



Submitted to:  
Loveland Products, Inc.  
Billings, Montana

Submitted by:  
AECOM  
Billings, Montana  
December 2012

# Surface Impoundment Excavation Completion Report

Loveland Products, Inc.  
Billings, Montana



Submitted to:  
Loveland Products, Inc.  
Billings, Montana

Submitted by:  
AECOM  
Billings, Montana  
December 2012

# Surface Impoundment Excavation Completion Report

Loveland Products, Inc.  
Billings, Montana

A handwritten signature in black ink, appearing to read 'Shelly Young', positioned above a horizontal line.

Prepared By  
Shelly Young, Project Manager

A handwritten signature in black ink, appearing to read 'Dennis Alexander', positioned above a horizontal line.

Technically Reviewed By  
Dennis Alexander, P.G., Senior Project/Program Manager

## List of Acronyms

2,4-D	2,4-dichlorophenoxyacetic acid
AECOM	AECOM Technical Services, Inc.
AOC	Areas of concern
ARM	Administrative Rule of Montana
bgs	below ground surface
CAMU	Corrective Action Management Unit
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COC	Chain-of-Custody
CPS	Crop Production Services, Inc.
CY	Cubic yard
DCQAP	Data Collection Quality Assurance Plan
DEQ	Department of Environmental Quality
Facility	Loveland Products, Inc. Billings, Montana, Facility
GPS	Global Positioning System
Haz Tech	Haz Tech Drilling, Inc.
HSWA	Hazardous and Solid Waste Amendments
LPI	Loveland Products, Inc.
MDEQ	Montana Department of Environmental Quality
mg/kg	milligrams per kilogram
OCS	Ops Contracting Services, LLC
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goals
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Level
SI	Surface Impoundment
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
USEI	US Ecology Idaho
USEPA	United States Environmental Protection Agency
Work Plan	Excavation Work Plan

# Contents

<b>1.0</b>	<b>Introduction</b> .....	<b>1-1</b>
1.1	Purpose .....	1-1
1.2	Background .....	1-1
1.2.1	Surface Impoundment Regulatory History .....	1-1
1.2.2	Surface Impoundment Closure.....	1-2
1.3	Document Organization .....	1-2
<b>2.0</b>	<b>Surface Impoundment Removal Activities</b> .....	<b>2-1</b>
2.1	Surface Impoundment Removal Approval and Authorization .....	2-1
2.1.1	CAMU Approval .....	2-1
2.1.2	Temporary Authorization .....	2-2
2.2	Description of Surface Impoundment Removal Activities.....	2-2
2.2.1	Monitoring Well Abandonment .....	2-2
2.2.2	Asphalt Removal .....	2-2
2.2.3	Security.....	2-3
2.2.4	Pond A Excavation and Sample Collection.....	2-3
2.2.5	Pond B Excavation and Sample Collection.....	2-3
2.2.6	Pond C Excavation and Sample Collection .....	2-4
2.2.7	Stockpiles .....	2-4
2.2.8	Decontamination Procedures and Excavation Derived Waste .....	2-5
2.3	Summary of 2,4-D Results.....	2-5
2.4	SWMU 6 Sample Collection .....	2-6
2.5	Backfilling.....	2-7
2.6	Work Plan Deviations.....	2-7
2.7	Summary of Effectiveness .....	2-7
2.8	Certification of Completion and Permit Modification .....	2-7
<b>3.0</b>	<b>References</b> .....	<b>3-1</b>

## List of Appendices

Appendix A - Field Notes

Appendix B - Well Logs

Appendix C - Representative Photos

Appendix D - Laboratory Reports

Appendix E - Data Validation Reports

## List of Tables

Table 1        Stockpile Analytical Results

Table 2        Excavation Confirmation Analytical Results

Table 3        SWMU 6 Analytical Results

## List of Figures

Figure 1       Site Layout

Figure 2       Limits of Excavation

Figure 3       2,4-D Excavation Confirmation Sample Locations

Figure 4       SWMU Sample Locations

## 1.0 Introduction

This Surface Impoundment Excavation Completion Report (Completion Report) has been prepared by AECOM Technical Services, Inc. (AECOM) on behalf of Crop Production Services, Inc. (CPS) and Loveland Products, Inc. (LPI), formerly Transbas. This completion report summarizes activities conducted at the LPI facility located in Billings, Montana (Facility) per the Montana Department of Environmental Quality (MDEQ) approved July 31, 2012 Surface Impoundment (SI) Excavation Work Plan (Work Plan) (LPI 2012; MDEQ 2012a).

In 2010, LPI requested that MDEQ make a determination that waste from closed SIs at the Facility was corrective action management unit (CAMU) eligible and thus would allow it to be disposed at an off-site permitted hazardous waste landfill (LPI 2010a). The scope represented Facility-wide corrective action to protect human health and/or the environment from Facility releases of hazardous waste or hazardous constituents that may be present in solid waste management units (SWMUs), areas of concern (AOCs), or waste in units is required by the Montana Hazardous Waste Permit, Permit No. MTHWP-04-01 (Permit), for the Facility.

Following MDEQ approval of the waste as CAMU-eligible wastes (MDEQ 2011), and through a temporary authorization granted by MDEQ in a July 10, 2012 letter (MDEQ 2012b), CPS and LPI proceeded with excavation of the wastes from the SI and disposal of the waste at an off-site Resource Conservation and Recovery Act (RCRA) permitted hazardous waste landfill per 40 Code of Federal Regulations (CFR) Section §264.555(a). As the SI is currently in a post-closure care period, excavation of the SI and removal of the waste constitutes a Class 3 permit modification due to shortening of the post-closure period.

### 1.1 Purpose

This report presents a description of activities, sample locations, and analytical results implemented per the Work Plan (LPI 2012). The remedial goal of the excavation was to remove waste material with 2,4-dichlorophenoxyacetic acid (2,4-D) concentrations above the risk-based action level of 7,700 milligrams per kilogram (mg/kg) industrial Regional Screening Level (RSL).

### 1.2 Background

#### 1.2.1 Surface Impoundment Regulatory History

The Permit-Regulated Unit, located north of the process building (**Figure 1**), consisted of three RCRA regulated evaporation ponds (SIs or ponds). The ponds were constructed to hold wastewater containing 2,4-D generated during herbicide production. The Facility discontinued use of the evaporation ponds in November 1985 and closed them per an approved RCRA closure plan in early 1986. For regulatory purposes, the three SIs were documented in Transbas' Permit as one regulated unit. Transbas received a letter dated November 20, 1987 from Montana Department of Health and Environmental Sciences (currently MDEQ) approving Transbas' Closure Certificate and confirming a draft post-closure permit would be put into place (Montana Department of Health and Environmental Sciences 1987). On December 18, 1992, the post-closure permit was finalized. The SI integrity has been monitored in compliance with post-closure requirements and remains intact. As of July 2012, the regulated unit had 25 years of post-closure care and monitoring.

