following excavation;
- Collecting waste characterization samples from excavated soil stockpiles for disposal profiling; and,
- Screening soils *in situ* using an X-Ray Fluorescence (XRF) to delineate horizontal and vertical extent of excavation.

Additionally, START was tasked with preparing a comprehensive report summarizing the site conditions, removal activities, treatability study, and analytical results following the conclusion of the RA.

The objectives of this RA report are as follows:

- Briefly discuss the known information about the site. Section 2.0 provides information concerning site location and description; site characteristics; site operations and history; and previous investigations.
- Provide a description of the treatability study that was performed prior to the removal actions. Section 3.0 describes the treatability study.
- Provide a description of the removal actions performed. Section 4.0 describes removal activities.
- Ensure all Data Quality Objectives (DQOs) were performed in accordance with the prescribed guidance documents including the EPA Science and Ecosystem Support Division (SED) *Field Branches Quality System and Technical Procedures* (FBQSTP) (Ref. 1) and the EPA Region 4 Emergency Response and Removal Branch (ERRB) Quality Assurance Project Plan (QAPP) (Ref. 2). These DQOs specifically apply to sampling locations, sample types, sampling procedures, use of data, data types, and field Quality Assurance/Quality Control (QA/QC) samples.

Figures and tables are provided as Appendices A and B, respectively. Logbook notes are provided as Appendix C and the photograph log is provided as Appendix D. Finally, the analytical results are presented in as Appendix E.

2.0 BACKGROUND

The following section details information about the site including site location, site characteristics, site history, and previous investigations conducted at the site.

2.1 SITE LOCATION AND DESCRIPTION

The site is a former superphosphate manufacturing facility located at 707 Catawba Street in Columbia, Richland County, South Carolina. The geographic coordinates from the center of site are 33° 59' 15" North Latitude and 81° 2' 8" West Longitude. The site is approximately 5 acres in size. It is bounded to the north by a rail line, to the west by Wayne Street, to the south by Catawba Street, and to the east by Gadsden Street (see Appendix A, Figure 1).

2.2 SITE CHARACTERISTICS

The site is located within 1 mile of downtown Columbia in an urban setting and currently consists of three buildings that share a common wall. The site is comprised of buildings, pavement, gravel, and grassy areas. Surface water run-off leaves the site to the south and then west, flowing along a roadside or draining in roadside storm water drains. The majority of the population within a 4-mile radius of the site is provided potable water by the City of Columbia Water Works.

2.3 SITE OPERATIONS AND HISTORY

The Columbia Phosphate Company was involved with the manufacturing of superphosphate fertilizers as early as 1893. According to available file information, Sanborn® maps from 1893 and 1898 indicate two separate facilities, Globe Phosphate and Columbia Phosphate, separated by Gadsden Street. Acid chambers are visible at both facilities in the 1893 and 1898 maps. The 1904 Sanborn® map indicated ownership of both facilities to be VCC. The 1910 Sanborn® map refers to the facilities as VCC Globe Mill and VCC Columbia Mill. Acid chambers at VCC Globe Mill are absent in the 1904 map.

The processing of superphosphate was fairly universal. The rock was mined as tricalcium phosphate. To be usable as a fertilizer, the rock was dried and treated with sulfuric acid. The superphosphate was

manufactured on site using the lead chamber process to improve solubility, purged of the sulfuric acid, and the resulting ore was mixed with calcium sulfate to yield superphosphate.

Sulfuric acid added to finely ground low-grade phosphate-rich rock produces superphosphate and releases fluorine as a by-product. Iron, from the burning of the sulfides, is the most probable source of the reddish colored soils encountered at the site. Arsenic contamination at the site is a likely result of the burning of sulfides such as arseno-pyrite. Lead from the lead-lined acid chambers, leached by the sulfuric acid, is the most probable source of the lead contamination at the site.

2.4 PREVIOUS INVESTIGATIONS

On April 4, 2007, the South Carolina Department of Health and Environmental Control (SCDHEC), Site Assessment Section, conducted field screening activities in support of a Pre-Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) investigation at the site (Ref. 3). On-site surface soils were screened for arsenic, copper, iron, mercury, and lead using an Innov-X XT440L XRF instrument. Of the 14 locations screened on site, eight exceed the Removal Action Level (RAL) for arsenic in residential soil [40 milligrams per kilogram (mg/kg)]. Eight locations exceeded the RAL for lead in residential soil (400 mg/kg). Specifically, XRF readings for arsenic ranged from 19.97 parts per million (ppm) to 906.36 ppm, while XRF reading for lead ranged from 176.69 ppm to 12,252.67 ppm.

In July 2008, START conducted a field investigation in support of a Removal Site Evaluation (RSE) at the site to identify the nature and extent of arsenic and lead contamination on site and to determine the need for federal intervention under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Ref. 4). A total of 30, 4-foot, soil boring cores and two off-site surface soil samples were screened *in situ* for arsenic and lead using a Niton[®] XRF. One soil sample from each soil core and two off-site surface soil samples were collected and submitted to SEDS Analytical Services Branch (ASB) for confirmation analysis of Target Analyte List (TAL) metals including mercury. Correlations between field and laboratory results for arsenic indicated a correlation coefficient of 0.9475 and 0.2245 for lead. However, XRF arsenic and lead results were not used to evaluate contamination at the site due to the low correlation of lead screening results to the laboratory analytical results. SEDS ASB data were the primary data used for interpretation of arsenic and lead concentrations in soils at the site.

For the purpose of interpreting sampling results, RSE results were compared to the residential RALs in soil for arsenic and lead. Analytical results indicated that on-site arsenic concentrations ranged from 1.4 mg/kg to 180 mg/kg in surface soils and 1.1 mg/kg to 2,400 mg/kg in subsurface soils. Thirteen of the 30 on-site samples contained arsenic levels at or exceeding the RAL of 40 mg/kg for arsenic in residential soil. Lead concentrations ranged from 13 mg/kg to 2,700 mg/kg in surface soil and 6.2 mg/kg to 14,000 mg/kg in subsurface soil. Twenty-one of the 30 on-site samples contained lead levels exceeding the RAL of 400 mg/kg for lead in residential soil. Analytical results for the two off-site surface soil samples indicated levels of arsenic and lead well below their respective RAL in residential soil. Analytical data confirmed that on-site surface and subsurface soils contain high concentrations of arsenic and lead, exceeding their RALs of 40 mg/kg and 400 mg/kg, respectively, to a depth of 3 to 4 feet below ground surface (bgs).

In March 2009, a second field investigation was conducted by START in support of the RSE. START utilized an XRF to screen nine locations *in situ*, and collected 10 soil samples for *ex situ* XRF screening and laboratory analysis (Ref. 5). Three samples were also analyzed for Toxicity Characteristic Leaching Procedure (TCLP) analysis to support a treatability study; however, EPA suspended the treatability test, using the soil material from the three samples collected, after TCLP arsenic and lead results were reported well below the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Maximum Allowable Level of 5.0 milligrams per liter (mg/L). *In situ* XRF screening results indicated four locations with lead above the RAL ranging from 2,855 ppm to 10,723 ppm. Laboratory results indicated only one sample location with lead concentrations exceeding the RAL.

Additional investigations were performed by START in August 2009 prior to commencing the RA. These investigations were conducted in support of the RA and are described in subsequent sections of this report.

3.0 TREATABILITY STUDY

This section describes the treatability study that was conducted by START in support of the RA.

3.1 BACKGROUND

START was tasked to complete a treatability study in support of the RA. Based on *in situ* XRF readings obtained during the March 2009 field investigation, EPA determined that a treatability study was needed prior to the RA. The treatability study's purpose was to determine if materials provided by the

Emergency Response and Removal Services (ERRS) contractor, Environmental Restoration LLC, would act as a stabilizing agent for metals present in the site soils, thus allowing for more cost effective disposal of stockpiled material. START tested two stabilizing agents (amendments): a 90/10 mixture of Free Flow 100® FS (10%) and Free Flow 200® (90%) (calcium oxide and phosphate compounds) provided by ERRS; and EnviroBlend® 90/10 (a magnesium oxide and phosphate material) recommended by START.

On August 18, 2009, START and EPA On-Scene Coordinator (OSC) Sholar collected on-site soil to perform the treatability study. START collected a 2.5-gallon sample of soil from the immediate area where the highest *in situ* reading was recorded in March 2009 for use in the treatability study. The sample was collected from ground surface down to six inches below ground surface (bgs) and thoroughly homogenized by repeatedly rotating and tumbling the 5-gallon bucket that contained the 2.5-gallons of soil.

In order to identify the baseline for the treatability study, a portion of the homogenized sample was submitted as a control sample to CompuChem, Cary, North Carolina, for TCLP RCRA 8 metals analysis by SW846-6010. Analytical results indicated that the baseline sample exceeded the Hazardous Waste benchmark for TCLP lead of 5.0 mg/L. Table 1 in Appendix B presents the results of this sample.

All study experiments were carried out in weight to weight percentages that would be easily replicated in the field.

3.2 BENCHSCALE STUDY UTILIZING FREE FLOW®

On August 25, 2009, three treatability samples were prepared from the soil collected. The percentile amendment amounts were 1.0 %, 5.0%, and 10%. One hundred grams (100 g) of collected soil was mixed with the amendment by percent and 10% water. These samples were then submitted to CompuChem for TCLP RCRA 8 metals analysis. The analytical results of these samples showed that the 5.0% sample provided the greatest reduction of lead leachate concentration in the soil. However, the concentration was still greater than five times the Hazardous Waste benchmark for TCLP lead of 5.0 mg/L. Based on the results of these samples it was deemed necessary to utilize another amendment. Table 1 in Appendix B presents the results of these samples.

3.3 BENCHSCALE STUDY UTILIZING ENVIROBLEND®

On September 21, 2009, two treatability samples were prepared from the soil collected. The percentile amendment amounts were 5.0% and 10%. One hundred grams (100 g) of collected soil was mixed with

the amendment by percent and 10% water. These samples were then submitted to Analytical Environmental Services, Inc. (AES) in Atlanta, Georgia for TCLP RCRA 8 metals analysis. The analytical results of these samples showed that 10% of EnviroBlend® 90/10 effectively reduced the lead leachate concentration to below the Hazardous Waste benchmark for TCLP lead of 5.0 mg/L. Table 1 in Appendix B presents the results of these samples.

3.4 CONCLUSION

Based on the results of the treatability study for the stabilization of arsenic and lead contaminated soils at the site, START reviewed the effectiveness of the amendments, the volume of amendments needed to meet the objectives, the cost-effectiveness of the amendments and, above all, the requirements stipulated in the EPA's Land Disposal Restrictions; START recommended the addition of 10% of EnviroBlend® 90/10 and 10% water to the excavated soil stockpiles to most effectively meet all these factors.

4.0 REMOVAL ACTIVITIES

The following sections describe removal activities conducted at the site during the RA from September 29, 2009 to October 16, 2009. START provided oversight and technical support to EPA during the RA. Specifically, START conducted the following activities:

- performed perimeter air monitoring for dust particulates using a DataRam during all removal operations at the site;
- performed oversight of National Fence Company during the installation of a temporary perimeter fence to control site access;
- collected *in situ* XRF readings on the surface of the gravel drive that enters the site from Catawba Street near the southwest corner of the site;
- collected *in situ* XRF readings on the base and walls of the excavations, where it was possible;
- provided oversight while ERRS performed clearing of the berm area on site and installation of erosion control silt fencing along the western boundary of excavation area B;
- performed oversight of soil excavation, blending of EnviroBlend® into soil stockpiles; disposal; backfill activities; installation of erosion control along the slope of excavation areas B and C; and, grass seeding;
- collected composite soil samples from the untreated and treated soil stockpiles for confirmation TCLP analysis.

Soil excavation activities are discussed in Section 4.1 and an overall disposal summary is provided in Section 4.2.

4.1 SOIL EXCAVATION

4.1.1 Excavation and Soil Disposal Activities

During the week of September 29, 2009, ERRS constructed soil staging areas and began excavating contaminated soil from the central portion of the berm area (Area A) and from Excavation Area B (subdivided as B1 and B2). START conducted air monitoring for particulates directly downwind of Excavation Area B at the closest proximity location where potential human exposure existed. Figure 2 in Appendix A shows the extent of the excavation areas and the locations of the soil stockpiles.

Four areas were excavated based on the results of the RSE field investigations conducted by START in July 2008 and March 2009. The first area (Area A) was approximately 2,060 square feet and was excavated to ground surface. Area A was a raised berm elevated on average approximately 3 feet above ground surface. The second and third areas (Areas B1 and B2) combined totaled approximately 7,429 square feet and comprised the largest areas excavated. Area B1 was excavated to an average depth of 2 feet bgs, with the exception of magenta colored “hot spots” that were excavated to a depth of 3 feet bgs. Area B2 was excavated to a depth that ranged from 6 to 18 inches bgs based on visual indication of the magenta colored soil (visual indication of arsenic/lead contamination) and on *in situ* XRF readings. The fourth area (Area C) was approximately 2,437 square feet and was excavated to an average depth of 2.5 feet bgs.

On October 5, 2009, ERRS collected and submitted two samples (one from backfill material and the other from topsoil) to AES for total metals analysis by SW846 Methods 6010B and SW7471A; target compound list (TCL) semivolatiles organic compounds (SVOC) by SW846 Method 8270C; and TCL volatile organic compounds (VOCs) by SW846 method 8260B. All analytes were below reporting limits (RL), with the exception of barium detected at 8.77 milligrams per kilogram (mg/kg) and chromium detected at 3.82 mg/kg in sample 0002-TPSOIL. The analytical results for these samples are presented in Appendix E.

From October 7, 2009 to October 15, 2009, ERRS loaded fifty-two 25-ton dump trucks with non-hazardous soil for disposal at the Chambers Screaming Eagle Road Landfill in Elgin, South Carolina.

From October 9, 2009 to October 16, 2009, approximately 650 cubic yards of clean backfill was delivered by L.A. Barrier and Son, Inc. to the site and spread by ERRS. After ERRS had completely backfilled all the areas with clean fill, Kentucky 31 Tall Fescue grass seed was spread.

4.1.2 Waste Characterization Sampling

START conducted sampling of RA excavated soil stockpiles for waste characterization purposes. One composite soil sample was collected from each of the excavated areas' soil stockpiles. The samples were containerized, placed on ice, and submitted to AES for analysis of TCLP RCRA 8 metals. Table 2 in Appendix B summarizes the soil stockpile samples collected during the RA. All samples were collected in accordance with the FBQSTP.

4.1.3 Waste Characterization Analytical Laboratory Results

The laboratory analytical reports for stockpile samples collected during the RA are presented in Appendix E. Stockpile samples were compared to the RCRA Hazardous Waste Characterization values. Laboratory results indicated stockpiles B1, B2, and C were above the Hazardous Waste benchmark for TCLP lead of 5.0 mg/L. Stockpiles B1, B2, and C were then treated with EnviroBlend®, then START resampled stockpiles B1, B1, and C, and ERRS submitted the samples to AES for analysis of TCLP RCRA 8 metals. The results for the treated samples were all under the Hazardous Waste benchmark for TCLP lead of 5.0 mg/L.