As part of the Hazardous and Solid Waste Amendments (HSWA) of RCRA, facilities applying for a RCRA hazardous waste permit were subject to a RCRA Facility Assessment to identify SWMUs and AOCs. SWMUs and AOCs are, or are suspected to be, the source of a release to the environment. On August 28, 1990, as part of the RCRA Facility Assessment, a visual site inspection was conducted at Transbas by the United States Environmental Protection Agency (USEPA). On January 14, 1993, the USEPA issued Transbas a final HSWA permit stipulating the Facility perform a RCRA Facility Investigation (RFI). The SI was identified as SWMU 6 in the RFI. At the conclusion of the RFI Phase I, analytical results indicated SWMU 6 had no

groundwater impacts from the SI, post-closure groundwater monitoring would continue, and no further investigation action was necessary.

## **1.2.2 Surface Impoundment Closure**

The SI ponds were closed in the 1980s under separate work plans. Thorough documentation of the closure details is no longer available. The sections below outline the planned closure activities; however, actual activities may have deviated from the 1983 and 1985 work plans.

### **1.2.2.1 Pond A Closure**

Closure of the southeast pond (Pond A) took place one year prior to closure of the southwest pond (Pond B) and north pond (Pond C). Closure of the southeast pond was completed under the separate work plan titled Partial Closure Plan for Transbas, Inc.: A Surface Impoundment In Which Wastes Remain At Closure (Transbas 1983), starting in 1983. Remediation began after all free liquids were evaporated from the pond and 155 cubic yards (CY) of sludge containing 2,4-D remained. The work plan indicated sludge would be stabilized with quick lime and fly ash, keeping the original liner intact. After the sludge was solidified, the impoundment would be filled with pit run gravel and compacted to the liner manufacturer's specifications. Once the gravel was in place, a 12-inch layer of sand would be installed over the gravel and compacted. A 0.040-inch-thick high-density polyethylene liner would then be set over the sand, another 12-inch layer of sand placed over the liner, followed by an 18-inch layer of pit run gravel. Once the final grade was established, a 3-inch layer of 0.75-inch road mix gravel would be installed. Yellowstone County records document, in the Declaration of Restrictions, 4 tons of U240 dry weight remain in the southeast pond.

### **1.2.2.2 Ponds B and C Closure**

The southwest (Pond B) and north ponds (Pond C) were remediated under one closure work plan, Closure Plan For Transbas, Inc.: A Surface Impoundment In Which Wastes Remain At Closure, dated September 25, 1985 (Transbas 1985). After all of the free liquids were removed, 285 CY of sludge remained in the bottom of the southwest pond and 115 CY of sludge remained in the bottom of the north pond. The work plan indicated the sludge would be stabilized in place using lime and fly ash with the existing liners in place. Once the ponds solidified, clean dirt and compacted gravel would be later added. The area would be graded to achieve proper drainage and then topped with 6 inches of sand. A 40-millimeter-thick, high-density polyethylene liner would be placed on top of the sand and then layered with another 6 inches of sand. Twelve inches of compact gravel would be placed on top to establish final grade for proper drainage. Finally, 3 inches of road mix gravel would be added. Yellowstone County records document, in the Declaration of Restrictions, 5 tons of U240 dry weight remain in the southwest impoundment and 3 tons of U240 remain in the north impoundment.

On September 16, 1991, the Montana Hazardous Waste Permit application was amended for paving the regulated unit. A 3-inch-thick asphaltic concrete mix was installed over the SI to improve protection of the unit and provide a stable location for container storage.

## **1.3 Document Organization**

Chapter 1.0 of this Completion Report presents an introduction. A summary of the excavation activities of the SIs and analytical results is presented in Chapter 2.0. Chapter 3.0 presents the references.

## 2.0 Surface Impoundment Removal Activities

This chapter details the activities completed prior to and during the removal of the SIs. The activities conducted per the approved work plan met the requirements of the permit for the Facility. In addition, the Data Collection Quality Assurance Plan (DCQAP) included in the approved Phase II RFI Work Plan was followed to ensure the data obtained during the confirmation sampling activities were appropriate and were collected properly. Project Standard Operating Procedures (SOPs) included in the approved Phase II RFI Work Plan were followed when implementing the activities in this Work Plan. Project SOPs underwent review prior to implementing the project and were revised or supplemented if a procedural change was needed and as additional work elements were added. Compliance with the permit, DCQAP, and SOPs ensured compliance with 40 CFR §264.

### 2.1 Surface Impoundment Removal Approval and Authorization

#### 2.1.1 CAMU Approval

On June 2, 2010, LPI requested that MDEQ make a determination that waste from the closed SIs was CAMU-eligible (LPI 2010a). MDEQ determined that waste remaining in the closed SI met the definition of both remediation waste provided in 40 CFR 260.10 and CAMU-eligible waste provided in 40 CFR 264.552 (a)(1) in an October 20, 2010 letter (MDEQ 2010). The previous treatment of sludge with quick lime and fly ash was the most cost-effective treatment at the time of closure and was conducted in order to immobilize the hazardous waste present in the SI, thus minimizing both the short and long term threat posed by the waste. Therefore, treatment standards and methods required in 40 CFR 264.552(4)(e)(iv) do not need to be met prior to placement of the waste in an off-site CAMU. However, also in accordance with 40 CFR 264.555(a)(2)(iii), LPI was required to provide substantial evidence through sampling to show that the treatment was effective in reducing the toxicity and mobility of the principal hazardous constituents in the waste.

Sampling of the SI was conducted per the MDEQ approved Sampling and Analysis Plan dated December 7, 2010 (LPI 2010b). A trenching/potholing methodology was used to extract solidified sludge from the closed SI. One trench was excavated in each of the three ponds (designated Pond A, Pond B, and Pond C) to an approximate length of 15 feet and a width of approximately 5 feet. CPS and LPI collected samples of the solidified sludge to show treatment of the sludge with quick lime and fly ash was effective in reducing the toxicity and mobility of the principal hazardous constituents of the waste. When compared to the untreated waste water sludge results, the decrease of 2,4-D concentrations in the solidified sludge was an average 83.60 percent and the decrease of 2,4-D toxicity characteristic leaching procedure concentrations were an average of 56.77 percent in the solidified sludge. This reduction met the requirements of reduced toxicity and mobility of the principal hazardous constituents. Results from the initial sampling were reported in the Surface Impoundment Sampling Completion Report (AECOM 2011).

MDEQ issued a letter August 31, 2011 to LPI declaring the Department's intent to approve the waste as CAMU eligible (MDEQ 2011). A public notification on its determination that the waste was CAMU-eligible and approved for off-site disposal was issued by MDEQ. The public comment period on the determination extended from October 4, 2011 through October 21, 2011; no public comments were received. After completion of the public comment period, MDEQ approved the material as CAMU-eligible with placement in an off-site permitted hazardous waste landfill, consistent with the requirements for CAMU approval at 40 CFR 264.552(h).

On February 2, 2012, the State of Idaho Department of Environmental Quality (DEQ) approved placement of the LPI CAMU-eligible waste into the US Ecology Idaho (USEI) Site B facility in Grand View, Idaho (DEQ 2012). MDEQ was provided with written acceptance on February 29, 2012 from USEI, the receiving RCRA hazardous waste facility, authorizing receipt of CAMU eligible waste (USEI 2012).