4.2 DISPOSAL SUMMARY

The following describes the volumes and types of materials disposed by ERRS during this RA:

- 855 cubic yards of non-hazardous soil was removed from the site

4.3 AIR MONITORING

Prior to the start of excavation activities, START collected a background reading with the DataRam. The background reading had a concentration of 5.6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and a time weighted average (TWA) of $7.8 \mu\text{g}/\text{m}^3$. During excavating activities, START placed the DataRam east of excavation Area B, as this was downwind and in closest proximity of potential human exposure. During the field event, periodic readings were performed with the DataRam in a similar manner as a personal DataRam. No readings observed were above the Occupational Safety and Health Administration (OSHA) permissible exposure limit of $0.05 \text{ mg}/\text{m}^3$ (TWA) for lead in air. The ERRS contractor performed periodic soil wetting as a measure to suppress or reduce any potential risks associated with fugitive dust

emissions. Concentrations of respirable dust identified during air monitoring generally ranged from 0.000 mg/m³ to 0.04 mg/m³.

4.4 IN SITU XRF READINGS

START collected *in situ* XRF readings along the gravel drive that enters the site from Catawba Street. None of the readings from the gravel drive exceeded the commercial RALs for arsenic or lead. START also collected *in situ* XRF readings from the base and walls of excavation Area B. At the base of the trench, two feet bgs, START detected some readings above the commercial RAL for arsenic and/or lead. There was a total of 10 XRF readings above the commercial RALs for arsenic and/or lead; however, these readings are not for confirmation purposes. Table 3 in Appendix B presents a summary of the *in situ* XRF readings.

5.0 CONCLUSION

Under TDD No. TNA-05-001-0085, START was tasked to provide technical support to the EPA during removal activities conducted at the VCC Columbia Phosphate site. Activities performed in support of this TDD included documenting removal activities with written logbook notes and photographs, and collecting waste characterization samples from excavated soil stockpiles for disposal profiling.

Removal activities at the site started on September 29, 2009 and were completed on October 16, 2009. RA activities included the excavation, treatment, and disposal of contaminated on-site soil.

In addition to performing oversight of removal activities, START collected *in situ* XRF readings on the surface of the gravel drive that enters the site from Catawba Street near the southwest corner of the site; collected *in situ* XRF readings on the base and walls of excavated areas, where possible; and, collected composite soil samples from the untreated and treated soil stockpiles for analysis for TCLP analysis.

The field activities also included the excavation and removal of lead impacted soil from four areas. The first area, Area A, was approximately 2,060 square feet and was excavated to ground surface. Area A was a raised berm elevated, on average, approximately 3 feet above ground surface. Approximately 228 cubic yards of soil was excavated from Area A. The second and third areas (Areas B1 and B2, respectively) combined totaled approximately 7,429 square feet of soil and comprised the largest area of excavation. Area B1 was excavated to an average depth of 2 feet bgs, with the exception of magenta colored “hot spots” that were excavated to a depth of 3 feet bgs. Area B2 was excavated to a depth that

ranged from 6 to 18 inches bgs based on visual indication of the magenta colored soil. Site specific sampling and analysis provided a correlation between the soil discoloration and arsenic/lead contamination. This correlation was also supported by real-time *in situ* XRF readings. Areas B1 and B2 combined had a total of 447 cubic yards excavated. The fourth area (Area C) was approximately 2,437 square feet and was excavated to an average depth of 2.5 feet bgs. Area C had approximately 180 cubic yards excavated.

Prior to the excavation, the treatability study tested two stabilizing agents (amendments): a 90/10 mixture of Free Flow 100® FS (10%) and Free Flow 200® (90%) and EnviroBlend® 90/10. The study concluded based on the results that the stabilization of arsenic and lead contaminated soils at the site, and to ensure a safety margin, START recommended the addition of 10% of EnviroBlend® 90/10 and 10% water to the excavated soil stockpiles.

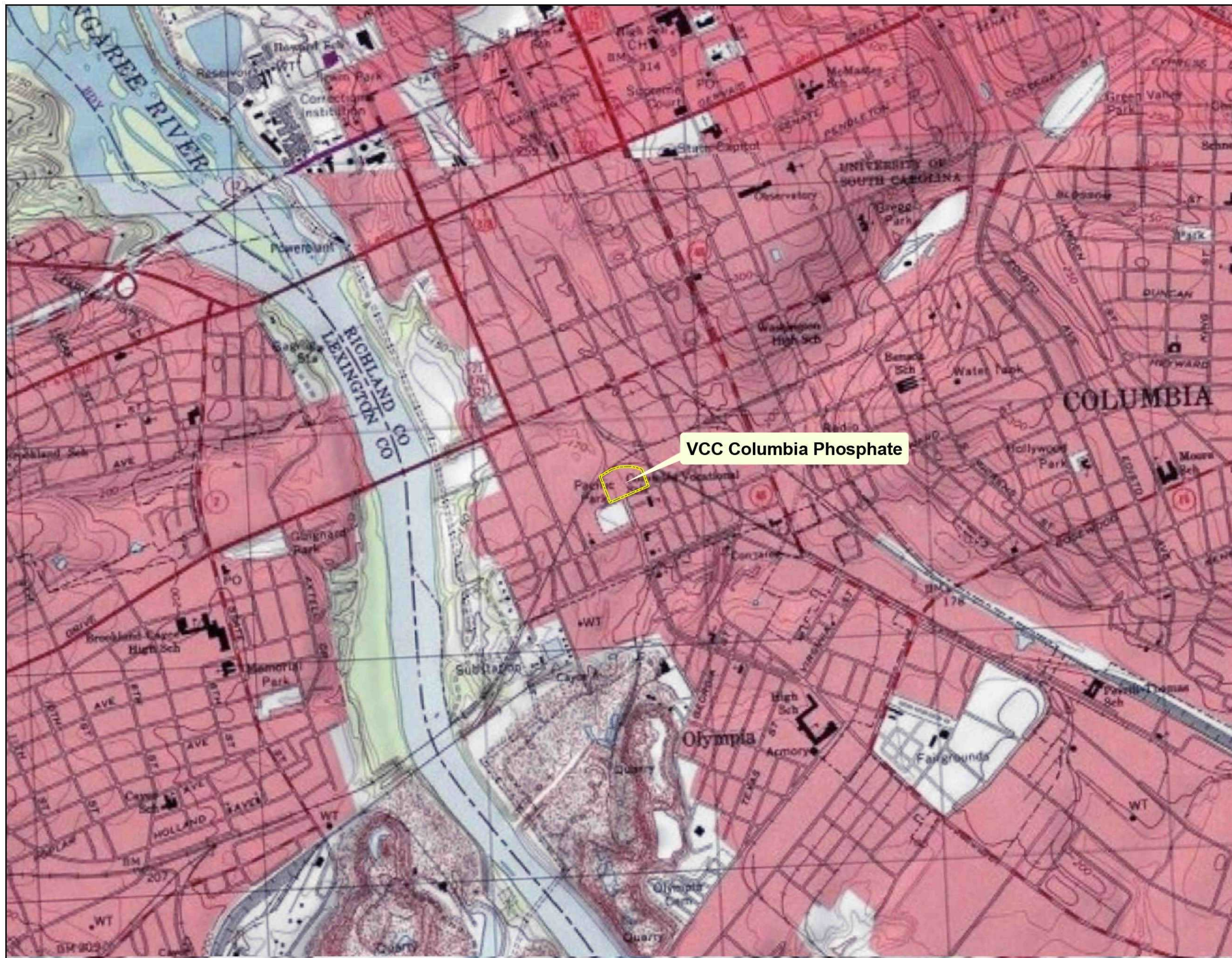
Three stockpiles (B1, B2, and C) had to be treated with EnviroBlend® as recommended by START. The analytical results for the soil in stockpile A was below the TCLP levels for lead and did not require treatment. After treatment with EnviroBlend®, the analytical results of the treated soil from stockpiles B1, B2, and C came back below RLs. The excavated treated soils meet and exceed the requirements set for under the Land Disposal Restrictions (40 CFR Part 268).

Further activities associated with this site will be at the direction of the EPA. No further START activities are anticipated at this time.

6.0 REFERENCES

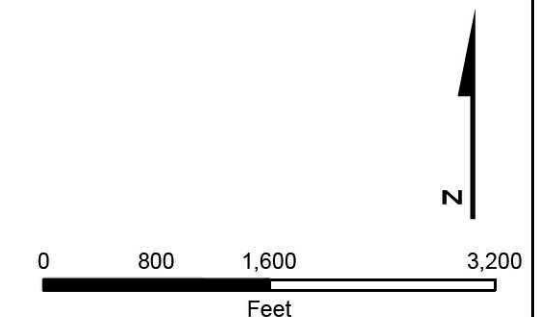
1. U.S. Environmental Protection Agency (EPA), Science and Ecosystem Support Division (SESD), Region 4. *Field Branches Quality System and Technical Procedures* (FBQSTP). November 2007.
2. EPA, Region 4 Emergency Response and Removal Branch (ERRB) Quality Assurance Project Plan (QAPP). October 2001.
3. South Carolina Department of Health and Environmental Control (SCDHEC) Pre-CERCLIS Report. April 2007.
4. T N & Associates, Inc. (TN&A) Removal Site Evaluation Report, Revision 1. October 2008.
5. Oneida Total Integrated Enterprises (OTIE)– TN&A Addendum Removal Site Evaluation, Revision 0. June 2009.

APPENDIX A
FIGURES



Legend

Site Boundary



 United States Environmental Protection Agency

VCC COLUMBIA PHOSPHATE
COLUMBIA, RICHLAND COUNTY,
SOUTH CAROLINA
TDD: TNA-05-001-0085

Figure 1
TOPOGRAPHICAL MAP





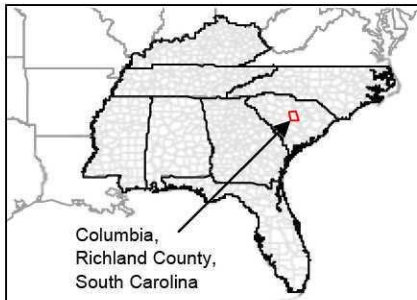
Scale: 1 inch = approximately 92 feet

Note: Excavation areas and stockpiles are shown in approximate size.

Legend

- Site Boundary
- Excavated areas
- Excavated stockpiles

SOURCE: Richland County 2009
Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.



United States Environmental Protection Agency

VCC COLUMBIA PHOSPHATE
COLUMBIA, RICHLAND COUNTY,
SOUTH CAROLINA
TDD No. TNA-05-001-0085

Figure 2
SITE LAYOUT MAP



APPENDIX B
TABLES

VCC COLUMBIA PHOSPHATE
TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR TREATABILITY SAMPLES

Sample Number	Percent and Type Stabilizing Agent	TCLP (mg/L)							
		Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
CP-TS-01	1.0% 90/10 Free Flow	0.0299	2.27	0.0107	0.0023	56.4	0.00027	0.0281	0.00062
CP-TS-05	5.0% 90/10 Free Flow	0.0644	0.175	0.0127	0.0262	26.9	0.00026	0.0308	0.00062
CP-TS-10	10% 90/10 Free Flow	0.174	0.165	0.0122	0.0351	34.2	0.00039	0.0307	0.0013
CP-TS-CTR	NA	0.0236	0.467	0.00900	0.0011	67.7	0.00010	0.0261	0.00062
CP-TS-EN-05	5% 90/10 Enviroblend	<0.250	3.19	<0.0250	<0.0500	9.51	<0.00400	<0.100	<0.0250
CP-TS-EN-10	10% 90/10 Enviroblend	<0.250	2.41	<0.0250	<0.0500	2.21	0.00556	<0.100	<0.0250

Notes:

Bold and gray shaded - Values exceed the RCRA Hazardous Waste Limits

Bold - Analyte was detected above the Reporting Limit

< - Analyte was not detected above the Reporting Limit

CP - Columbia Phosphate

CTR - Control

EN - EnviroBlend

mg/L - milligrams per liter

NA - Not applicable

RCRA - Resource Conservation and Recovery Act

TCLP - Toxicity Characteristic Leachate Procedure

TS - Treatability Study

VCC COLUMBIA PHOSPHATE
TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR STOCKPILE SOIL SAMPLES

Sample Number	Untreated or Treated	Sample Collection Date	TCLP (mg/L)							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
CP-SP-A	Untreated	10/1/2009	<0.00400	1.53	<0.0250	<0.0500	0.375	<0.00400	<0.100	<0.0250
CP-SP-B1	Untreated	10/1/2009	<0.250	1.39	<0.0250	<0.0500	6.70	<0.00400	<0.100	<0.0250
CP-SP-B2	Untreated	10/1/2009	<0.250	1.37	<0.0250	<0.0500	11.6	<0.00400	<0.100	<0.0250
CP-SP-C	Untreated	10/1/2009	<0.250	1.09	<0.0250	<0.0500	12.1	<0.00400	<0.100	<0.0250
CP-SP-D	Untreated	10/2/2009	<0.250	1.36	<0.0250	<0.0500	4.50	<0.00400	<0.100	<0.0250
CP-SP-B1	Treated	10/9/2009	<0.250	<0.500	<0.0250	<0.0500	<0.0500	<0.00400	<0.100	<0.0250
CP-SP-B2	Treated	10/9/2009	<0.250	<0.500	<0.0250	<0.0500	<0.0500	<0.00400	<0.100	<0.0250
CP-SP-C	Treated	10/9/2009	<0.250	<0.500	<0.0250	<0.0500	<0.0500	<0.00400	<0.100	<0.0250

Notes:

Bold and gray shaded - Values exceed the RCRA Hazardous Waste Limits

Bold - Analyte was detected above the Reporting Limit

< - Analyte was not detected above the Reporting Limit

CP - Columbia Phosphate

SP - Stockpile

mg/L - milligrams per liter

RCRA - Resource Conservation and Recovery Act

TCLP - Toxicity Characteristic Leachate Procedure

VCC COLUMBIA PHOSPHATE
TABLE 3
SUMMARY OF *IN SITU* XRF READINGS

Sample ID	Sample Collection Date	Latitude	Longitude	Lead		Arsenic	
				Result (ppm)	Error (+/-)	Result (ppm)	Error (+/-)
CP Roadway 001	9/29/2009	33.98717	-81.03649	166.57	20.12	25.11	15.64
CP Roadway 002	9/29/2009	33.98710	-81.03649	129.18	17.58	< LOD	20.33
CP Roadway 003	9/29/2009	33.98699	-81.03638	636.43	41.12	77.53	31.78
CP Roadway 004	9/29/2009	33.98692	-81.03644	141.19	18.37	27.56	14.41
CP Roadway 005	9/29/2009	33.98681	-81.03638	1396.28	45.97	127.56	34.9
CP Roadway 006	9/29/2009	33.98671	-81.03632	271.16	23.59	32.22	18.16
CP Roadway 007	9/29/2009	33.98681	-81.03639	215.99	20.11	< LOD	22.99
CP Roadway STD RCRA	9/29/2009	NA	NA	463.55	33.87	442.12	31.03
cp pit soil	9/30/2009	NC	NC	8345.36	224.72	892.57	172.57
std-rcra8	10/1/2009	NA	NA	410.81	32.23	433.14	29.75
cp-bx-01	10/1/2009	33.98709718830	-81.03621530820	2796.6	86.44	300.51	66.24
cp-bx-02	10/1/2009	33.98703909060	-81.03619921220	14406.65	190.34	739.71	141.46
cp-bx-03	10/1/2009	33.98699223960	-81.03619142670	125.47	15.07	20.82	11.72
cp-bx-04	10/1/2009	33.98698557420	-81.03623339210	47.47	10.69	14.54	8.56
cp-bx-05	10/1/2009	33.98702515900	-81.03625236600	4517.59	96.71	318.09	72.65
cp-bx-06	10/1/2009	33.98707044550	-81.03627247530	570.77	29.34	50.71	22.27
cp-bx-07 wall	10/1/2009	33.98711413870	-81.03622157350	787.76	38.71	83.35	29.62
cp-bx-08 wall	10/1/2009	33.98706300130	-81.03629699180	902.41	44.58	82.22	33.86
cp-bx-09 wall	10/1/2009	33.98700906030	-81.03627543500	1129.63	45.19	60.91	33.68
cp-bx-10 wall	10/1/2009	33.98695960950	-81.03626465740	1323.35	55.96	116.44	42.47
cp-bx-11 wall	10/1/2009	33.98689544240	-81.03623750210	995.69	43.62	77.97	32.94
cp-bx-12	10/1/2009	33.98690065950	-81.03621659240	113.59	14.56	17.95	11.3
cp-bx-13	10/1/2009	33.98692109550	-81.03615975880	134.21	15.2	84.69	13.67
cp-bx-14	10/1/2009	33.98693936030	-81.03610470300	3612	107.96	165.92	80.26
cp-bx-15	10/1/2009	33.98694986130	-81.03605301000	569.08	27.5	38.98	20.63
cp-cx-01 sur	10/1/2009	33.98685657930	-81.03623736530	280.11	18.41	< LOD	20.71
cp-cx-02 sur	10/1/2009	33.98686241790	-81.03628274050	5463.59	177.17	392.72	133.75
cp-cx-03 sur	10/1/2009	33.98697398370	-81.03633576710	2022.36	78.3	158.73	59.27
cp-cx-04 sur	10/1/2009	33.98701087860	-81.03629446130	1161.29	41.92	< LOD	46.47
RCRA 8 STD	10/2/2009	NA	NA	455.8	33.75	442.13	30.93
STD Area C	10/9/2009	NA	NA	399.31	31.87	459.31	30.01
Area C 001	10/9/2009	NC	NC	190.5	17.07	< LOD	19.2
Area C 002 wall 8 inch	10/9/2009	NC	NC	590.73	31.74	< LOD	35.3
Area C 003 wall 8inch	10/9/2009	NC	NC	513.14	29.6	< LOD	33.03
Area C 004 2 ft wall	10/9/2009	NC	NC	579.32	32.55	< LOD	36.03
Area C 005 2 ft wall	10/9/2009	NC	NC	2812.26	113.53	172.58	85.47

Notes:

Shaded values Value exceeds the Commercial Removal Action Level of 160 ppm for Arsenic and 2000 ppm for Lead

- < - Less than
- bx - Excavation Area B
- cp - Columbia Phosphate
- cx - Excavation Area C
- ft - feet
- LOD - Limit of Detection
- NA - Not applicable
- NC - Not collected
- ppm - parts per million
- RCRA - Resource Conservation and Recovery Act
- STD - Calibration Standard
- sur - surface
- XRF - X-Ray Fluorescence

APPENDIX C
LOGBOOK NOTES

Location Marietta, GA Date 07/27/09
 Project / Client Columbia Phosphate / EPA R4
Site walk prior to removal

- Weather: 86°F + partly cloudy @ 1045
 0615 START Stubbs departed Marietta, GA. RS
 0700 START Stubbs picked up ERS START von Oldenburg and moved to Columbia, SC. RS
 1045 START arrived at the site in Columbia, SC. RS
 1050 Tim Sloan of ER (Environmental Restoration) already on-site. EPA - Tim Sloan^{Neal} & Lynnette Sholar arrived on-site.
 1100 Conducted site walk in prep for the removal. Tim Sloan estimates 2,000-3,000 yards will be removed. Tim Sloan estimates 4 weeks (10 hrs/day + 6 days/week) to complete. Work projected to start on Sept. 29, move on Sept. 28. Trimble, XRF + datagram will be obtained from the EPA 62 warehouse. RS
 1200 Site walk complete.

Location _____ Date 07/27/09
 Project / Client _____

- 1210 START Stubbs + von Oldenburg used a measuring wheel to measure the berm along the west side of the site. RS
 ~ 300' long, 25' wide + 5' high.
 *Note: Lab analysis will be non-CLP per OSC-Sholar.
 1230 START off-site. Stopped for lunch. RS
 1300 START done with lunch and demobing to Marietta, GA.
 1700 START arrives back in Marietta, GA.

[Signature]
 07/27/09

Location Columbia SC Date 3-13-9
 Project / Client Columbian phosphate

- 13:30 onsite -
- OS - L. Sholar
- STAFF L. von OLDENBURG
- WEATHER 90's - Sunny
- purpose: collecting soil
- for TREATABILITY TEST
- INSTRUMENT NITON XLR
- GPS
- HITS 6700 to 11.3K Pb
- appears to be w/ slag WEATHER
- soil

Sample Collection pt

33.98744 *N

81.03629 *W

conc - 11 K for Pb

~~TEST 9~~ at 6" BGS - 9100 AS 1000

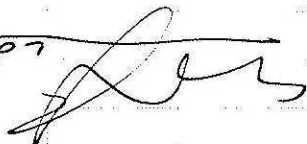
~~TEST PT~~

33.98736 *N

81.03649 *W

conc ~ 6700 for Pb

~~TEST PT~~



Location Columbia SC Date 3-13-9
 Project / Client Columbian phosphate

TEST

33.98685 *N

81.03627 *W

Pb - 1200

AS - 82

TEST

33.98697 *N

81.03631 *W

Pb - 1930

AS - ND

TEST 10 - Bucket - collected soil

Pb - 7600

AS - 700



Location OTIC -

Date 8-25-9

Project / Client Columbia phosphate

0900 TREATABILITY Study -

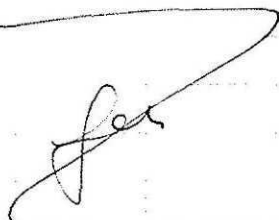
- Sample Prep -
- Collected HALF OF A 5 gallon BUCKET of SOIL FROM FIELD -
- XRF READING INSITU ~11.3K [PB]
AND 9100 K [PB]
- XRF READING (90 sec) IN BUCKET
~ 7600 [PB]

- BLENDED / MIXED BUCKET IN WAREHOUSE - By TURNING, ROTATING, TOSsing SOIL WITHIN BUCKET. (CLOSED LID BUCKET)

- XRF READING of SOIL IN BUCKET ON 8-25-9 -
- | | | | |
|------|---|-------|------|
| 8389 | ± | 233 | [PB] |
| 971 | ± | 179.8 | [AS] |

TEST 2

8838	±	242	[PB]
912.4	±	185	[AS]



Location OTIC

Date 8-25-9

Project / Client Columbia phosphate

TREATABILITY

- 09:15 -

PREP FREE FLOW - PRODUCT FOR TESTING -

per MANUFACTURERS REQUEST -

BLEND SHOULD BE

90% FF200 + 10% FF100FS

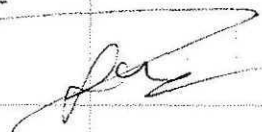
- BLENDED PRODUCT

45g	FF200
+	5g FF100FS
50g	Well mixed BLEND -

PREP Samples -

{	SOIL - = 100gram
	FREEFLOW Blend = 1.0g
	ADD 10% moisture By WT.
	Mix in 16 OZ glass sample jar w/ wooden spatula (new)

{	Mix 2 (5% BLEND)
	FREEFLOW BLEND 5.0g + 100g soil
	+ 10% By WT. WATER -
	Mix WELL -



Location OTIS

Date 8-25-9

Project / Client COLUMBIA phosphate

09:30 mix 3

$\left\{ \begin{array}{l} \text{SOIL} = 100 \text{ g} \\ \text{FF BLEND} = 10 \text{ g} \\ \text{H}_2\text{O} = 10\% \text{ (wt)} \end{array} \right.$

ADDITIONALLY A CONTROL sample
WAS COLLECTED INTO A 16 oz
pre cleaned, glass jar -

TOTAL Samples for LAB -

- 1) CP-TS-01 (1%)
- 2) CP-TS-05 (5%)
- 3) CP-TS-10 (10%)
- 4) CP-TS-CTRL (CONTROL)

CP = COLUMBIA phosphate

TS = TREATABILITY STUDY

CONTAINERS 16 oz PRE CLEANED

glass sampling JARS - w/
TEFLON LINED LIDS

JS

Marietta, GA

09/21/09

Project / Client

Chas RS Columbia Phosphate
Treatability with Enviroblend

1330 START Stubbs prepped 2
samples for TCLP analysis.

5% 1) Soil = 95g
Enviroblend (90/10) = 5g
H₂O = 10g

RS

10% 2) Soil = 90g
Enviroblend (90/10) = 10g
H₂O = 10g

RS

Total Samples for lab

- 1) CP-TS-EN-05 (5%)
- 2) CP-TS-EN-10 (10%)

RS

CP = Columbia Phosphate

TS = Treatability Study

EN = Enviroblend

Containers: 16 oz. pre cleaned
glass jars with teflon lined
lids.

JS
09/21/09

Location Marietta, GA

Date 09/28/09

Project / Client Columbia Phosphate

Mobilize

1030 START Stubbs + von Oldenburg departed the OTIE heading to the G2 Warehouse to pick up equipment. ——— RS

1115 START signed out a Trimble, XRF + a Data Ram from Charlie at the G2 Warehouse.

1130 START departed for Columbia, SC. ——— RS

1500 START arrived on-site meet with ER - Kevin Hite + Dave. ER had intended on installed a permanent fence around the site. After speaking with OSC - Skolar it was determined that a temporary fence will be utilized. ——— RS

1700 START + ER departed this site. ——— RS

* Latenote: Confirmed utility markouts.
R. Stubbs

Location Columbia, SC

Date 09/29/09

Project / Client Columbia Phosphate

Begin Removal

0700 Weather: 60°F + clear, a high of 79°F expected today. START + ER on-site setting up to begin operations. ER crew going over their health + safety. ——— RS

0830 ER cutting brush along berm. ——— RS

1130 Hertz delivered a Deere 2000C excavator.

12:41 - DATA Rm # -

BACKGROUND - READING -

NO EXCAVATION COMMENCED -

TRAIN IN BACKGROUND -

SAMPLE IN FIELD, SLIGHT WIND FROM NORTH - NW -

COR 5.6 $\mu\text{g}/\text{m}^3$

TWA 7.8 $\mu\text{g}/\text{m}^3$

12:53 - CALIBRATING XRF -

FROM G2 -

MODEL #, EPA ID # 0018

- CASE # 13865

Date 9-29-9

3:05- testing SURFACE SOIL in
ROADWAY w/ DIRECT READING
XRF

CP-ROADWAY -001

33.98717

[Pb] 166

81.03645

[As] 25.1

CP-ROADWAY -002

33.98710

[Pb] 129.2

81.03649

[As] ND

CP-ROADWAY -003

33.98699

[Pb] 636.4

81.03638

[As] 77.5

CP-ROADWAY -004

33.98692

[Pb] 141.2

81.03644

[As] 27.6

CP-ROADWAY -005

33.98681

[Pb] 1396

81.03638

[As] 127.6

CP ROADWAY -006

33.98671

[Pb] 271.2

81.03632

[As] 32.2

CP ROADWAY -007

33.98681

[Pb] 246

81.03639

[As] ND

Date 09/29/09 51

1430 National Fence on-site
to setup up temporary
fence. AS

1615 National Fence off site
after completing setting
up temporary fence.

1800 START EPA + ER leaving
site for the day.

09/29/09
Shuff

Location Columbia, SCDate 09/30/09Project / Client Columbia PhosphateSoil Removal

0700 Weather: 52°F and clear,
a high of 78°F expected.
ER (Environmental Restoration)
Dave Mang conducted tailgate
meeting. Heat stress & hand
communication when approaching
heavy equipment is critical.

* Latenote: At the direction
of OSC-Tim Neal only the
middle portion of the berm
is to be excavated. This is
the area of composite
sample CP-B34A-CP-B34E.
Excavation of berm was a
100 feet north of Catawba
Street and extended 100
feet north of that. First
pass scrapped down to grade.

0730 ER continued with excavating
the berm. RS

1100 Berm excavation complete.
ER starting to excavate
the larger area to the
southwest of the site
building.

Location _____

Date 09/30/09

Project / Client _____

1300 SC DHER personnel on-site:
Timothy Kadar, Jason Williams
and Chris Phillip. RS

1600 ER excavating the larger
area to the southwest of
the site building. RS

1800 START, EPA & ER off-site
for the day. RS

10/6/09

[Signature]

Location Columbia, SCDate 10/01/09Project / Client Columbia, SCSoil removal

0700 Weather: 55°F + clear, 81°F expected for a high today. ER conducted a tailgate meeting. RS

0730 ER - Dave Mang said the excavator operator will be scrapping the surface between the gravel drive and the excavation that was completed yesterday that is off the southwest corner of the site building

0745 START - Stubbs + van Oldenburg and EPA - Sholar conducted a site walk to check the temporary fence for any breaches. Fence appears to be secure. RS

0800 START logged the GPS coordinates off a ^{pvc} pipe that was discovered while excavating yesterday. RS

[Signature]

Location _____

Date 10/01/09

Project / Client _____

0930 Excavation Area B (which is the area off the southwest portion of the site building is complete.

0935 START Stubbs calibrating Niton XRF EPA case ^{RS} ID C06018. RS

Time: 40.9 seconds

Res: 254.2 RS

Calibrated to RCRA 8 standard. RS

[As] = 433.1 ± 29.8

[Pb] = 410.8 ± 32.2

1000 START Stubbs + van Oldenburg taking XRF readings and GPS coordinates in excavation B. RS

1300 START measured stock-piles. RS

A = $56' \times 10' \times 14' = 8775 \text{ ft}^3$ RS

B1 = $65' \times 7.5' \times 18' = 8775 \text{ ft}^3$

B2 = $75' \times 9' \times 12' = 8100 \text{ ft}^3$

C = $75' \times 10' \times 13' = 9750 \text{ ft}^3$

Soil Removal

1300 Stockpile A = 290 yards
 B1 = 325 yards
 B2 = 300 yards
 C = 361 yards
 1276 yards total
 1820 tons

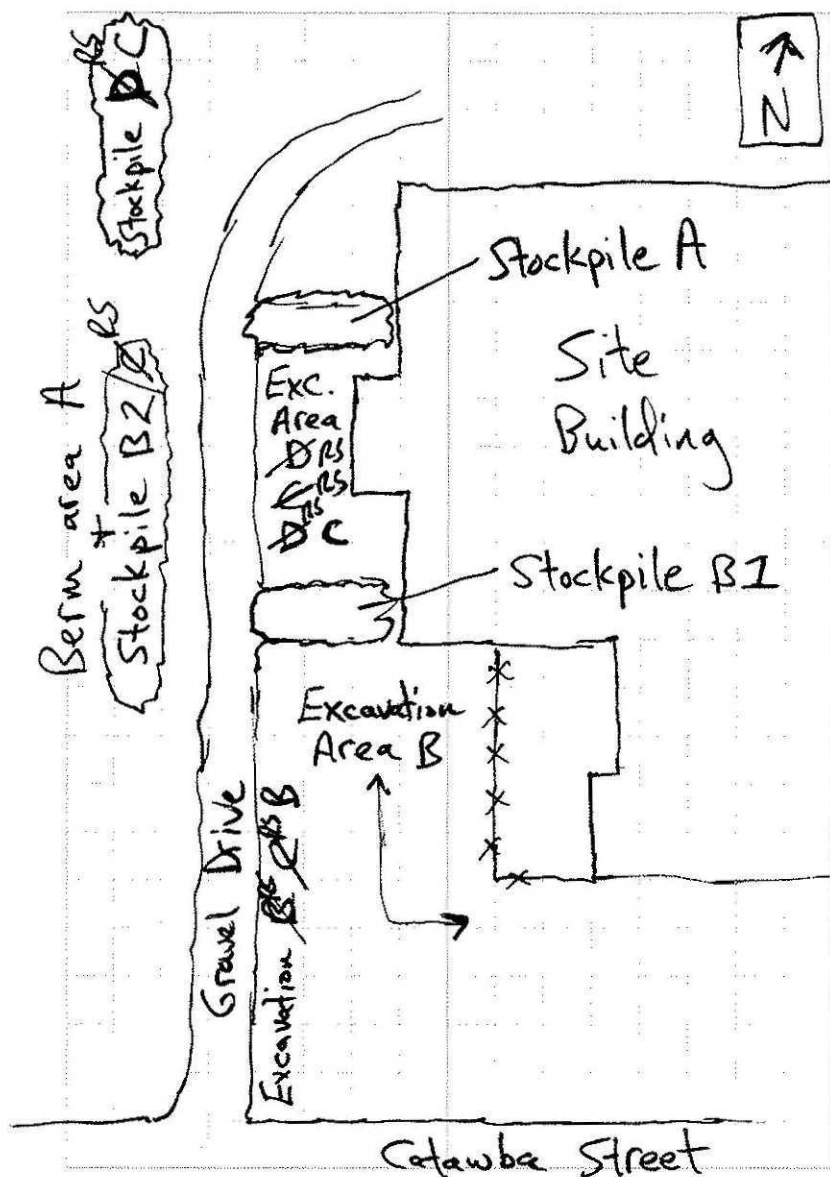
1500 START prepped to collect
 4 composite samples, one
 per stockpile to be sent
 off for TCLP analysis.