### 2.1.2 Temporary Authorization

AECOM, on behalf of LPI, requested a temporary authorization from MDEQ on June 6, 2012 to allow excavation work to begin while permit modification procedures were being conducted (AECOM 2012). A notice to all persons on the Facility mailing list (which was provided by MDEQ) and to appropriate units of state and local governments was sent to inform stakeholders of the request for temporary authorization for excavation of the SIs. The temporary authorization provided LPI with the necessary field time to excavate and ship the waste to an off-site permitted hazardous waste landfill during the 2012 field and construction season. Delaying the removal activities may have increased the likelihood of precipitation issues in open excavations, increasing the potential for exposure of hazardous waste and/or hazardous constituents to humans and/or the environment.

On July 10, 2012, MDEQ granted LPI temporary authorization to begin excavation work while the permit modification procedures were being conducted, in accordance with 40 CFR 270.42(e) as incorporated by Administrative Rule of Montana (ARM) 17.53.1201 (MDEQ 2012b). In the temporary authorization, MDEQ determined that the activities proposed by LPI were in compliance with the applicable hazardous waste management standards in ARM Title 17, Chapter 53 and that temporary authorization was necessary to facilitate timely implementation of corrective action activities and improved management of hazardous waste. The temporary authorization required that the Surface Impoundment Work Plan be approved by MDEQ prior to initiation of excavation activities.

## 2.2 Description of Surface Impoundment Removal Activities

The construction activities were performed by Ops Contracting Services, LLC (OCS) of Nashville, Tennessee, under the supervision of CPS and LPI personnel. AECOM was on-site for sample collection. The goal of the excavation effort was to remove solidified sludge (waste), which was left in place during closure of the SIs, containing 2,4-D concentrations above the industrial RSL of 7,700 mg/kg. AECOM and OCS field notes are provided in **Appendix A** and document the activities. Descriptions of the activities are presented in the following sections.

### 2.2.1 Monitoring Well Abandonment

Monitoring Well M-19, located between the ponds, was abandoned by Haz Tech Drilling, Inc. of Billings, Montana (Haz Tech) on August 8, 2012 in accordance with the requirements outlined in ARM Title 36, Chapter 21, Sub-Chapter 8, Monitoring Well Construction Standards. The well abandonment log is included in **Appendix B**. Photo 1 in **Appendix C** shows the location following well abandonment. Remaining monitoring wells were protected with flagging and/or barricades during excavation activities. No well pads were affected during asphalt removal.

Monitoring Well OBS-4 was damaged by the excavator on September 28, 2012. As it appeared the damage was limited to the surface completion of the well, an effort was made by OCS to make repairs. However, during routine gauging activities, Facility personnel discovered there was subsurface damage requiring the well to be replaced. OBS-4 was abandoned by Haz Tech and replacement Well OBS-4R was installed on October 26, 2012. The new well was developed on October 29, 2012 and was surveyed by Pinpoint Land Surveys, PLLC of Billings, Montana, on November 1, 2012. The abandonment log for OBS-4 and the well log for replacement Well OBS-4R are included in **Appendix B**.

### 2.2.2 Asphalt Removal

In preparation for excavation activities, the asphalt was removed from the area over the estimated locations of Ponds A, B, and C (see Photo 2 in **Appendix C**). The location of three ponds was identified as accurately as possible based on historic information. On August 13, 2012, the asphalt was cut along the estimated boundaries prior to removal to provide a straight edge to the asphalt that would be left in place. Asphalt removal was conducted August 13 through 15, 2012. Asphalt removed from the SI area was stockpiled in the northwest corner of the Facility and has been used as road base at the Facility.

### 2.2.3 Security

In compliance with permit MTHWP-04-01, Module IV, Condition IV.D., LPI Billings limited traffic within 20 feet surrounding the excavation area by posting orange construction fencing around the perimeter. A photo showing the fencing is included in **Appendix C**. Signs communicating only authorized personnel are allowed to enter the barricaded zone were posted from all approaches to the impoundment and were legible from a distance of 25 feet of the sampling area.

Only authorized personnel were allowed to enter the site. This included CPS, LPI, MDEQ, USEPA, and contractors. All personnel and visitors at the site were required to sign in and out on a site record log sheet. Visitors were not permitted to enter active work areas unless safety trained and authorized. These measures were in addition to normal security measures described in the Contingency Plan for the Facility.

### 2.2.4 Pond A Excavation and Sample Collection

Excavation of Pond A commenced August 22, 2012. Overburden soil was excavated in 2-foot lifts from each pond and stockpiled in windrows. Overburden removal continued in lifts until the waste layer was encountered. The upper liner was encountered at approximately 2 to 3 feet below ground surface (bgs) and waste at approximately 5 feet bgs. The total depth of the excavation was approximately 8 feet bgs. Following removal of the top liner, the width from east to west was approximately 46 feet and the length from north to south was approximately 91 feet. **Figure 2** shows the estimated location of the ponds as well as the final excavation boundaries. A total of 2,500 tons of overburden soil and solidified sludge were excavated from Pond A.

Following confirmation sampling, as the results were below the 2,4-D industrial RSL of 7,700 mg/kg, Pond A was backfilled with overburden material that had been excavated from Ponds A and B. Backfilling of Pond A was completed on September 7, 2012.

Once initial excavation of each pond was complete based on field observations, confirmation soil samples were collected on August 31, 2012 from the sidewalls and bottom of the excavation to confirm the lateral and vertical extent of excavation was adequate to remove impacted soil exceeding the 2,4-D industrial RSL of 7,700 mg/kg. The samples were analyzed for 2,4-D by USEPA Method 8151 that was modified by the laboratory to achieve a 24-hour turnaround on sample results. The modified Method 8151 was submitted to MDEQ in the approved Work Plan as Appendix VII.

Each sidewall sample consisted of three grab samples. The floor was divided into four quadrants. One composite sample was collected from each quadrant and consisted of three grab samples. Soil was collected from the sidewalls by scraping the sidewall at the approximate level of the removed waste with a stainless steel spoon. Grab samples from the floor also were collected using a stainless steel spoon. Each grab sample was placed in a disposable plastic bag and was mixed prior to being collected as a composite sample in the sample jar. Sampling tools were dry decontaminated between sampling locations. The sample number for each location was written on a pin flag placed at each grab location. The pin flags remained in the ground until sample results were received from the laboratory. Sample locations also were recorded using a hand-held global positioning system (GPS) device. If a sample exceeded the action level, the perimeter of the excavation was extended at the sampled locations based on visual observation in the field by personnel and another confirmation sample was collected. Composite samples from each location were sent to Energy Laboratories in Billings, Montana, and were analyzed for 2,4-D by a modified Method 8151. A duplicate sample was collected from the southwest floor quadrant. All sidewall and floor sample results were below the 2,4-D industrial RSL of 7,700 mg/kg and no additional excavation was required.

### 2.2.5 Pond B Excavation and Sample Collection

Excavation of Pond B commenced August 15, 2012. The upper liner was encountered at approximately 2 feet bgs. The top of the waste layer varied from approximately 4 to 7.5 feet bgs. The total depth of the excavation was approximately 12 feet bgs. Following removal of the upper liner, the width from east to

west was between 70 and 80 feet and the length from north to south approximately 120 feet. A total of 8,070 tons of overburden soil and solidified sludge were excavated from Pond B. Following confirmation sampling, Pond B was backfilled with 950 tons of overburden material and 7,120 tons of imported material.

Confirmation samples were collected on September 25, 2012 from each sidewall and from the floor of the excavation to confirm the lateral and vertical extent of excavation was adequate to remove impacted soil exceeding the 2,4-D industrial RSL of 7,700 mg/kg. Sidewall and floor samples were collected and marked in a manner similar to the process described for Pond A. One composite sample was collected from each sidewall and a total of four floor samples were collected. A duplicate sample was collected from the southwest floor quadrant. All sidewall and floor sample results were below 7,700 mg/kg. However, the preliminary result from the northeast floor quadrant was 2,720 mg/kg and, as all other results were less than 1,000 mg/kg, a decision was made to remove additional soil and resample the quadrant. The resample 2,4-D result was 123 mg/kg.

### **2.2.6 Pond C Excavation and Sample Collection**

Prior to proceeding with excavation of Pond C, six test pits were dug to determine the depth to the waste layer and to estimate the volume of waste within the pond. An air knife and vacuum truck were then used to locate the bottom liner in order to estimate the volume of waste present in Pond C. Cuttings from the vacuum truck were emptied onto visqueen at the edge of the waste in Pond B to allow for sample collection of the waste material. One sample was collected for each test pit and was analyzed for 2,4-D by a modified Method 8151.

Excavation commenced September 27, 2012. The upper liner was encountered at approximately 2 feet bgs and waste from approximately 2 to 5 feet bgs. The total depth of the excavation was approximately 10 feet bgs. Following removal of the upper liner, the width from north to south was approximately 100 feet and the length from east to west 200 feet. A total of 8,000 tons of overburden soil and solidified sludge were excavated from Pond C. Following confirmation sampling, Pond C was backfilled with 1,000 tons of overburden material and 7,000 tons of imported material. Backfilling of Pond C was completed on October 31, 2012.

Confirmation samples were collected on October 23 and 24, 2012, from each sidewall and from the floor of the excavation, to confirm the lateral and vertical extent of excavation was adequate to remove impacted soil exceeding the 2,4-D industrial RSL of 7,700 mg/kg. Two composite samples were collected from each the north and south sidewalls. One composite sample was collected from the east sidewalls and one from the west sidewall. The floor of the excavation was divided into 8 quadrants. A total of six sidewall and eight floor composite samples were collected. Duplicate samples were collected from the center southeast floor quadrant and from the eastern end of the northern sidewall. All sidewall and floor sample results were below 7,700 mg/kg with the exception of the center northwest floor quadrant. Additional soil was removed on October 25, 2012 from the center northwest quadrant (preliminary 2,4-D results were 15,800 mg/kg and final results were 9,280 mg/kg). Additional soil was also removed from the center northeast quadrant (preliminary 2,4-D results were 8,830 mg/kg and final results were 6,560 mg/kg). Both quadrants were resampled results were 185 mg/kg (center northwest quadrant) and 364 mg/kg (center northeast quadrant).

### **2.2.7 Stockpiles**

Overburden soil was stockpiled separately in windrows for each 2-foot lift. Stockpiles were located on top of ponds not actively being excavated at the time or in an area of the Facility located east of Pond C. Soil was placed on visqueen and the stockpiles were covered to prevent generation of dust and runoff in the case of storm events.

The stockpiles were divided into sections based on the volume of each lift removed; four grab samples were collected from a quadrant in each section and composited. Each grab sample location was marked, labeled with a pin flag, and GPS coordinates were recorded. The number of samples collected per lift was determined as follows:

- 1 composite per 2-foot lift less than 1,000 CY;
- 2 composites per 2-foot lift between 1,000-2,000 CY; and
- 3 composites per 2-foot lift greater than 2,000 CY.

The soil removed from each lift was not always stockpiled in uniform windrows. Sampling personnel evaluated the stockpiles against the total volume removed from each lift to determine how to divide the stockpiles into the necessary number of sections, or samples, required for each lift. Confirmation samples were analyzed for 2,4-D by a modified Method 8151. Results less than the 2,4-D industrial RSL 7,700 mg/kg indicated the soil could be used to backfill the ponds following excavation. Any results over 7,700 mg/kg would indicate the need for additional sampling or for disposal of the soil at an off-site facility as hazardous waste. No stockpile 2,4-D results exceeded 7,700 mg/kg. Analytical results from the stockpiles are presented in **Table 1**.

### 2.2.8 Decontamination Procedures and Excavation Derived Waste

Waste generated during excavation activities, consisted of the solidified sludge and impacted soil, personal protective equipment (PPE), material used for decontamination and sampling, and liner removed from the ponds during excavation.

The waste was excavated and primarily live loaded into trucks or railcars for disposal. Toward the end of excavation activities, waste was stockpiled on visqueen until it could be loaded and transported off-site to allow for backfilling and grading of the completed excavations. The bottom liner, since it was in contact with the waste, was removed from the excavation and transferred with the waste to USEI Idaho Site B Facility near Grand View, Idaho (USEPA ID No. 1DD073114654). A total of 5,924 tons of waste was removed from Ponds A and B (combined) and shipped off site. A total of 6,820 tons of waste was removed from Pond C and shipped off site for disposal. Shipment of the waste off site began August 20, 2012. The final shipment of waste departed the Facility on November 12, 2012.

Personnel donned PPE prior to entering the excavation or stockpiles where waste was exposed. Prior to leaving the excavation or stockpile area, PPE was either dry decontaminated to ensure waste was visually removed or the PPE was removed and disposed of. Each vehicle or piece of equipment that contacted impacted material in the project area was dry decontaminated. Equipment that required washing was cleaned on visqueen placed near the waste being off loaded so that the rinse water would drain into the waste where it would suppress dust and would ultimately be loaded with the waste for off-site disposal. Per the Work Plan, decontamination was deemed complete when there was no visual evidence of contamination remaining on equipment or materials.

The upper liner was removed from the excavation. Excess soil was removed from the liner by gripping it with the excavator teeth and bucket and shaking it off. As the liner was located in overburden material above the waste, it was determined to be non-hazardous and was disposed in roll-off bins for disposal at the Billings Regional Landfill in Billings, Montana.

PPE and decontamination/sampling waste was contained within a 55-gallon satellite drum staged near the excavation staging area. Once full, the drum was labeled as hazardous waste and transported off-site for disposal under a hazardous waste manifest.

### 2.3 Summary of 2,4-D Results

Confirmation soil samples were collected from the sidewalls and bottom of each excavation and then analyzed for 2,4-D to verify that the excavation effort removed soil containing concentrations above the 2,4-D industrial RSL of 7,700 mg/kg. **Figure 3** shows sample locations. Samples were analyzed by a modified Method 8151 to achieve a 24-hour turn around for the results in an effort to minimize standby time during the excavation process.

Samples were collected, labeled, packaged on ice, and hand delivered under chain-of-custody (COC) control to Energy Laboratories in Billings, Montana. Per the DCQAP, duplicate samples were collected at a frequency of 1 per 10 samples. As samples collected per the Work Plan consisted of soil, equipment rinsate and field blanks were not collected. Analytical results underwent a data validation process. Data validation qualifiers are included in **Table 2** with the summary analytical results. A copy of the laboratory reports and COCs are provided in **Appendix D**. Data validation reports are included as **Appendix E**.

Concentrations of 2,4-D were detected at each sample location in the excavations and in the stockpiles. All concentrations were below the 2,4-D industrial RSL of 7,700 mg/kg (three locations were resampled following additional excavation).