1530 START Stubbs collected
 a composite sample from
 Stockpile A (CP-SP-A).
 START von Oldenburg collected
 a composite sample from
 Stockpile B1 (CP-SP-B1).

1535 START von Oldenburg collected
 a composite sample from
 Stockpile B2 (CP-SP-B2).

1540 START von Oldenburg collected
 a composite sample from
 Stockpile C (CP-SP-C).

1545 START took XRF readings
 off the top off the jars as
 preliminary data.



Location Columbia, SC Date 10/01/09
 Project / Client Columbia Phosphate
Soil Removal

1700 START + EPA + ER off site
 for the day.

10/01/09

Location _____ Date 10/02/09
 Project / Client _____

0700 Weather: 58°F + cloudy,
 a high of 81°F expected
 ER conducted a tailgate
 meeting. RS

0730 ER excavator operator
 beginning to skim off
 one foot off the bank
 coming down to the
 gravel drive adjacent
 to excavation area B.

0930 START von Oldenburg
 collected composite sample
 CP-SP-D from Stockpile B2.
 Stockpile B2 is soil taken
 from the west portion of
 excavation area B near
 the gravel drive. RS

0950 At OSC-Sholar's direction
 no more soil will be
 removed near the building
 by the AC unit, this is
 excavation area C on the
 sketch. The magenta area
 of soil is covered by a foot
 of clay, so there is no direct contact.

Location Columbia Phosphate Date 10/02/09

Project / Client

Soil Removal

- 1030 ER installing fence along gravel drive, B5
 * Late note: Composite sample CP-SP-D was collected from Stockpile B2.
 1200 Excavation Areas A, B, & C are all complete. The gravel drive still needs to have the surface scraped.
 1300 START Stubbs & von Oldenburg demobed from site.
 1700 START arrived back at OTIE office in Marietta, GA.

TO: OTIE
 10/02/09

Location Columbia phosphate Date 10-5-9

Project / Client

- DEMOS FROM ATL TO SITE -
 - 15:30 - ON SITE -
 - WEATHER OVERCAST -
 - LAST 24 hrs (0.94 inches) precip. [WEATHER - NOAA - GCR]
 - Ground wet - some ponding
 - ON PHONE w/ LAB (AES)
 - EXACT RESULTS EMAIL By Spm
 - PLANNING ON SOIL REMOVAL
 - PENDING ON RESULTS
 - 17:00 RECEIVED RESULTS -
- | SOIL PILE | [PB] | [AS] | units |
|-----------|-------|------|-------|
| A | 0.375 | BRL | mg/L |
| B | 6.70 | BRL | |
| B2 | 11.6 | BRL | |
| C | 12.1 | BRL | |
- pile A PASSES (Below REPORTABLE LIMITS)
 - I LET BSC & ER KNOW INTERPRETATION
 - LAB - AES -

[Signature]

Columbia SC

Date 10-6-9

Columbia

0800: onsite

- WEATHER - Low 60's
OVERCAST - Expected High
~67°F

- 20% Chance of Rain for Rain
- REVIEWED ANALYTICAL
- TOLD ER ABOUT
ENVIRO BLIND VERSUS TSP
- ON FREE FROM
- CALCULATED 3 out of 4 piles
of soil FAILED TCLP for
LEAD -
- TOTAL volume to be TREATED
~ 900 yds³ OR
- ER called per a 3-DIG
per ENVIRO BLIND -
- Also priced out TSP -
- TSP ~ \$200/ton
Enviro Blind ~ \$500/ton
- small amt of Enviro Blind NEEDED
to knock down price.

if

Date 10-6-9

- ER - Arranged for Trucks to
Remove DILE A - ^(L) 12 TRUCKS
- ESTIMATED 12 TRUCKS
will be needed to Remove
Stack DILE A -
- LEAD C. 375 mg/L
- AS Below Reportable Limit

- 7:00 ON SITE -
- SCHEDULED - TRUCKS FOR PILE A REMOVAL AT 8 AM
 - 7:05 - WEATHER OVERCAST - EXPECT RAIN
 - 7:50 - EXCAVATOR HITS WATER LINE TO HYDRANT IN FRONT OF OFFICE (PIT -
 - CALLED WATER DEPT - NO ANSWER
 - CALLED 911 ACTIVATE FIRE DEPARTMENT -
 - 8:25 - PD ON SITE - CAN'T STOP WATER
 - WATER DEPARTMENT STARTS OFF WATER AT STREET
 - 9:00 - GRAVEL IS BROUGHT IN
 - TRUCKS ARE SITTING IN STREET WAITING TO GET LOADED
 - WATER DEPARTMENT IS IN STALLING A LONGER COLLAR ON CRACKS

- 9:40 - Loading pile A in TRUCKS
- SKES OPENING UP
 - 10:01 - 2ND TRUCK LOADING
 - 11:35 - RECENT 3 DUMP TRUCKS 4 ROCK ~\$500/TRUCK
 - BENT at 4 TRUCKS of SOIL
 - WAITING FOR TURN AROUND
 - 15:20 - 7 TRUCKS HAVE LEFT SITE OF SOIL
 - TRUCK HAVE A CAPACITY of 24.5 yards
 - TICKET LOADS
 - 21.49 TONS
 - 21.73 TONS
 - 20.46 TONS
 - 19.96 TONS
 - ESTIMATE LAST 3 TRUCKS
 - 22 yds -
 - RECALCULATES SOIL VOLUME -
 - ESTIMATE ~\$6
 - ACTUAL TRUCKS - USED FOR PILE A = 7 TRUCKS

Date 10-8-9
10-9-9

Project / Client _____

06:30 onsite -

weather →

- H: 84°F to 62°F

Expect BACKFILL ~ 7 AM

All analytical pass

- SUC, VEC, REUSE -

for BACKFILL & TOP SOIL

Expect ENVIRO BLEND AT 8 AM

0700 - Robin expected tomorrow

- STATES TERRA CON - or
(Tim) (Chris Bartley)

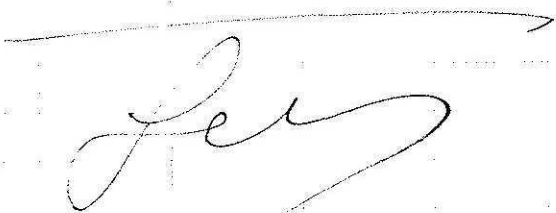
on SITE - THURS - SITE work

10 AM - 11 AM -

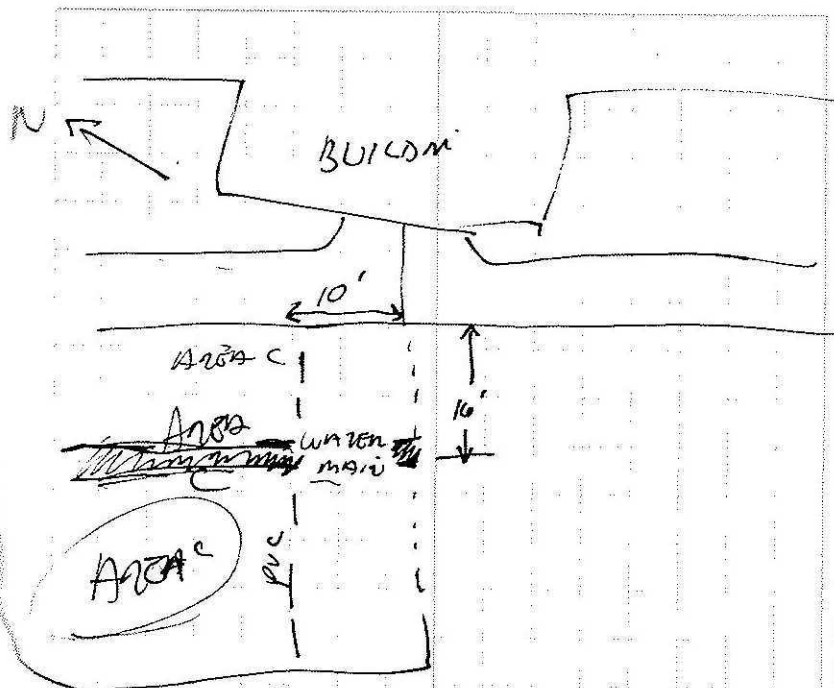
0700 - perimeter AREA GPS &

EXCAVATION AREAS -

- AREA B1	AVERAGE	DEPTH	2'
AREA B2			6" to 18"
A	↓		~2.5'
C-	↓		~2.5'



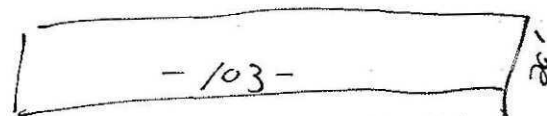
Project / Client _____



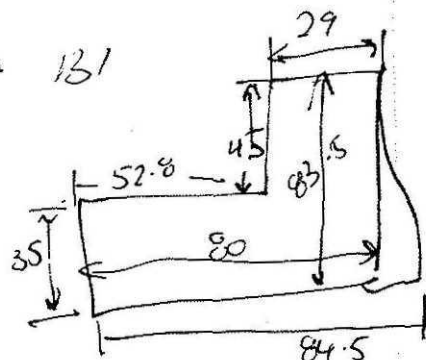
ROAD WAY

- SOIL MOIST - NOT WET -
- SANDY LOAM -
- "AREA" GPS EXCAVATION PITS
- WHEEL MEASURED PITS
- OVERCAST

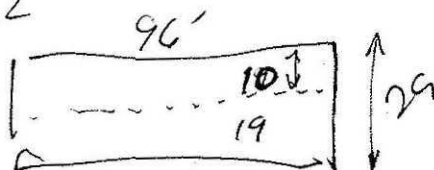
Area A

EXCAVATION
AREAS -

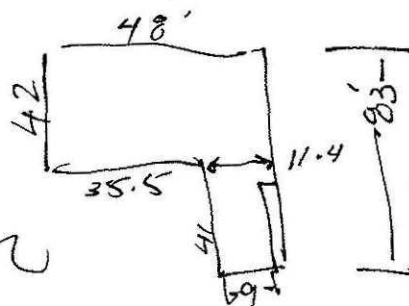
Area B1



Area B2



Area C



for

8:00 - CLEAN P.I. Being
Delivered on site

8:05 ENVIROBLEND on site

1 TRUCK 25 TONS

1 TRUCK 20 TONS -

5:30 - 5 TOTAL LOADS/DUMP TRUCKS
OF BACK FILL SOIL

HAVE BEEN DELIVERED

8:55 - 2ND ENVIROBLEND TRUCK on
SITE11:20 - EX still
SPREADING OR/COMPACTING
BACK FILL -

AM - MIXING ENVIROBLEND

5:37 - EX -
REPAIRING PVC PIPE in
PIT C -

15:45 - COLLECTORS -

Comp sample CP-SP-C

16:00 Comp sample CP-SP-B2

16:15 Comp sample CP-SP-B1

Crew - BACK FILLING & BLENDING -

for

Location Columbia, SC Date 10/14/09
 Project / Client Columbia Phosphate
Removal continued

- 0700 START Stubbs on site.
 ER personnel already on site. Four trucks lined up on the road ready for loading soil from stockpile to take to the landfill.
 ER-Dave Mang said 6 trucks will be rotating removing soil from the site. RS
 Weather: 65°F + light rain.
 100% chance of rain today.
- 0715 ER front loader operator spreading stone on the drive.
- 0730 ER starting to load a truck from Stockpile C.
- 0745 3rd truck being loaded at Stockpile C. RS
- 0755 4th truck being loaded at Stockpile C. RS
- 0805 4th truck leaving the site headed for the landfill.
 5th truck in place to be loaded at Stockpile C.

N. Stubbs

Location _____ Date 10/14/09
 Project / Client _____

- 0820 6th truck in and 5th truck out. Each truck averages 20-25 yards + 24.5 tons. RS
- 0830 6th truck leaving the site and heading to the landfill. RS
- 0910 7th truck on site and loading at Stockpile C.
- 0920 7th truck off site.
- 0935 ER-Dave Mang informed START-Stubbs & OSC-Scholar they are trying to get 3 more trucks to help speed up the process as the turn around time with the landfill in Elgin is slow. RS
- 0940 2 more trucks arrived on site. 8th truck being loaded. RS
- 0950 8th truck leaving the site and 9th in place to be loaded. *N. Stubbs*

Removal activities

1000 9th truck leaving the site and 10th in place to be loaded.

* Latenote: Results were received from AES last night.

Stockpile

[PB] [AC] units * All 3
B1 BRL BRL mg/L piles pass
B2 BRL BRL
C BRL BRL

1010 10th truck leaving the site. RS

1030 2 more trucks on site.
11th truck being loaded.

1050 11th truck leaving site and 12th backing in to load. RS

1058 12th truck leaving site.

1102 2 more trucks on site.
13th truck backing in to be loaded. RS

1113 13th truck leaving site.

11. Shutt

115 Stockpile C has been removed. 14th truck is backed on at Stockpile B2 to begin loading.

Weather: 61°F + light rain

1129 14th truck leaving site.

1137 15th truck arrived on site + ready to be loaded at Stockpile B2. ER wetting with fire hose as excavator is loading truck.

1150 15th truck is leaving site.

1202 16th truck on site and being loaded. RS

1207 2 more trucks waiting to be filled. RS

1215 16th truck off site and 17th truck being loaded.

1225 17th truck off site and 18th truck being loaded.

1235 18th truck leaving site.

1303 19th truck on site and being loaded. RS

1313 19th truck leaving site.