Pond A excavation confirmation samples were collected on August 31, 2012. With an overall excavation dimension of approximately 46 feet by 91 feet, the floor of the excavation was divided into four quadrants. Three grab samples were collected from each floor quadrant and from each sidewall. The grab samples were combined into composite samples by mixing the soil in a plastic bag prior to filling the sample jar. The 2,4-D results collected from the four floor quadrants ranged from 1,210 mg/kg from the northeast quadrant to 3,960 mg/kg from the southwest quadrant. The sidewall 2,4-D sample results ranged from 1,480 mg/kg for the southern sidewall to 5,980 mg/kg for the northern sidewall.

Pond B excavation confirmation samples were collected on September 25, 2012. With an overall excavation dimension of approximately 80 feet by 120 feet, the floor of the excavation was divided into four quadrants. Three grab samples were collected from each floor quadrant and from each sidewall. The grab samples were combined into composite samples by mixing the soil in a plastic bag prior to filling the sample jar. The 2,4-D results collected from the four floor quadrants ranged from 123 mg/kg northeast quadrant (following additional excavation) to 490 mg/kg from the northwest quadrant. The sidewall 2,4-D sample results ranged from 29 mg/kg for the western sidewall to 968 mg/kg for the northern sidewall.

Pond C excavation confirmation samples were collected on October 23 through 25, 2012. With an overall excavation dimension of approximately 100 feet by 200 feet, the floor of the excavation was divided into eight quadrants. Two composite sidewall samples were collected from each of the northern and southern sidewalls, while one composite sidewall sample was collected from each of the eastern and western sidewalls. Three grab samples were collected from each floor quadrant and from each sidewall division. The grab samples were combined into composite samples by mixing the soil in a plastic bag prior to filling the sample jar. The 2,4-D results collected from the four floor quadrants ranged from 185 mg/kg center northwest quadrant (following additional excavation) to 1,380 mg/kg from the northeast quadrant. The sidewall 2,4-D sample results ranged from 152 mg/kg for the western sidewall to 1,910 mg/kg for the eastern sidewall.

## 2.4 SWMU 6 Sample Collection

The Phase II RFI Work Plan was written in 1999 and implemented 2000. As a remedy had been implemented for the SI and the unit was in post-closure, the area immediately around and below the impoundments (SWMU 6) was not investigated during the Phase II RFI process. Excavation of the impoundments now allowed access to SWMU 6; therefore, the sidewalls and bottom of the excavation were sampled in accordance with the sampling procedures discussed in the Phase II RFI Work Plan (November 22, 1999). Soil samples were collected from 4.0 to 6.0 feet bgs along the overall perimeter of the excavations and in or just above the saturated zone in the center of the excavations (two saturated zone samples were collected in Pond C). **Figure 4** shows the grab sample locations (samples were not composited).

Samples collected for the purpose of the Facility investigation were analyzed for chlorinated herbicides by USEPA Method 8151, semi-volatile organic compounds by USEPA Method 8270, and volatile organic compounds by USEPA Method 8260. Samples were collected, labeled, put on ice, and hand delivered under COC control to Energy Laboratories in Billings, Montana. Per the DCQAP, duplicate samples were collected at a frequency of 1 per 10 samples. As samples collected per the Work Plan consisted of soil, equipment rinsate

and field blanks were not collected. Analytical results underwent a data validation process. Data validation qualifiers are included in **Table 3** with the summary analytical results. Laboratory reports are included in **Appendix D** and the data validation report is included as **Appendix E**. As this completion report addresses removal of the SI, and not the Facility investigation, the results will be evaluated independently of this work plan per the protocol spelled out in LPI's Risk Assessment Addendum (revised October 2005).

## **2.5 Backfilling**

The excavations were backfilled in 1-foot lifts with overburden soil from the stockpiles or with pit run material imported from a local gravel pit. The backfill material was mechanically compacted to at least 95 percent compaction. The final surface grade was sloped away from the building to achieve positive storm water drainage.

## **2.6 Work Plan Deviations**

The overall scope of the project satisfied the scope presented in the work plan. However, there were some deviations to the approach and schedule that were discussed with MDEQ as they occurred through either face-to-face contact, via telephone, or via e-mail correspondence.

Deviations primarily resulted from the volume of solidified sludge present in each pond that significantly exceeded what was estimated at the start of the project. Estimated costs, presented in Appendix IX of the Work Plan, assumed 2,500 tons of waste would be transported and disposed of. The actual volume of waste excavated from the SI and transported off-site for disposal was 12,744 tons, approximately 5 times the estimate.

The Work Plan indicated each pond would be excavated separately, starting with Pond B and finishing with Pond C. Due to the volume of waste in Pond B, the waste transporting company, PSC, was not able to supply a sufficient volume of trucks to keep up with waste removal. To minimize standby as much as possible and to keep the project moving forward, Pond A was excavated while waste was still being removed from Pond B.

Also due to the volume of waste encountered in Pond B, Pond C was potholed prior to proceeding with excavation in an effort to better estimate the amount of solidified sludge present in Pond C. CPS and LPI decided to proceed with removal of Pond C and, due to the truck availability issues, a decision was made to ship waste via railcar in addition to trucks.

The Work Plan indicated the bottom liner would be segregated from the waste for transport to USEI Idaho. In many instances, the liner had adhered to the solidified sludge. As both were being disposed of as hazardous waste at USEI, the liner was not segregated, and was instead shipped with the solidified sludge.

Sample locations were recorded using a hand-held GPS unit. The margin of error (9 to 15 feet) resulted in the plotted points not accurately representing the sampling locations. As a result, the figures included in this report indicate approximate excavation extents and approximate sample locations.

## **2.7 Summary of Effectiveness**

Soil confirmation sampling showed the constituent of concern, 2,4-D, to be below the industrial RSL of 7,700 mg/kg. This area is considered to meet the defined remediation goals.

## **2.8 Certification of Completion and Permit Modification**

Upon 45 days of receipt of MDEQ approval of this Soils CMI Completion Report, a Certification of Completion Letter will be submitted to MDEQ on behalf of CPS and LPI. Upon further approval of the Certification of Completion, a permit modification request will be submitted for removal of the SI as a regulated unit in the current permit.