- 1317 20th truck is backed and being loaded from Stockpile B2. RS
- 1325 20th truck leaving the site.
- 1327 21st truck on site and being loaded. RS
- 1340 SCDHEC personnel on site and 21st truck leaving the site. RS
- 1350 ~~21st~~ RS 22nd truck on site and being loaded. RS
2 more trucks are waiting.
- 1405 22nd truck leaving site and 23rd truck on site being loaded. RS
- 1415 23rd truck leaving the site and the 24th truck on site being loaded.
- 1435 23rd truck off site.
- 1500 SCDHEC (Tim + Jason) leaving the site.
- 1530 24th truck on site and being loaded. Correction this is the 26th truck off the day.

- 1545 26th truck off site.
- 1600 ER covering up Stockpile B1 with poly sheeting.
- 1615 ER covering up the remaining portion of Stockpile B2. RS
- 1700 START, EPA + ER leaving site for the day. RS

10/14/09
[Signature]

Location Columbia, SC

Date 10/15/09

Project / Client Columbia Phosphate

Removal Activities

- 0700 All ER personnel, START-Stubbs on-site. 1st truck was already waiting to be loaded. ——— RS
- 0720 3 more trucks lined up waiting to be loaded. ——— RS
- 0728 1st truck leaving site and 2nd being loaded.
- 0730 Weather: 51°F + cloudy
80% chance of rain +
a high of 59°F expected.
- 0735 2nd truck leaving site.
Stockpile B2 has been
completely removed and
excavator beginning to
load the 3rd truck at
Stockpile B1. ——— RS
- 0750 2nd truck off site +
3rd truck being loaded.
- 0759 3rd truck off site +
4th being loaded.
- 0809 4th truck off site.
- 0811 One truck (L.A. Barrier + Son)
of gravel delivered on site.

Date 10/15/09

Project / Client

- 0820 START Stubbs downloaded
XRF + Trimble files +
data to laptop and then
copied over to the site
folder on the P drive of
the Atlanta server.
- 0830 1st truck load of topsoil
delivered. ——— RS
- 0832 2nd truck load of topsoil
delivered on-site. ——— RS
- 0835 3rd truck load of topsoil
on site. ——— RS
- 0837 2nd truck load of
gravel on site. ——— RS
- 0840 3rd truck load of gravel
on site. ——— RS
- 0910 ER noticed water bubbling
at ground surface where
the ~~utility~~ line RS fire
hydrant line had been
repaired. ——— RS
- 0919 5th truck on site and
being loaded at Stockpile
B1. *R. Stubbs*

Location Columbia Phosphate Date 10/15/09
 Project / Client Columbia, SC
Removal Activities

- 0933 5th truck leaving site
 for landfill and 6th truck
 on site being loaded.
- 0935 Weather: 52°F + cloudy
- 0944 6th truck off site headed
 for landfill. — RS
- 1012 7th truck on site +
 being loaded. — RS
- 1020 7th truck leaving site
- 1036 8th truck on site and
 being loaded. — RS
- 1048 8th truck leaving site.
- 1055 Skidster operator spreading
 rock on the drive. — RS
- 1059 9th truck on site and
 being loaded. — RS
- 1110 9th truck leaving the site.
- 1122 10th truck on site and
 being loaded. — RS
- 1138 10th truck leaving site
 and 11th truck on site
 and being loaded. Correction
 12th truck is on site
 and being loaded. *A. J. [initials]*

Location _____ Date 10/15/07
 Project / Client _____

- 1150 12th truck is leaving the
 site and headed to the
 Richland Landfill in
 Elgin, SC. — RS
- 1155 13th truck on site and
 being loaded. — RS
- 1205 13th truck leaving the
 site. — RS
- 1206 14th truck on site and
 being loaded. — RS
- ER - Kevin Hite on the
 phone with the city
 water department requesting
 the hydrant water line
 be repaired as water was
 noticed at ground surface
 earlier this morning. — RS
- * Latenote: 27 truckloads
 of soil were taken off
 site yesterday and 7
 truckloads were taken off
 site on 10/13/09.
- 1230 14th truck off site and 15th
 truck on site and being loaded.

- 1230 City water department on site. Water department personnel stated to ER-Dave Mang that they could repair the leaking hydrant line tomorrow. ER-Dave Mang said once the last Stockpile (B1) has been completely removed the excavator operator will excavate around the hydrant line so that it can be repaired tomorrow.
- 1239 15th truck off site and 16th truck on site and being loaded. ——— RS
- 1255 OSC-Skolar leaving site.
- 1257 16th truck off site and 17th truck on site being loaded. ——— RS
- 1309 17th truck loaded and leaving the site.
- 1320 18th truck on site and being loaded. A. Stubb

- 1345 ER rolling up poly sheeting that was under the stockpile and on the drive to dispose off with the soil in the last truck headed to the landfill.
- 1358 18th truck is loaded and off site. Stockpile B1 has been completely removed. All 4 Stockpiles (A, C, B2 + B1) have been completed. ——— RS
- 1445 ER spreading topsoil on the north end of excavation area B1.
- 1510 The temporary fence will be removed from the site next Thursday (10/22/09) per ER-Kevin Hite.
- 1616 START Stubbs confirmed with ER-Dave Mang that 52 truck loads of soil total were removed from the site. A. Stubb

Location Columbia, SC Date 10/15/69
 Project / Client Columbia Phosphate

- 1630 Weather: Rain shower and 60°F RS
 1645 ER Front loader operator spreading on the area in front of south loading dock. RS
 1715 ER wrapping up for today. RS
 1730 ER + START OFF Site for the day.

10/15/69

Location _____ Date 10/16/69
 Project / Client _____

Removal Activities

- 0700 START Stubbs + ERRS (ER) personnel on site. RS
 Weather: 56°F + cloudy, a high of 68°F expected.
 0715 Skidster operator spreading rock on the drive and excavator operator beginning to excavate around the leaking hydrant line to expose it for repair by the city water department.
 0825 City of Columbia Water Division personnel on site to repair the hydrant line.
 0827 One truckload of rock delivered on site. RS
 0829 2nd truckload of rock delivered on site. RS
 0830 Excavator operator opening up excavation more around the leaking hydrant line. Water Division setting up to dewater the excavation before replacing the line.

Location Columbia, SC Date 10/16/09
 Project / Client Columbia Phosphate

0835 2 more Water Division personnel on site (total of 5). Correction 3 more on site for a total of 6. One worker (Water Division) cutting out section of hydrant line. — RS

0840 One truckload of topsoil on site. — RS

0852 Water Division testing RS lifting an approximately 5 foot section of pipe that was cut out and preparing to replace with a new section. — RS

0855 2nd truck of topsoil on site. — RS

0903 Water Division lowering new section of pipe into excavation. — RS

0930 Water Division tightening couplings on new section of the line. — RS

N. Stueff

Location _____ Date 10/16/09
 Project / Client _____

0940 Water Division has completed replacing the leaking section of the hydrant water line, testing the line under pressure no visible leaks, and dewatering the excavation so that ERRS can backfill.

0955 Water Division personnel leaving site and ER replacing a section of a 4" PVC drain line before backfilling the excavation around the hydrant water line.

1000 ER excavator operator backfilling around replaced hydrant water line. — RS

1050 ER racking out the topsoil after backfilling was complete where the hydrant line was replaced. — RS

1140 ER front loader operator back blading rock in the drive.

Location Columbia, SC Date 10/16/09
 Project / Client Columbia Phosphate

- 1145 Weather: 57°F + overcast
 1200 ER + START broke for lunch. RS
 1230 ER resumed site activities. Currently spreading grass seed and grading the drive.
 1327 ER installing erosion control on the slope adjacent to the drive. RS
 1352 3rd truckload of topsoil on site. RS
 1425 4th truckload of topsoil on site. RS
 1500 ER front loader operator and skidsteer operator continue spreading and grading topsoil and rock on the drive. RS
 1630 ER spreading the remaining grass seed on topsoil and skidsteer operator is finishing spreading + grading rock. N. Stubbs

Location _____ Date 10/16/09

Project / Client _____

Closing out site + demobe

- 1700 ER is finishing spreading + grading rock on the drive. This is the final activity to be finished. The heavy equipment will be picked up on Monday and the temporary fence will be taken down on Thursday. START Stubbs departing the site and demobing back to Marietta, GA.

10/16/09
N. Stubbs

Location Marietta, GA

Date 10/16/09

Project / Client

Demob

2226 START Stubbs arrived
back in Marietta, GA.

10/16/09
Stubbs
RS

Location Marietta, GA

Date 10/17/09

Project / Client

Unload

1400 START Stubbs unloaded
rental vehicle at the
OTIE office in Marietta, GA.
1430 Unloaded completed. — RS

10/17/09
Stubbs
RS

APPENDIX D
PHOTOGRAPHIC LOG



Official Photograph No. 1

Site Name:	VCC Columbia Phosphate	Date:	September 29, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of the site prior to Removal Action.		



Official Photograph No. 2

Site Name:	VCC Columbia Phosphate	Date:	September 29, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of ERRS excavating the berm (Area A).		



Official Photograph No. 3

Site Name:	VCC Columbia Phosphate	Date:	September 29, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of completed berm excavation (Area A).		



Official Photograph No. 4

Site Name:	VCC Columbia Phosphate	Date:	September 30, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of Stockpile A.		



Official Photograph No. 5

Site Name:	VCC Columbia Phosphate	Date:	September 30, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of ERRS beginning excavating Area B1.		



Official Photograph No. 6

Site Name:	VCC Columbia Phosphate	Date:	September 30, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of ERRS excavating Area B1.		



Official Photograph No. 7

Site Name: VCC Columbia Phosphate
Location: Columbia, Richland County, SC
Photographer: Ryan Stubbs, START
Subject: View of Stockpile B1.

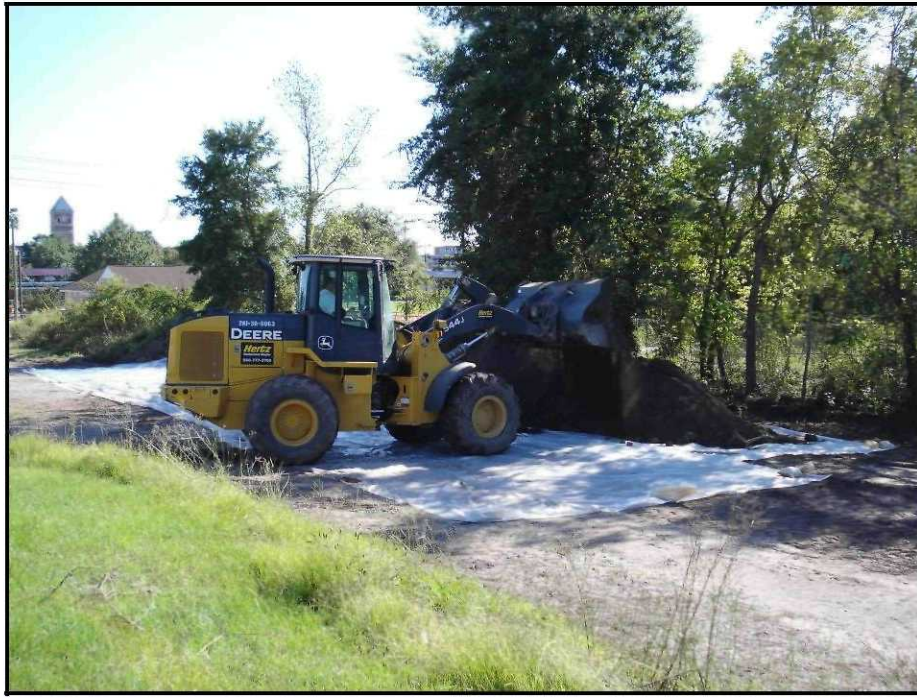
Date: September 30, 2009
TDD No: TNA-05-001-0085



Official Photograph No. 8

Site Name: VCC Columbia Phosphate
Location: Columbia, Richland County, SC
Photographer: Ryan Stubbs, START
Subject: View of ERRS excavating Area B2.

Date: October 2, 2009
TDD No: TNA-05-001-0085



Official Photograph No. 9

Site Name: VCC Columbia Phosphate
Location: Columbia, Richland County, SC
Photographer: Ryan Stubbs, START
Subject: View of Stockpile B2.

Date: September 30, 2009
TDD No: TNA-05-001-0085



Official Photograph No. 10

Site Name: VCC Columbia Phosphate
Location: Columbia, Richland County, SC
Photographer: Ryan Stubbs, START
Subject: View of disposal truck being loaded from Stockpile C.

Date: October 14, 2009
TDD No: TNA-05-001-0085



Official Photograph No. 11

Site Name:	VCC Columbia Phosphate	Date:	October 14, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of disposal truck being loaded from Stockpile B2.		



Official Photograph No. 12

Site Name:	VCC Columbia Phosphate	Date:	October 15, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of disposal truck being loaded from Stockpile B1.		



Official Photograph No. 13

Site Name:	VCC Columbia Phosphate	Date:	October 15, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of ERRS spreading and grading topsoil following backfill of Excavation Areas B1 and B2.		



Official Photograph No. 14

Site Name:	VCC Columbia Phosphate	Date:	October 16, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of Excavation Area C after the completion of grass seeding and installation of erosion control.		



Official Photograph No. 15

Site Name:	VCC Columbia Phosphate	Date:	October 16, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of Excavation Areas B1 and B2 after completion of Removal Action.		



Official Photograph No. 16

Site Name:	VCC Columbia Phosphate	Date:	October 16, 2009
Location:	Columbia, Richland County, SC	TDD No:	TNA-05-001-0085
Photographer:	Ryan Stubbs, START		
Subject:	View of erosion control installed on the slope of Excavation Areas B1 and B2 after completion of Removal Action.		

APPENDIX E
ANALYTICAL RESULTS

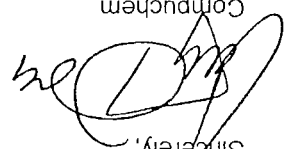
CompuChem
A Division Of
Liberty Analytical Corp.
9/10/2009



KEELY MEADOWS
OTIE SOLUTIONS-TN & A
1220 KENNESTONE CIRCLE, SUITE D
MARIETTA, GA 30066

Subject: Report of Data - Project: VCC COLUMBIA PHOSPHATE/SC
WorkOrder: 0908159
Attn: KEELY MEADOWS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.
Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

CompuChem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES 21

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical
 Client: OTIE SOLUTIONS-TN & A
 Project: VCC COLUMBIA PHOSPHATE/SC
 Work: 0908159
 Sdg:

Lab ID	Client ID	Matrix	Date Sampled	Date Received
0908159-01	CP-TS-01	Soil	08/25/2009 09:30	08/28/2009 09:10
0908159-02	CP-TS-05	Soil	08/25/2009 09:32	08/28/2009 09:10
0908159-03	CP-TS-10	Soil	08/25/2009 09:35	08/28/2009 09:10
0908159-04	CP-TS-CTR	Soil	08/25/2009 09:37	08/28/2009 09:10

SW846 - METALS

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM Contract: _____

Lab code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0908159

SOW No.: SW846

EPA Sample No.	Lab Sample ID.
CP-TS-01	0908159-01
CP-TS-05	0908159-02
CP-TS-10	0908159-03
CP-TS-CTR	0908159-04
CP-TS-CTRD	9090309-DUP1
CP-TS-CTRD	9090310-DUP1
CP-TS-CTRS	9090309-MS1
CP-TS-CTRS	9090310-MS1
CP-TS-CTRS	9090309-MSD1
CP-TS-CTRS	9090310-MSD1
TCLPBTLKAF	9090136-BLK1
TCLPBTLKAF	9090136-BLK2

Were ICP interelement corrections applied?

Yes/No YES

Were ICP background corrections applied?

Yes/No YES

If yes-were raw data generated before

YES

application of background corrections?

Yes/No NO

Comments: _____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: 2 Jente for Susan Bass Name: _____

Susan W Bass

Title: _____

Senior Chemist

Date: _____

9-10-79

COVER PAGE - IN

SW846 - 6010

SDG NARRATIVE
SDG # 0908159

The indicated Sample Delivery Group (SDG) consisting of four (4) samples was received into the laboratory information management system (LIMS) on August 28, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 5.9°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared following the TCLP leaching procedure and analyzed in accordance with SW846 methodology for the TCLP metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges and the samples were prepared and analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0908159-01 ID CP-TS-CTRS and CP-TS-CTRS were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0908159-04 ID CP-TS-CTRD was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times

the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

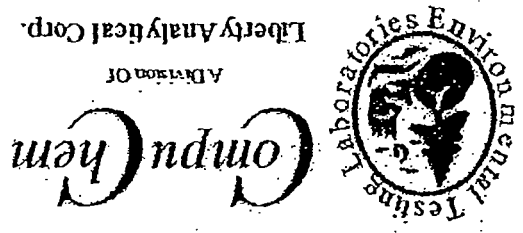
A five-fold serial dilution of sample, CCN = 0908159-04 ID CP-TS-CTRL was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentrations were inside control limits for the requested analytes except lead.

Control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution adjusted concentrations from the original values for all analyte concentrations greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAP standards unless otherwise stated in the SDG narrative or QA notice.

S. J. Bass
Susan W. Bass
Senior Chemist
September 10, 2009



DATA REPORTING QUALIFIERS FOR INORGANICS

On Form I, under the column labeled "C" for concentration qualifier and "Q" for quality, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each analyte.

The C (concentration) qualifiers used are:

U: This flag indicates the analyte was analyzed for but not detected. This reported value was obtained from a reading that was less than the Instrument Detection Limit (IDL). The IDL will be adjusted to reflect any dilution and, for soils, the percent moisture.

B: This flag indicates the analyte was analyzed for and the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Method Detection Limit (MDL).

The Q qualifiers used are:

E: This flag indicates an estimated value. This flag is used:
 L: When the serial dilution (a five fold dilution for CLP and a five fold dilution for SW-846 method 6010B) results are not within 10%. The analyte concentration must be sufficiently high (minimally a factor of 50X above the IDL in the original sample).

N: This flag indicates the sample spike recovery is outside of control limits.
 *: This flag is used for duplicate analysis when the sample and the sample duplicate results are not within control limits.

The extensions: D, S, SD, L, A, added to the end of the client ID represent as follows:

- D: matrix duplicate
- S: matrix spike
- SD: matrix spike duplicate
- L: serial dilution
- A: post digestion spike

Method Codes:

- P: ICP PLASMA
- CV: MERCURY COLD VAPOR AA
- CA: MIDI-DISTILLATION SPECTROPHOTOMETRIC
- MS: MASS SPECTROMETRY
- AS: SEMI-AUTOMATED SPECTROPHOTOMETRIC



**USEPA Contract Laboratory Program
Generic Chain of Custody**

Reference Case:

Client No:

R

Region: 4	Date Shipped: 8/27/2009	Chain of Custody Record	Sampler Signature: <i>Ryan Stubbs</i>
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	Airbill: 869452221213	1 <i>Ryan Stubbs</i> 08/27/09 1600	<i>H. Manning</i> 8-28-09 0910
CERCLIS ID:	Shipped to: Compu Chem Labs 501 Madison Avenue Cary NC 27513 (919) 379-4006	2	
Spill ID:		3	
Site Name/State: Columbia Phosphate/SC		4	
Project Leader: Stubbs, Ryan			
Action: Removal Action			
Sampling Co: OTIE			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
CP-TS-01	Surface Soil/ Stubbs, Ryan	M/G	TCLPM-01 (14)	824 (Ice Only) (1) <i>1602</i>	CP-TS-01	S: 8/25/2009 9:30	-
CP-TS-05	Surface Soil/ Stubbs, Ryan	M/G	TCLPM-01 (14)	825 (Ice Only) (1)	CP-TS-05	S: 8/25/2009 9:32	-
CP-TS-10	Surface Soil/ Stubbs, Ryan	M/G	TCLPM-01 (14)	826 (Ice Only) (1)	CP-TS-10	S: 8/25/2009 9:35	-
CP-TS-CTR	Surface Soil/ Stubbs, Ryan	M/G	TCLPM-01 (14)	827 (Ice Only) (1)	CP-TS-CTR	S: 8/25/2009 9:37	-

Rec'd in good condition

Use for MS/MSD -

0908159-01

-02

-03

-04

Shipment for Case Complete? <input type="checkbox"/>	Sample(s) to be used for laboratory QC: CP-TS-CTR	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: TCLPM-01 = TCLPM:EPA 1311/8010	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment lead? <input checked="" type="checkbox"/>

TR Number: **4-574662744-082709-0001**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

COMPUCHEM

0908159

WORK ORDER

Client: OTIE SOLUTIONS-TN & A	Project Manager: Cathy Dover	Project Number: VCC COLUMBIA PHOSPHATE/SC	Status: Batched
SDG:	CASE:		

Report To:

OTIE SOLUTIONS-TN & A

KEELY MEADOWS

1220 KENNESTONE CIRCLE, SUITE D

MARIETTA, GA 30066

Phone: 919-981-6444

Fax: 919-728-4401

Date Due: 09/10/2009 00:00 (13 day TAT)

Received By: Cathy Dover

Date Received: 08/28/2009 09:10

Logged In By: Cathy Dover

Date Logged In: 08/28/2009 12:49

J & B Flags?: YES	TICS:NO	Spike Level: FULL Spike	Deliverable: Style 3	EPD : 48) COMPUCHEM EXCEL
-------------------	---------	-------------------------	----------------------	---------------------------

USE 0908159-04 FOR QC*TCLP RCRA METALS

Analysis Due TAT Expires Received Comments

0908159-01 CP-TS-01 [Soil] Sampled 08/25/2009 09:30 Eastern

6010B METALS-TCLP

7470A Hg TCLP

TCLP

0908159-02 CP-TS-05 [Soil] Sampled 08/25/2009 09:32 Eastern

6010B METALS-TCLP

7470A Hg TCLP

TCLP

0908159-03 CP-TS-10 [Soil] Sampled 08/25/2009 09:35 Eastern

6010B METALS-TCLP

7470A Hg TCLP

TCLP

0908159-04 CP-TS-CTR [Soil] Sampled 08/25/2009 09:37 Eastern

USE FOR QC

6010B METALS-TCLP

7470A Hg TCLP

TCLP

--

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CP-TS-01

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRITY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water):

LEACHATE

Lab Sample ID: 0908159-01

Level (low/med):

LOW

Date Received: 8/28/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	22.9	B		P
7440-39-3	Barium	227	B		P
7440-43-9	Cadmium	10.7	B		P
7440-47-3	Chromium	2.3	B		P
7439-92-1	Lead	56400	E		P
7439-97-6	Mercury	0.27	B		CV
7782-49-2	Selenium	28.1	B		P
7440-22-4	Silver	0.62	U	N	P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts: P

Comments:

Form I - IN

SW846 - 0710

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CP-TS-05

Contract:

Lab Name: COMPUCHEM

SAS No.:

Lab Code: LIBRTY

Case No.:

SDG No.: 0908159

Lab Sample ID:

LEACHATE

0908159-02

Date Received:

LOW

8/28/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

ug/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	64.4	B		P
7440-39-3	Barium	175	B		P
7440-43-9	Cadmium	12.7	B		P
7440-47-3	Chromium	26.2	B		P
7439-92-1	Lead	26900	E		P
7439-97-6	Mercury	0.26	B		CV
7782-49-2	Selenium	30.8	B		P
7440-22-4	Silver	0.62	U	N	P

Color Before:

COLORLESS

Clarity Before:

CLEAR

Texture:

Color After:

COLORLESS

Clarity After:

CLEAR

Artifacts:

Comments:

Form I - IN

SW846 - 010

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GP-TS-10

Contract:

Lab Name: COMPUCHEM

Lab Code: LIBRITY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water):

LEACHATE

Lab Sample ID:

0908159-03

Level (low/med): LOW

Date Received:

8/28/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

ug/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	174	B		P
7440-39-3	Barium	165	B		P
7440-43-9	Cadmium	12.2	B		P
7440-47-3	Chromium	35.1	B		P
7439-92-1	Lead	34200	E		P
7439-97-6	Mercury	0.39	B		CV
7782-49-2	Selenium	30.7	B		P
7440-22-4	Silver	1.3	B	N	P

Color Before: BROWN

Clarity Before:

CLEAR

Texture:

Color After:

COLORLESS

Clarity After:

CLEAR

Artifacts:

Comments:

Form I - - IN

SW846-010

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CP-TS-CTR

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRITY

Case No.:

SAS No.:

SDG No.:

0908159

Matrix (soil/water):

LEACHATE

Lab Sample ID:

0908159-04

Level (low/med):

LOW

Date Received:

8/28/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	23.6	B		P
7440-39-3	Barium	467	B		P
7440-43-9	Cadmium	9.0	B		P
7440-47-3	Chromium	1.1	U		P
7439-92-1	Lead	67700	ED		P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	26.1	B		P
7440-22-4	Silver	0.62	U	N	P

Color Before:

COLORLESS

Clarity Before:

CLEAR

Texture:

Color After:

COLORLESS

Clarity After:

CLEAR

Artifacts:

Comments:

Form I - - IN

SW846-1010

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TCLPBIKAE

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water): LEACHATE

Lab Sample ID: 9090136-BIK1

Level (low/med): LOW

Date Received: 9/2/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	13.4	B		P
7440-39-3	Barium	27.4	B		P
7440-43-9	Cadmium	0.61	U		P
7440-47-3	Chromium	1.7	B		P
7439-92-1	Lead	5.0	B	E	P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	16.7	B		P
7440-22-4	Silver	0.62	U	N	P

Color Before: COLORLESS

Clarity Before:

CLEAR

Texture:

Color After: COLORLESS

Clarity After:

CLEAR

Artifacts:

Comments:

Form I - - IN

SW846-16p10

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TCLPBILKAF

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water): LEACHATE

Lab Sample ID: 9090136-BLK2

Level (low/med): LOW

Date Received: 9/2/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	10.4	B		P
7440-39-3	Barium	18.4	B		P
7440-43-9	Cadmium	0.61	U		P
7440-47-3	Chromium	1.4	B		P
7439-92-1	Lead	4.1	B	E	P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	13.7	B		P
7440-22-4	Silver	0.62	U	N	P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Artifacts:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

Form I - IN

SW846-1010

BLANKS

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.:

0908159

Preparation Blank Matrix (soil/water):

WATER

Preparation Blank Concentration Units (ug/L or mg/kg):

UG/L

Analyte	Initial Calib. Blank (ug/L)	1	2	3	Preparation Blank	M
Arsenic	2.5 U	2.5 U	-2.5 B	-2.6 B	-2.852 B	P
Barium	-0.8 B	-0.8 B	-0.8 B	-0.7 B	-0.899 B	P
Cadmium	0.6 U	0.6 U	0.6 U	0.6 U	0.610 U	P
Chromium	1.1 U	1.1 U	1.1 U	1.1 U	1.100 U	P
Lead	2.1 U	2.1 U	2.1 U	2.1 U	2.641 B	P
Mercury	0.100 U	0.100 U	-0.118 B			CV
Selenium	1.9 U	1.9 U	1.9 U	1.9 U	1.900 U	P
Silver	0.6 U	0.6 U	0.6 U	0.6 U	0.620 U	P

SW846 - METALS

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BLANKS

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.:

0908159

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg):

UG/L

Analyte	Initial Calib. Blank (ug/L)	1	2	3	Continuing Calibration Blank (ug/L)	Preparation Blank	M
Arsenic	2.5 U	2.5 U	2.5 U	2.5 U			P
Barium	-0.9 B	-0.5 B	0.2 U	0.2 U			P
Cadmium	0.6 U	0.9 B	0.8 B	0.8 B			P
Chromium	1.1 U	1.1 U	1.1 U	1.1 U			P
Lead	2.1 U	2.1 U	2.1 U	4.1 B			P
Mercury	-0.158 B	-0.129 B	-0.101 B	0.100 U	0.100 U	CV	P
Selenium	-2.0 B	1.9 U	1.9 U	1.9 U			P
Silver	0.6 U	0.6 U	0.6 U	0.6 U			P

SW846 - METALS

SA

SPIKE SAMPLE RECOVERY

SAMPLE NO.

CP-TS-CTRS

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRITY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water): LEACHATE

Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight):

ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	5824.6340		23.6071	5000.00	116.0		P
Barium	75 - 125	98796.1000	B	467.2936	100000.00	98.3		P
Cadmium	75 - 125	985.9322		9.0266	1000.00	97.7		P
Chromium	75 - 125	5230.4000		1.1000	5000.00	104.6		P
Lead		72096.6400		67702.2200	5000.00	87.9		P
Mercury	75 - 125	188.5000	B	2.5000	200.00	94.2	CV	
Selenium	75 - 125	1189.6830		26.1252	1000.00	116.4		P
Silver	75 - 125	1038.0200		0.6200	10000.00	10.4	N	P

Comments:

Form V (PART 1) - IN

SW846 - 60116

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DUPLICATES

SAMPLE NO.

CP-TS-CTRD

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water):

LEACHATE

Level (low/med):

LOW

% Solids for Duplicate:

0.0

% Solids for Sample:

0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

Analyte	Control Limit	Sample (S)	Duplicate (D)	RPD	Q	M
Arsenic		23.6071 B	22.0321 B	6.9		P
Barium		467.2936 B	453.1278 B	3.1		P
Cadmium		9.0266 B	8.7678 B	2.9		P
Chromium		1.1000 U	1.2340 B	200.0		P
Lead		67702.2200	66156.2050	2.3		P
Mercury		0.1000 U	0.1000 U			CV
Selenium		26.1252 B	26.2197 B	0.4		P
Silver		0.6200 U	0.6200 U			P

Form VI - IN

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LABORATORY CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: _____
 Lab code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0908159
 Solid LCS Source: _____
 Aqueous LCS Source: HP-625712

Analyte	Aqueous (ug/L)		Solid (mg/kg)	
	True	Found	True	Found
Arsenic	5000.0	4879.12	97.6	
Barium	100000.0	98170.50	98.2	
Cadmium	1000.0	970.10	97.0	
Chromium	5000.0	4942.90	98.9	
Lead	5000.0	4857.19	97.1	
Mercury	200.0	184.50	92.2	
Selenium	1000.0	907.10	90.7	
Silver	1000.0	977.68	97.8	

Form VII - IN

SW846 - 6018

ICP SERIAL DILUTIONS

SAMPLE NO.