### 3.0 References

- AECOM Technical Services, Inc. (AECOM). 2012. Temporary Authorization Request for Class 3 Modification to Montana Hazardous Waste Permit MTHWP-04-01 for the Loveland Products, Inc. Facility in Billings, Montana. June 6, 2012.
- \_\_\_\_\_. 2011. Surface Impoundment Sampling Completion Report. Loveland Products, Inc. Billings, Montana. July 2011.
- Department of Environmental Quality (Idaho) (DEQ). 2012. Letter to US Ecology Idaho, Inc. (USEI). RE: U.S. Ecology Idaho (USEI) Site B – IDD073114654; Approval for Placement of CAMU Eligible Waste: Loveland Products, Inc. Billings, Montana. February 2, 2012.
- Loveland Products, Inc. (LPI). 2012. Surface Impoundment Excavation Work Plan. July 31, 2012.
- \_\_\_\_\_. 2011. Letter to Ann Kron, MDEQ. RE: Analytical Result of the Loveland Products, Inc. Surface Impoundment. June 10, 2011.
- \_\_\_\_\_. 2010a. Letter to A. Kron, MDEQ. (No subject line). June 2, 2010.
- \_\_\_\_\_. 2010b. Letter to A. Kron, MDEQ. RE: Sampling and Analysis Work Plan for Loveland Products, Inc. Surface Impoundment. December 7, 2010.
- Montana Department of Environmental Quality (MDEQ). 2012a. Letter to D. Grassel, LPI. RE: Approval of LPI's Surface Impoundment Excavation Work Plan, dated June 21, 2012, revised July 31, 2012. August 1, 2012.
- \_\_\_\_\_. 2012b. Subject: Approval of Temporary Authorization for Excavation of Surface Impoundments at Loveland Products Lockwood Facility, Permit No. MTHWP-04-01. July 10, 2012.
- \_\_\_\_\_. 2011. Letter to D. Grassel, LPI. RE: Surface Impoundment Sampling Completion Report - Loveland Products, Inc., Billings, Montana. August 31, 2011.
- \_\_\_\_\_. 2010. Letter to D. Grassel, LPI. RE: LPI's request for approval to place surface impoundment waste in an off-site CAMU, dated June 2, 2010. October 20, 2010.
- Montana Department of Health and Environmental Sciences (MDHES). 1987. Letter to R. Bodley, Transbas. November 20, 1987.
- Transbas. 1985. Closure Plan for Transbas, Inc. A Surface Impoundment in Which Waste Remain at Closure. 1985.
- \_\_\_\_\_. 1983. Partial Closure Plan for Transbas, Inc. A Surface Impoundment in Which Waste Remain at Closure. 1983.
- US Ecology Idaho (USEI). 2012. Letter to PSC, LLC. RE: Generator: Loveland Products, Inc.; Mailing Address: 1525 Lockwood Road, Billings, MT 59102; US Ecology WS #: 27705-0; Waste Stream Name: 2,4-D Soil; Expiration Date: 03/01/2013. February 29, 2012.

## Tables

**Table 1 Stockpile Analytical Results, LPI Billings, Montana**

Location/ Sample ID	Sample Date	Moisture (percent)	2,4-D (mg/kg)
<b>Pond A</b>			
A-L1-C1	08/24/2012	9.9	< 2.0
A-L2-C1	08/27/2012	4.1	159 J
A-L3-C1	08/27/2012	5.6	280 J
<b>Pond B</b>			
B-L1-C1	08/16/2012	7	< 2.0
B-L1-C2	08/16/2012	7.5	< 2.0
B-L2-C1	08/20/2012	5	101
B-L2-C2	08/20/2012	8	164
B-L2-C2-Dup	08/20/2012	7	100 J
B-L3-C1	08/20/2012	8.5	60 J
B-L4-C1	08/20/2012	12	64 J
<b>Pond C</b>			
C-L1-C1	09/28/2012	4.1	17
C-L1-C1-Dup	09/28/2012	4.6	18
C-L1-C2	10/02/2012	11	312
C-L1-S3	10/09/2012	6	27 J
C-L2-C1	09/28/2012	11	1,330
C-L2-C2	10/02/2012	9.8	326
C-L2-S3	10/09/2012	11	1,370
C-L3-S1	10/22/2012	10	384

**Notes:**

2,4-D = 2,4-dichlorophenoxyacetic acid

Dup = Designates field duplicate

J = Estimated concentration: analyte detected below quantification limits

The May 2012 USEPA Industrial Soil Regional Screening Level for 2,4-D is 7,700 mg/kg

No concentrations exceeded the 2,4-D RSL.

**Table 2 Excavation Confirmation Analytical Results, LPI Billings, Montana**

Location/ Sample ID	Sample Date	Sample Type	Moisture (percent)	2,4-D (mg/kg)
<b>Pond A</b>				
A-F-1	08/31/2012	Floor	8	1,730
A-F-2	08/31/2012	Floor	10	1,210
A-F-3	08/31/2012	Floor	8	2,200
A-F-4	08/31/2012	Floor	9.2	3,960 J
A-F-4-Dup	08/31/2012	Floor	8	2,300 J
A-S-E-1	08/31/2012	Sidewall	13	2,700
A-S-N-1	08/31/2012	Sidewall	12	5,980
A-S-S-1	08/31/2012	Sidewall	12	1,480
A-S-W-1	08/31/2012	Sidewall	9	3,160
<b>Pond B</b>				
B-F-1	09/25/2012	Floor	8.3	216
B-F-2	09/25/2012	Floor	11	2,720
B-F-2R	09/26/2012	Floor	11	123
B-F-3	09/25/2012	Floor	9.2	490
B-F-4	09/25/2012	Floor	9.7	338
B-F-4 Dup	09/25/2012	Floor	9.2	304
B-S-E-1	09/25/2012	Sidewall	7.6	127
B-S-N-1	09/25/2012	Sidewall	9.5	968
B-S-S-1	09/25/2012	Sidewall	8.3	66
B-S-W-1	09/25/2012	Sidewall	11	29
<b>Pond C</b>				
C-1TP	09/18/2012	Test Pit	24	118
C-2TP	09/19/2012	Test Pit	18	308
C-3TP	09/19/2012	Test Pit	20	852
C-4TP	09/19/2012	Test Pit	16	420
C-6TP	09/20/2012	Test Pit	17	138
C-6TP Dup	09/20/2012	Test Pit	17	166
C-F-1	10/23/2012	Floor	12	390
C-F-2	10/23/2012	Floor	12	1,380
C-F-3	10/23/2012	Floor	9.9	720
C-F-3 Dup	10/23/2012	Floor	11	864
C-F-4	10/23/2012	Floor	9.2	6,560
C-F-4R	10/25/2012	Floor	10	364
C-F-5	10/24/2012	Floor	11	1,010
C-F-6	10/23/2012	Floor	11	<b>9,280</b>
C-F-6R	10/25/2012	Floor	11	185
C-F-7	10/24/2012	Floor	11	660
C-F-8	10/24/2012	Floor	13	232
C-S-E-1	10/23/2012	Sidewall	12	1,910
C-S-N-1	10/24/2012	Sidewall	12	338
C-S-N-2	10/23/2012	Sidewall	11	706
C-S-N-2 Dup	10/23/2012	Sidewall	10	574
C-S-S-1	10/24/2012	Sidewall	12	1,510
C-S-S-2	10/24/2012	Sidewall	14	980
C-S-W-1	10/24/2012	Sidewall	14	152

**Notes:**

- R = Designates sample result following additional excavation
- 2,4-D = 2,4-dichlorophenoxyacetic acid
- Dup = Designates field duplicate
- J = Estimated concentration: analyte detected below quantification limits
- The May 2012 USEPA Industrial Soil Regional Screening Level for 2,4-D is 7,700 mg/kg
- Bold font indicates 2,4-D concentration above the RSL.

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Chemical Name	Location Sample ID Sample Date Sample Depth RSL Industrial Soil (May 2012)	Pond A				
		SI A-1A 08-31-2012 4 - 6 ft	SI A-2A 08-31-2012 4 - 6 ft	SI A-3A 08-31-2012 4 - 6 ft	SI A-3A Dup 08-31-2012 4 - 6 ft	SI A-4B 08-31-2012 12.5 - 13.5 ft
<b>MOISTURE, Method 3550A (percent)</b>		11	5.7	12	13	12
<b>HERBICIDES, Method 8151A (mg/kg)</b>						
2,4,5-T	6,200	< 0.40	< 0.40	< 0.40	< 0.40	< 0.0040
2,4,5-TP (Silvex)	4,900	< 0.40	< 0.40	< 0.40	< 0.40	< 0.0040
2,4-D	7,700	7,100	268 J	666	858	5.3
2,4-DB	4,900	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 0.50
3,5-Dichlorobenzoic acid	---	< 1.0	< 0.10	< 0.10	< 0.10	< 0.010
4-Nitrophenol	---	< 1.0	< 0.10	< 0.10	< 0.10	< 0.010
Acifluoren	---	< 1.0	< 0.10	< 0.10	< 0.10	< 0.010
Bentazone	18,000	< 5.0	< 0.50	< 0.50	< 5.0	< 0.050
Chloramben	9,200	< 1.0	< 0.10	< 1.0	< 0.10	< 0.010
Dacthal	6,200	< 2.0	< 0.20	< 0.20	< 0.20	0.025
Dalapon	18,000	< 5.0	< 0.50	< 0.50	< 0.50	< 0.050
Dicamba	18,000	3.4	0.22 J	2.0	2.4	0.25
Dichloroprop	---	136	7.7 J	21	26	0.66
Dinoseb	620	< 2.0	< 0.20	< 0.20	< 2.0	< 0.020
MCPA	310 *	< 400	< 400	< 400	< 400	< 4.0
MCPP	620	< 400	< 400	< 400	< 400	< 4.0
Pentachlorophenol	2.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.020
Picloram	43,000	< 1.0	< 0.10	< 0.10	< 0.10	< 0.010
<b>SVOCS, Method 8270C (mg/kg)</b>						
1-Methylnaphthalene	53	3.9	< 0.33	0.38	0.40	< 0.33
2,2'-Oxybis (1-Chloropropane) [bis(2-chloroisopropyl)ether]	22	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,5-Trichlorophenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,6-Trichlorophenol	160	3.4	0.62	0.97	0.76	< 0.33
2,4-Dichlorophenol	1,800	74	8.6	23	18	0.91
2,4-Dimethylphenol	12,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4-Dinitrophenol	1,200	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
2,4-Dinitrotoluene	5.5	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,6-Dinitrotoluene	620	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chloronaphthalene	82,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chlorophenol	5,100	< 0.33	< 0.33	0.30 J	0.28 J	< 0.33
2-Methylnaphthalene	2,200	7.2	0.24 J	0.62	0.62	< 0.33
2-Methylphenol (o-cresol)	31,000	< 0.33	< 0.33	< 0.33	< 0.33	0.049 J
2-Nitrophenol	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,3'-Dichlorobenzidine	3.8	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,4-Methylphenol (m+p cresols)	62,000	< 0.33	< 0.33	0.097 J	< 0.33	< 0.33
4,6-Dinitro-2-methylphenol	49	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
4-Bromophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloro-2-methylphenol	---	4.6	1.8	1.8	1.7	0.47
4-Chloro-3-methylphenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloroaniline (p-chloroaniline)	8.6	1.3	< 0.33	< 0.33	< 0.33	< 0.33
4-Chlorophenol	---	4.8	5.0	5.6	3.9	0.99
4-Chlorophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Nitroaniline	86	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthene	33,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Anthracene	170,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Azobenzene	23	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzidine	0.0075	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)anthracene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)pyrene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(b)fluoranthene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(g,h,i)perylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(k)fluoranthene	21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzoic acid	2,500,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethoxy)methane	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethyl)ether	1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Ethylhexyl)phthalate	120	0.73	< 0.33	0.45	0.44	< 0.33
Butylbenzylphthalate	910	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Chrysene	210	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diallate	28	<b>36</b>	1.3	17	16	< 0.33
Dibenz(a,h)anthracene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dibenzofuran	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diethylphthalate	490,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dimethylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-butylphthalate	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-octylphthalate	---	2.1	< 0.33	0.40	0.36	< 0.33
Fluoranthene	22,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Fluorene	22,000	0.10 J	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorobenzene	1.1	0.13 J	0.068 J	0.079 J	0.072 J	< 0.33
Hexachlorocyclopentadiene	3,700	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachloroethane	43	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Indeno(1,2,3-cd)pyrene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Isophorone	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Nitrobenzene	24	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodimethylamine	0.034	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitroso-di-n-propylamine	0.25	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodiphenylamine	350	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenanthrene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenol	180,000	< 0.33	< 0.33	< 0.33	< 0.33	0.11 J
Pyrene	17,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Pyridine	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Triallate	8,000	767	37	217	233	0.13 J

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Chemical Name	RSL Industrial Soil (May 2012)	Pond A				
		SI A-1A 08-31-2012 4 - 6 ft	SI A-2A 08-31-2012 4 - 6 ft	SI A-3A 08-31-2012 4 - 6 ft	SI A-3A Dup 08-31-2012 4 - 6 ft	SI A-4B 08-31-2012 12.5 - 13.5 ft
<b>VOCs, Method 8260B (mg/kg)</b>						
1,1,1,2-Tetrachloroethane	9.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	38,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	2.8	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	5.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethane	17	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethene	1,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	0.095 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	99	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	260	123	1.9	5.9	7.5	0.61
1,2-Dibromo-3-chloropropane	0.069 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dibromoethane	0.17 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	9,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloroethane	2.2	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloropropane	4.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	10,000	38	0.56	2.0	2.3	0.14 J
1,3-Dichlorobenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3-Dichloropropane	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	12	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,2-Dichloropropane	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Butanone (Methyl ethyl ketone)	200,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
2-Chloroethylvinyl ether	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Hexanone	1,400	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Isopropyl toluene	---	< 0.20	< 0.20	0.059 J	0.066 J	< 0.20
4-Methyl-2-pentanone (Methyl isobutyl ketone)	53,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acetone	630,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acrolein	0.65 *	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Benzene	5.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromobenzene	1,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromochloromethane	680	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromodichloromethane	1.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromoform	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromomethane	32	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon disulfide	3,700	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon tetrachloride	3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chlorobenzene	1,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroethane	61,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroform	1.5	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloromethane	500	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,2-Dichloroethene	2,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane (Chlorodibromomethane)	3.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromomethane	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dichlorodifluoromethane	400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	27	0.96	< 0.20	< 0.20	< 0.20	< 0.20
Hexachlorobutadiene	22	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Isopropylbenzene (Cumene)	11,000	2.2	0.033 J	0.12 J	0.14 J	< 0.20
m,p-Xylene	2,500	4.3	< 0.20	0.087 J	0.096 J	< 0.20
Methylene chloride	960	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methyl tert-Butyl ether	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Naphthalene	18	4.0	0.64	0.82	0.85	0.21
n-Butylbenzene	51,000	< 0.20 UJ	< 0.20 UJ	< 0.20 UJ	< 0.20 UJ	< 0.20 UJ
n-Propylbenzene	21,000	15	0.14 J	0.40	0.47	0.062 J
o-Xylene	3,000	18	0.055 J	0.15 J	0.16 J	< 0.20
sec-Butylbenzene	---	0.62	< 0.20	0.075 J	0.088 J	< 0.20
Styrene	36,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
tert-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Toluene	45,000	13	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,2-Dichloroethene	690	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	6.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	3,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl Acetate	4,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl chloride	1.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Xylene, total	2,700	22	< 0.20	0.087 J	0.096 J	< 0.20

**Notes:**

- RSL = The May 2012 USEPA Industrial Soil Regional Screening Level
- Dup = Designates field Duplicate
- \* = Detection limit exceeded RSL
- J = Estimated concentration: Analyte detected below quantitation limits
- U = Evaluated to be undetected at the reporting limit/concentration, due to evidence of contamination
- Bold font indicates concentration above the RSL for the compound.