CP-TS-CTRL

Lab Name: COMPUCHEM

Contract:

Lab Code: LIBRITY

Case No.:

SAS No.:

SDG No.: 0908159

Matrix (soil/water): WATER

Level (low/med):

LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	M
Arsenic	23.61 B	16.64 B	29.5	P	
Barium	467.29 B	463.31 B	0.9	P	
Cadmium	9.03 B	8.50 B	5.9	P	
Chromium	1.10 U	5.50 U		P	
Lead	64713.09	71263.50	10.1	E	P
Lead	67702.22	68971.23	1.9	P	
Mercury	0.10 U	0.50 U		CV	
Selenium	26.13 B	28.85 B	10.4	P	
Silver	0.62 U	3.10 U		P	

SW846 - METALS

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COMPUCHEM

Contract: _____

Lab Code: LIBRITY

Case No.: _____

SAS No.: _____

SDG No.: 0908159

ICP ID Number: P4

Date: 4/22/2009

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRQL (ug/L)	IDL (ug/L)	M
Arsenic	189.04		2500	2.5	P
Barium	493.41		50000	0.2	P
Cadmium	226.50		500.0	0.6	P
Chromium	267.72		2500	1.1	P
Lead	220.35		2500	2.1	P
Selenium	196.02		500	1.9	P
Silver	328.07		500	0.6	P

Comments: _____

Form X - - IN

SW846 - - 620

SW846 - METALS

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COMPUCHEM Contract: _____
 Lab Code: LIBRITY Case No.: _____
 ICP ID Number: _____
 Flame AA ID Number: V4
 Furnace AA ID Number: _____
 Date: 4/15/2009
 SAS No.: _____ SDG No.: 0908159

Analyte	Wave- length (nm)	Back- ground	CRQL (ug/L)	IDL (ug/L)	CV
Mercury	253.70		100.00	0.10	M

Comments:

Form X - - IN

SW846 - 6040

Analytical Environmental Services, Inc.**Date:** 23-Sep-09

CLIENT: Oneida Total Integrated Enterprises
Lab Order: 0909E97
Project: Columbia Phosphate/SC
Lab ID: 0909E97-001A

Client Sample ID: CP-TS-EN-05
Tag Number:
Collection Date: 9/21/2009 1:30:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	BatchID	DF	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	118863	1	9/23/2009 3:12:52 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	118867	1	9/23/2009 4:15:07 PM
Barium	3.19	0.500		mg/L	118867	1	9/23/2009 4:15:07 PM
Cadmium	BRL	0.0250		mg/L	118867	1	9/23/2009 4:15:07 PM
Chromium	BRL	0.0500		mg/L	118867	1	9/23/2009 4:15:07 PM
Lead	9.51	0.0500	*	mg/L	118867	1	9/23/2009 4:15:07 PM
Selenium	BRL	0.100		mg/L	118867	1	9/23/2009 4:15:07 PM
Silver	BRL	0.0250		mg/L	118867	1	9/23/2009 4:15:07 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	<	Less than Result value
	>	Greater than Result value	B	Analyte detected in the associated Method Blank
BRL		Below Reporting Limit	E	Estimated value above quantitation range
H		Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N		Analyte not NELAC certified	Rpt Lim	Reporting Limit
S		Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc.

Date: 23-Sep-09

CLIENT: Oneida Total Integrated Enterprises
Lab Order: 0909E97
Project: Columbia Phosphate/SC
Lab ID: 0909E97-002A

Client Sample ID: CP-TS-EN-10
Tag Number:
Collection Date: 9/21/2009 1:35:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	BatchID	DF	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	0.00556	0.00400		mg/L	118863	1	9/23/2009 3:14:48 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	118867	1	9/23/2009 4:25:23 PM
Barium	2.41	0.500		mg/L	118867	1	9/23/2009 4:25:23 PM
Cadmium	BRL	0.0250		mg/L	118867	1	9/23/2009 4:25:23 PM
Chromium	BRL	0.0500		mg/L	118867	1	9/23/2009 4:25:23 PM
Lead	2.21	0.0500		mg/L	118867	1	9/23/2009 4:25:23 PM
Selenium	BRL	0.100		mg/L	118867	1	9/23/2009 4:25:23 PM
Silver	BRL	0.0250		mg/L	118867	1	9/23/2009 4:25:23 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	<	Less than Result value
	>	Greater than Result value	B	Analyte detected in the associated Method Blank
BRL		Below Reporting Limit	E	Estimated value above quantitation range
H		Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N		Analyte not NELAC certified	Rpt Lim	Reporting Limit
S		Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc.**Date:** 05-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910126-001

Client Sample ID: CP-SP-A
Collection Date: 10/1/2009 3:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119399	1	10/5/2009 1:11 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119389	1	10/5/2009 11:00 AM
Barium	1.53	0.500		mg/L	119389	1	10/5/2009 11:00 AM
Cadmium	BRL	0.0250		mg/L	119389	1	10/5/2009 11:00 AM
Chromium	BRL	0.0500		mg/L	119389	1	10/5/2009 11:00 AM
Lead	0.375	0.0500		mg/L	119389	1	10/5/2009 11:00 AM
Selenium	BRL	0.100		mg/L	119389	1	10/5/2009 11:00 AM
Silver	BRL	0.0250		mg/L	119389	1	10/5/2009 11:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.**Date:** 05-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910126-002

Client Sample ID: CP-SP-B1
Collection Date: 10/1/2009 3:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119399	1	10/5/2009 1:19 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119389	1	10/5/2009 11:11 AM
Barium	1.39	0.500		mg/L	119389	1	10/5/2009 11:11 AM
Cadmium	BRL	0.0250		mg/L	119389	1	10/5/2009 11:11 AM
Chromium	BRL	0.0500		mg/L	119389	1	10/5/2009 11:11 AM
Lead	6.70	0.0500	*	mg/L	119389	1	10/5/2009 11:11 AM
Selenium	BRL	0.100		mg/L	119389	1	10/5/2009 11:11 AM
Silver	BRL	0.0250		mg/L	119389	1	10/5/2009 11:11 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 05-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910126-003

Client Sample ID: CP-SP-B2
Collection Date: 10/1/2009 3:35:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119399	1	10/5/2009 1:21 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119389	1	10/5/2009 11:15 AM
Barium	1.37	0.500		mg/L	119389	1	10/5/2009 11:15 AM
Cadmium	BRL	0.0250		mg/L	119389	1	10/5/2009 11:15 AM
Chromium	BRL	0.0500		mg/L	119389	1	10/5/2009 11:15 AM
Lead	11.6	0.0500	*	mg/L	119389	1	10/5/2009 11:15 AM
Selenium	BRL	0.100		mg/L	119389	1	10/5/2009 11:15 AM
Silver	BRL	0.0250		mg/L	119389	1	10/5/2009 11:15 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.**Date:** 05-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910126-004

Client Sample ID: CP-SP-C
Collection Date: 10/1/2009 3:40:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119399	1	10/5/2009 1:23 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119389	1	10/5/2009 11:18 AM
Barium	1.09	0.500		mg/L	119389	1	10/5/2009 11:18 AM
Cadmium	BRL	0.0250		mg/L	119389	1	10/5/2009 11:18 AM
Chromium	BRL	0.0500		mg/L	119389	1	10/5/2009 11:18 AM
Lead	12.1	0.0500	*	mg/L	119389	1	10/5/2009 11:18 AM
Selenium	BRL	0.100		mg/L	119389	1	10/5/2009 11:18 AM
Silver	BRL	0.0250		mg/L	119389	1	10/5/2009 11:18 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value



AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 06, 2009

Kevin Hite
Environmental Restoration, LLC
6940 Commercial Dr
Morrow, GA 30260

TEL: (770) 276-4305

FAX (636) 680-2595

RE: VCC Columbia Phosphate

Order No.: 0910291

Dear Kevin Hite:

Analytical Environmental Services, Inc. received 1 sample on 10/5/2009 9:50:00 AM for the analyses presented in the following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative. AES' certifications are as follows:

- South Carolina Certification number 98016002 for Clean Water Act, effective until 12/31/09.
- South Carolina Certification number 98016003 for Solid and Hazardous Waste, effective until 6/30/10.

These results relate only to the items tested. This report may only be reproduced in full and contains 7 total pages (including cover letter).

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Blair Stout
Project Manager

407



AES

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order:

0410291

Date: 10/2/9

Page 1 of

COMPANY: ENVIRONMENTAL RESTORATION		ADDRESS: 1666 FABICK DR FENTON MO 63024		ANALYSIS REQUESTED 		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers											
PHONE: 636 227 7477		FAX: 636 680 - 2550																	
SAMPLED BY: L. Von OLDENBURG		SIGNATURE: 																	
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)												REMARKS
		DATE	TIME																
1	Cp - SP - D	10/2/9	09:45		X	SO	X												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
RELINQUISHED BY:		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION										RECEIPT	
		Kenneth Hite 10/2/9				10/5/09		PROJECT NAME: VCC Columbia PHOSPHATE										Total # of Containers	
						9:50		PROJECT #: VS 464										Turnaround Time Request	
								SITE ADDRESS: 707 CATARAUGA ST SC COLUMBIA										<input type="radio"/> Standard 5 Business Days	
								SEND REPORT TO:										<input checked="" type="radio"/> 2 Business Day Rush	
								INVOICE TO: (IF DIFFERENT FROM ABOVE)										<input type="radio"/> Next Business Day Rush	
																		<input type="radio"/> Same Day Rush (auth req.)	
																		<input type="radio"/> Other _____	
SPECIAL INSTRUCTIONS/COMMENTS: K.Hite@ERLLC.com				SHIPMENT METHOD OUT / VIA: IN / VIA: CLIENT <input checked="" type="checkbox"/> FedEx UPS MAIL COURIER GREYHOUND OTHER _____				STATE PROGRAM (if any): E-mail? <input checked="" type="checkbox"/> N Fax? Y/N DATA PACKAGE: I II III IV											

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.
SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc.

Date: 06-Oct-09

CLIENT: Environmental Restoration, LLC
Lab Order: 0910291
Project: VCC Columbia Phosphate
Lab ID: 0910291-001A

Client Sample ID: CP-SP-D
Tag Number:
Collection Date: 10/2/2009 9:45:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	BatchID	DF	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119453	1	10/6/2009 3:25:44 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119467	1	10/6/2009 1:02:30 PM
Barium	1.36	0.500		mg/L	119467	1	10/6/2009 1:02:30 PM
Cadmium	BRL	0.0250		mg/L	119467	1	10/6/2009 1:02:30 PM
Chromium	BRL	0.0500		mg/L	119467	1	10/6/2009 1:02:30 PM
Lead	4.50	0.0500		mg/L	119467	1	10/6/2009 1:02:30 PM
Selenium	BRL	0.100		mg/L	119467	1	10/6/2009 1:02:30 PM
Silver	BRL	0.0250		mg/L	119467	1	10/6/2009 1:02:30 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	<	Less than Result value
	>	Greater than Result value	B	Analyte detected in the associated Method Blank
	BRL	Below Reporting Limit	E	Estimated value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
	N	Analyte not NELAC certified	Rpt Lim	Reporting Limit
	S	Spike Recovery outside limits due to matrix		

CLIENT: Environmental Restoration, LLC

Work Order: 0910291

Project: VCC Columbia Phosphate

ANALYTICAL QC SUMMARY REPORT

TestCode: MERCURY, TCLP SW1311/7470A

Sample ID: MB-119453	SampType: MBLK	Batch ID: 119453	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157080						
Client ID:	TestCode: MERCURY, TCLP	SW1311/7470A		Analysis Date: 10/6/2009	SeqNo: 3240420						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	BRL	0.00400	0	0	0	0	0	0	0		

Sample ID: LCS-119453	SampType: LCS	Batch ID: 119453	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157080						
Client ID:	TestCode: MERCURY, TCLP	SW1311/7470A		Analysis Date: 10/6/2009	SeqNo: 3240421						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.04244	0.00400	0.04	0.000479	105	80	120	0	0		

Sample ID: 0910291-001AMS	SampType: MS	Batch ID: 119453	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157080						
Client ID: CP-SP-D	TestCode: MERCURY, TCLP	SW1311/7470A		Analysis Date: 10/6/2009	SeqNo: 3240423						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.04131	0.00400	0.04	0.000395	102	80	120	0	0		

Sample ID: 0910291-001AMSD	SampType: MSD	Batch ID: 119453	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157080						
Client ID: CP-SP-D	TestCode: MERCURY, TCLP	SW1311/7470A		Analysis Date: 10/6/2009	SeqNo: 3240424						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.04118	0.00400	0.04	0.000395	102	80	120	0.04131	0.315	20	

Qualifiers:	<	Less than Result value	>	Greater than Result value	B	Analyte detected in the associated Method Blank
	BRL	Below Reporting Limit	E	Estimated value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

CLIENT: Environmental Restoration, LLC
Work Order: 0910291
Project: VCC Columbia Phosphate

ANALYTICAL QC SUMMARY REPORT

TestCode: ICP METALS, TCLP SW1311/6010C

Sample ID: MB-119467	SampType: MBLK	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID:	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239759						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	BRL	0.250	0	0	0	0	0	0	0		
Barium	BRL	0.500	0	0	0	0	0	0	0		
Cadmium	BRL	0.0250	0	0	0	0	0	0	0		
Chromium	BRL	0.0500	0	0	0	0	0	0	0		
Lead	BRL	0.0500	0	0	0	0	0	0	0		
Selenium	BRL	0.100	0	0	0	0	0	0	0		
Silver	BRL	0.0250	0	0	0	0	0	0	0		

Sample ID: MB-119467-2	SampType: MBLK	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID:	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239762						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	BRL	0.250	0	0	0	0	0	0	0		
Barium	BRL	0.500	0	0	0	0	0	0	0		
Cadmium	BRL	0.0250	0	0	0	0	0	0	0		
Chromium	BRL	0.0500	0	0	0	0	0	0	0		
Lead	BRL	0.0500	0	0	0	0	0	0	0		
Selenium	BRL	0.100	0	0	0	0	0	0	0		
Silver	BRL	0.0250	0	0	0	0	0	0	0		

Sample ID: LCS-119467	SampType: LCS	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID:	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239756						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.228	0.250	5	0	105	85	115	0	0		
Barium	4.909	0.500	5	0.01555	97.9	80	120	0	0		
Cadmium	4.997	0.0250	5	0	99.9	85	115	0	0		
Chromium	5.159	0.0500	5	0	103	85	115	0	0		

Qualifiers:	<	Less than Result value	>	Greater than Result value	B	Analyte detected in the associated Method Blank
	BRL	Below Reporting Limit	E	Estimated value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

CLIENT: Environmental Restoration, LLC
Work Order: 0910291
Project: VCC Columbia Phosphate

ANALYTICAL QC SUMMARY REPORT

TestCode: ICP METALS, TCLP SW1311/6010C

Sample ID: LCS-119467	SampType: LCS	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID:	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239756						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.875	0.0500	5	0	97.5	85	115	0	0		
Selenium	5.214	0.100	5	0	104	85	115	0	0		
Silver	0.4925	0.0250	0.5	0	98.5	85	115	0	0		

Sample ID: 0910291-001AMS	SampType: MS	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID: CP-SP-D	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239767						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.262	0.250	5	0	105	50	150	0	0		
Barium	6.216	0.500	5	1.362	97.1	50	150	0	0		
Cadmium	5.031	0.0250	5	0	101	50	150	0	0		
Chromium	5.113	0.0500	5	0.01255	102	50	150	0	0		
Lead	9.348	0.0500	5	4.502	96.9	50	150	0	0		
Selenium	5.255	0.100	5	0	105	50	150	0	0		
Silver	0.4943	0.0250	0.5	0	98.9	50	150	0	0		

Sample ID: 0910291-001AMSD	SampType: MSD	Batch ID: 119467	Units: mg/L	Prep Date: 10/6/2009	RunNo: 157055						
Client ID: CP-SP-D	TestCode: ICP METALS, TCLP	SW1311/6010C		Analysis Date: 10/6/2009	SeqNo: 3239770						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.245	0.250	5	0	105	50	150	5.262	0.315	30	
Barium	6.131	0.500	5	1.362	95.4	50	150	6.216	1.37	30	
Cadmium	5.029	0.0250	5	0	101	50	150	5.031	0.0457	30	
Chromium	5.149	0.0500	5	0.01255	103	50	150	5.113	0.707	30	
Lead	9.02	0.0500	5	4.502	90.4	50	150	9.348	3.56	30	
Selenium	5.254	0.100	5	0	105	50	150	5.255	0.0143	30	
Silver	0.4928	0.0250	0.5	0	98.6	50	150	0.4943	0.294	30	

Qualifiers: < Less than Result value BRL Below Reporting Limit J Estimated value detected below Reporting Limit Rpt Lim Reporting Limit	> Greater than Result value E Estimated value above quantitation range N Analyte not NELAC certified S Spike Recovery outside limits due to matrix	B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded R RPD outside limits due to matrix
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Analytical Environmental Services, Inc.

Date: 13-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910937-001

Client Sample ID: CP-SP-B1
Collection Date: 10/9/2009 3:45:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119791	1	10/13/2009 3:46 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119787	1	10/13/2009 3:53 PM
Barium	BRL	0.500		mg/L	119787	1	10/13/2009 3:53 PM
Cadmium	BRL	0.0250		mg/L	119787	1	10/13/2009 3:53 PM
Chromium	BRL	0.0500		mg/L	119787	1	10/13/2009 3:53 PM
Lead	BRL	0.0500		mg/L	119787	1	10/13/2009 3:53 PM
Selenium	BRL	0.100		mg/L	119787	1	10/13/2009 3:53 PM
Silver	BRL	0.0250		mg/L	119787	1	10/13/2009 3:53 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 13-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910937-002

Client Sample ID: CP-SP-B2
Collection Date: 10/9/2009 4:00:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119791	1	10/13/2009 3:48 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119787	1	10/13/2009 3:57 PM
Barium	BRL	0.500		mg/L	119787	1	10/13/2009 3:57 PM
Cadmium	BRL	0.0250		mg/L	119787	1	10/13/2009 3:57 PM
Chromium	BRL	0.0500		mg/L	119787	1	10/13/2009 3:57 PM
Lead	BRL	0.0500		mg/L	119787	1	10/13/2009 3:57 PM
Selenium	BRL	0.100		mg/L	119787	1	10/13/2009 3:57 PM
Silver	BRL	0.0250		mg/L	119787	1	10/13/2009 3:57 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 13-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910937-003

Client Sample ID: CP-SP-C
Collection Date: 10/9/2009 4:45:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
MERCURY, TCLP SW1311/7470A					(SW7470)		Analyst: MAW
Mercury	BRL	0.00400		mg/L	119791	1	10/13/2009 3:50 PM
ICP METALS, TCLP SW1311/6010C					(SW3010A)		Analyst: JY
Arsenic	BRL	0.250		mg/L	119787	1	10/13/2009 4:01 PM
Barium	BRL	0.500		mg/L	119787	1	10/13/2009 4:01 PM
Cadmium	BRL	0.0250		mg/L	119787	1	10/13/2009 4:01 PM
Chromium	BRL	0.0500		mg/L	119787	1	10/13/2009 4:01 PM
Lead	BRL	0.0500		mg/L	119787	1	10/13/2009 4:01 PM
Selenium	BRL	0.100		mg/L	119787	1	10/13/2009 4:01 PM
Silver	BRL	0.0250		mg/L	119787	1	10/13/2009 4:01 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-001

Client Sample ID: 0001-BCKFILL
Collection Date: 10/5/2009 12:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL SW6010C					(SW3050B)		Analyst: JY
Arsenic	BRL	5.32		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Barium	BRL	5.32		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Cadmium	BRL	2.66		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Chromium	BRL	2.66		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Lead	BRL	5.32		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Selenium	BRL	5.32		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
Silver	BRL	2.66		mg/Kg-dry	119474	1	10/7/2009 12:39 PM
TOTAL MERCURY SW7471A					(SW7471)		Analyst: MAW
Mercury	BRL	0.114		mg/Kg-dry	119455	1	10/6/2009 4:25 PM
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
1,1'-Biphenyl	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4,5-Trichlorophenol	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4,6-Trichlorophenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4-Dichlorophenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4-Dimethylphenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4-Dinitrophenol	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,4-Dinitrotoluene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2,6-Dinitrotoluene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Chloronaphthalene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Chlorophenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Methylnaphthalene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Methylphenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Nitroaniline	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
2-Nitrophenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
3,3'-Dichlorobenzidine	BRL	770		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
3-Nitroaniline	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4,6-Dinitro-2-methylphenol	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Bromophenyl phenyl ether	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Chloro-3-methylphenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Chloroaniline	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Chlorophenyl phenyl ether	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Methylphenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Nitroaniline	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
4-Nitrophenol	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Acenaphthene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Acenaphthylene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Acetophenone	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Anthracene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Atrazine	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-001

Client Sample ID: 0001-BCKFILL
Collection Date: 10/5/2009 12:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
Benz(a)anthracene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Benzaldehyde	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Benzo(a)pyrene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Benzo(b)fluoranthene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Benzo(g,h,i)perylene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Benzo(k)fluoranthene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Bis(2-chloroethoxy)methane	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Bis(2-chloroethyl)ether	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Bis(2-chloroisopropyl)ether	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Bis(2-ethylhexyl)phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Butyl benzyl phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Caprolactam	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Carbazole	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Chrysene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Dibenz(a,h)anthracene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Dibenzofuran	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Diethyl phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Dimethyl phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Di-n-butyl phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Di-n-octyl phthalate	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Fluoranthene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Fluorene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Hexachlorobenzene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Hexachlorobutadiene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Hexachlorocyclopentadiene	BRL	760		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Hexachloroethane	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Indeno(1,2,3-cd)pyrene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Isophorone	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Naphthalene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Nitrobenzene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
N-Nitrosodi-n-propylamine	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
N-Nitrosodiphenylamine	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Pentachlorophenol	BRL	2000		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Phenanthrene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Phenol	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Pyrene	BRL	380		ug/Kg-dry	119457	1	10/7/2009 2:16 PM
Surr: 2,4,6-Tribromophenol	114	48.6-120		%REC	119457	1	10/7/2009 2:16 PM
Surr: 2-Fluorobiphenyl	74.0	49.2-120		%REC	119457	1	10/7/2009 2:16 PM
Surr: 2-Fluorophenol	74.0	35.5-120		%REC	119457	1	10/7/2009 2:16 PM
Surr: 4-Terphenyl-d14	81.7	51.8-120		%REC	119457	1	10/7/2009 2:16 PM

Qualifiers: * Value exceeds Maximum Contaminant Level
BRL Below Reporting Limit
H Holding times for preparation or analysis exceeded
N Analyte not NELAC certified
B Analyte detected in the associated Method Blank
> Greater than Result value

E Estimated (Value above quantitation range)
S Spike Recovery outside limits due to matrix
Narr See Case Narrative
NC Not Confirmed
< Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-001

Client Sample ID: 0001-BCKFILL
Collection Date: 10/5/2009 12:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
Surr: Nitrobenzene-d5	64.8	40.4-120		%REC	119457	1	10/7/2009 2:16 PM
Surr: Phenol-d5	85.0	41.3-120		%REC	119457	1	10/7/2009 2:16 PM
TCL VOLATILE ORGANICS SW8260B					(SW5035)		Analyst: JE
1,1,1-Trichloroethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,1,2,2-Tetrachloroethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,1,2-Trichloroethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,1-Dichloroethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,1-Dichloroethene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2,4-Trichlorobenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2-Dibromo-3-chloropropane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2-Dibromoethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2-Dichlorobenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2-Dichloroethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,2-Dichloropropane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,3-Dichlorobenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
1,4-Dichlorobenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
2-Butanone	BRL	61		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
2-Hexanone	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
4-Methyl-2-pentanone	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Acetone	BRL	120		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Benzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Bromodichloromethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Bromoform	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Bromomethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Carbon disulfide	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Carbon tetrachloride	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Chlorobenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Chloroethane	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Chloroform	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Chloromethane	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
cis-1,2-Dichloroethene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
cis-1,3-Dichloropropene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Cyclohexane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Dibromochloromethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Dichlorodifluoromethane	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Ethylbenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Freon-113	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Isopropylbenzene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
m,p-Xylene	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM

Qualifiers:

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- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-001

Client Sample ID: 0001-BCKFILL
Collection Date: 10/5/2009 12:30:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL VOLATILE ORGANICS SW8260B					(SW5035)		Analyst: JE
Methyl acetate	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Methyl tert-butyl ether	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Methylcyclohexane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Methylene chloride	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
o-Xylene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Styrene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Tetrachloroethene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Toluene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
trans-1,2-Dichloroethene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
trans-1,3-Dichloropropene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Trichloroethene	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Trichlorofluoromethane	BRL	6.1		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Vinyl chloride	BRL	12		ug/Kg-dry	119552	1	10/7/2009 2:51 AM
Surr: 4-Bromofluorobenzene	96.6	53.1-130		%REC	119552	1	10/7/2009 2:51 AM
Surr: Dibromofluoromethane	103	61.4-159		%REC	119552	1	10/7/2009 2:51 AM
Surr: Toluene-d8	98.3	69.9-123		%REC	119552	1	10/7/2009 2:51 AM
PERCENT MOISTURE D2216							Analyst: AZS
Percent Moisture	13.2	0		wt%		1	10/6/2009 5:00 PM

Qualifiers:

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- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-002

Client Sample ID: 0002-TPSOIL
Collection Date: 10/5/2009 12:40:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL SW6010C					(SW3050B)		Analyst: JY
Arsenic	BRL	5.12		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Barium	8.77	5.12		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Cadmium	BRL	2.56		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Chromium	3.82	2.56		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Lead	BRL	5.12		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Selenium	BRL	5.12		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
Silver	BRL	2.56		mg/Kg-dry	119474	1	10/7/2009 12:42 PM
TOTAL MERCURY SW7471A					(SW7471)		Analyst: MAW
Mercury	BRL	0.110		mg/Kg-dry	119455	1	10/6/2009 4:27 PM
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
1,1'-Biphenyl	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4,5-Trichlorophenol	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4,6-Trichlorophenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4-Dichlorophenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4-Dimethylphenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4-Dinitrophenol	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,4-Dinitrotoluene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2,6-Dinitrotoluene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Chloronaphthalene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Chlorophenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Methylnaphthalene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Methylphenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Nitroaniline	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
2-Nitrophenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
3,3'-Dichlorobenzidine	BRL	730		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
3-Nitroaniline	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4,6-Dinitro-2-methylphenol	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Bromophenyl phenyl ether	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Chloro-3-methylphenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Chloroaniline	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Chlorophenyl phenyl ether	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Methylphenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Nitroaniline	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
4-Nitrophenol	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Acenaphthene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Acenaphthylene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Acetophenone	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Anthracene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Atrazine	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-002

Client Sample ID: 0002-TPSOIL
Collection Date: 10/5/2009 12:40:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
Benz(a)anthracene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Benzaldehyde	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Benzo(a)pyrene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Benzo(b)fluoranthene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Benzo(g,h,i)perylene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Benzo(k)fluoranthene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Bis(2-chloroethoxy)methane	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Bis(2-chloroethyl)ether	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Bis(2-chloroisopropyl)ether	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Bis(2-ethylhexyl)phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Butyl benzyl phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Caprolactam	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Carbazole	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Chrysene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Dibenz(a,h)anthracene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Dibenzofuran	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Diethyl phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Dimethyl phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Di-n-butyl phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Di-n-octyl phthalate	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Fluoranthene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Fluorene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Hexachlorobenzene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Hexachlorobutadiene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Hexachlorocyclopentadiene	BRL	720		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Hexachloroethane	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Indeno(1,2,3-cd)pyrene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Isophorone	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Naphthalene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Nitrobenzene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
N-Nitrosodi-n-propylamine	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
N-Nitrosodiphenylamine	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Pentachlorophenol	BRL	1900		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Phenanthrene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Phenol	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Pyrene	BRL	360		ug/Kg-dry	119457	1	10/7/2009 2:44 PM
Surr: 2,4,6-Tribromophenol	109	48.6-120		%REC	119457	1	10/7/2009 2:44 PM
Surr: 2-Fluorobiphenyl	79.3	49.2-120		%REC	119457	1	10/7/2009 2:44 PM
Surr: 2-Fluorophenol	78.3	35.5-120		%REC	119457	1	10/7/2009 2:44 PM
Surr: 4-Terphenyl-d14	74.7	51.8-120		%REC	119457	1	10/7/2009 2:44 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-002

Client Sample ID: 0002-TPSOIL
Collection Date: 10/5/2009 12:40:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL-SEMIVOLATILE ORGANICS SW8270D					(SW3550C)		Analyst: YH
Surr: Nitrobenzene-d5	68.8	40.4-120		%REC	119457	1	10/7/2009 2:44 PM
Surr: Phenol-d5	87.1	41.3-120		%REC	119457	1	10/7/2009 2:44 PM
TCL VOLATILE ORGANICS SW8260B					(SW5035)		Analyst: JE
1,1,1-Trichloroethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,1,2,2-Tetrachloroethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,1,2-Trichloroethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,1-Dichloroethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,1-Dichloroethene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2,4-Trichlorobenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2-Dibromo-3-chloropropane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2-Dibromoethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2-Dichlorobenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2-Dichloroethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,2-Dichloropropane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,3-Dichlorobenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
1,4-Dichlorobenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
2-Butanone	BRL	65		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
2-Hexanone	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
4-Methyl-2-pentanone	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Acetone	BRL	130		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Benzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Bromodichloromethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Bromoform	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Bromomethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Carbon disulfide	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Carbon tetrachloride	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Chlorobenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Chloroethane	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Chloroform	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Chloromethane	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
cis-1,2-Dichloroethene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
cis-1,3-Dichloropropene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Cyclohexane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Dibromochloromethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Dichlorodifluoromethane	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Ethylbenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Freon-113	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Isopropylbenzene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
m,p-Xylene	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Date: 07-Oct-09

CLIENT: Environmental Restoration, LLC
Project: VCC Columbia Phosphate
Lab ID: 0910442-002

Client Sample ID: 0002-TPSOIL
Collection Date: 10/5/2009 12:40:00 PM
Matrix: SOIL

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TCL VOLATILE ORGANICS SW8260B					(SW5035)		Analyst: JE
Methyl acetate	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Methyl tert-butyl ether	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Methylcyclohexane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Methylene chloride	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
o-Xylene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Styrene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Tetrachloroethene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Toluene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
trans-1,2-Dichloroethene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
trans-1,3-Dichloropropene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Trichloroethene	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Trichlorofluoromethane	BRL	6.5		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Vinyl chloride	BRL	13		ug/Kg-dry	119552	1	10/7/2009 2:26 AM
Surr: 4-Bromofluorobenzene	77.5	53.1-130		%REC	119552	1	10/7/2009 2:26 AM
Surr: Dibromofluoromethane	98.1	61.4-159		%REC	119552	1	10/7/2009 2:26 AM
Surr: Toluene-d8	93.9	69.9-123		%REC	119552	1	10/7/2009 2:26 AM
PERCENT MOISTURE D2216							Analyst: AZS
Percent Moisture	8.92	0		wt%		1	10/6/2009 5:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- BRL Below Reporting Limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated Method Blank
- > Greater than Result value

- E Estimated (Value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See Case Narrative
- NC Not Confirmed
- < Less than Result value