Table 3 SWMU 6 Analytical Results, LPI Billings, Montana

Chemical Name	RSL Industrial Soil (May 2012)	Pond B			
		SI B-1A 09-25-2012 4 - 6 ft	SI B-2A 09-25-2012 4 - 6 ft	SI B-2A Dup 09-25-2012 4 - 6 ft	SI B-3B 09-25-2012 15 - 16 ft
<b>MOISTURE, Method 3550A (percent)</b>		9.8	11	11	20
<b>HERBICIDES, Method 8151A (mg/kg)</b>					
2,4,5-T	6,200	< 0.0040	< 0.040	< 0.040	< 0.0040
2,4,5-TP (Silvex)	4,900	< 0.0040	< 0.040	< 0.040	< 0.0040
2,4-D	7,700	0.069 J	50	49	0.29
2,4-DB	4,900	0.12	0.77	0.81	< 0.050
3,5-Dichlorobenzoic acid	---	< 0.010	< 0.010	< 0.010	< 0.010
4-Nitrophenol	---	< 0.10	< 0.10	< 0.10	< 0.010
Acifluoren	---	< 0.010	< 0.10	< 0.10	< 0.010
Bentazone	18,000	< 0.050	< 0.050	< 0.050	< 0.050
Chloramben	9,200	< 0.010	< 0.10	< 0.10	< 0.010
Dacthal	6,200	< 0.020	< 0.020	< 0.020	< 0.020
Dalapon	18,000	< 0.050	< 0.050	< 0.050	< 0.050
Dicamba	18,000	0.034	1.0	1.1	0.039
Dichloroprop	---	< 0.20	2.8	3.0	< 0.020
Dinoseb	620	< 0.020	< 0.20	< 0.20	< 0.020
MCPA	310 *	< 40 UJ	< 40 UJ	< 40 UJ	< 4.0
MCPP	620	< 4.0	< 40	< 40	< 4.0
Pentachlorophenol	2.7	< 0.0020	< 0.20	< 0.20	< 0.0020
Picloram	43,000	< 0.010	< 0.010	< 0.010	< 0.010
<b>SVOCS, Method 8270C (mg/kg)</b>					
1-Methylnaphthalene	53	< 0.33	< 0.33	< 0.33	< 0.33
2,2'-Oxybis (1-Chloropropane) [bis(2-chloroisopropyl)ether]	22	< 0.33	< 0.33	< 0.33	< 0.33
2,4,5-Trichlorophenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33
2,4,6-Trichlorophenol	160	< 0.33	0.12 J	0.15 J	< 0.33
2,4-Dichlorophenol	1,800	< 0.33	8.8	9.6	< 0.33
2,4-Dimethylphenol	12,000	< 0.33	< 0.33	< 0.33	< 0.33
2,4-Dinitrophenol	1,200	< 1.7 UJ	< 1.7	< 1.7	< 1.7
2,4-Dinitrotoluene	5.5	< 0.33	< 0.33	< 0.33	< 0.33
2,6-Dinitrotoluene	620	< 0.33	< 0.33	< 0.33	< 0.33
2-Chloronaphthalene	82,000	< 0.33	< 0.33	< 0.33	< 0.33
2-Chlorophenol	5,100	< 0.33	< 0.33	< 0.33	< 0.33
2-Methylnaphthalene	2,200	< 0.33	< 0.33	< 0.33	< 0.33
2-Methylphenol (o-cresol)	31,000	0.14 J	2.9	2.6	< 0.33
2-Nitrophenol	---	< 0.33	< 0.33	< 0.33	< 0.33
3,3'-Dichlorobenzidine	3.8	< 0.33	< 0.33	< 0.33	< 0.33
3,4-Methylphenol (m+p cresols)	62,000	< 0.33	0.13 J	0.078 J	< 0.33
4,6-Dinitro-2-methylphenol	49	< 1.7	< 1.7	< 1.7	< 1.7
4-Bromophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloro-2-methylphenol	---	2.7	4.8	5.4	< 0.33
4-Chloro-3-methylphenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloroaniline (p-chloroaniline)	8.6	< 0.33	< 0.33	< 0.33	< 0.33
4-Chlorophenol	---	0.19 J	7.8	9.0	< 0.33
4-Chlorophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33
4-Nitroaniline	86	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthene	33,000	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthylene	---	< 0.33	< 0.33	< 0.33	< 0.33
Anthracene	170,000	< 0.33	< 0.33	< 0.33	< 0.33
Azobenzene	23	< 0.33	< 0.33	< 0.33	< 0.33
Benzidine	0.0075	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)anthracene	2.1	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)pyrene	0.21	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(b)fluoranthene	2.1	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(g,h,i)perylene	---	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(k)fluoranthene	21	< 0.33	< 0.33	< 0.33	< 0.33
Benzoic acid	2,500,000	< 0.33 UJ	0.42	0.39	< 0.33
bis(2-Chloroethoxy)methane	1,800	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethyl)ether	1	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Ethylhexyl)phthalate	120	< 0.33	< 0.33	< 0.33	< 0.33
Butylbenzylphthalate	910	< 0.33	< 0.33	< 0.33	< 0.33
Chrysene	210	< 0.33	< 0.33	< 0.33	< 0.33
Diallate	28	0.70	0.88	0.99	< 0.33
Dibenz(a,h)anthracene	0.21	< 0.33	< 0.33	< 0.33	< 0.33
Dibenzofuran	1,000	< 0.33	< 0.33	< 0.33	< 0.33
Diethylphthalate	490,000	< 0.33	< 0.33	< 0.33	< 0.33
Dimethylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-butylphthalate	62,000	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-octylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33
Fluoranthene	22,000	< 0.33	< 0.33	< 0.33	< 0.33
Fluorene	22,000	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorobenzene	1.1	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorocyclopentadiene	3,700	< 0.33	< 0.33	< 0.33	< 0.33
Hexachloroethane	43	< 0.33	< 0.33	< 0.33	< 0.33
Indeno(1,2,3-cd)pyrene	2.1	< 0.33	< 0.33	< 0.33	< 0.33
Isophorone	1,800	< 0.33	< 0.33	< 0.33	< 0.33
Nitrobenzene	24	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodimethylamine	0.034	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitroso-di-n-propylamine	0.25	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodiphenylamine	350	< 0.33	< 0.33	< 0.33	< 0.33
Phenanthrene	---	< 0.33	< 0.33	< 0.33	< 0.33
Phenol	180,000	< 0.33	< 0.33	< 0.33	< 0.33
Pyrene	17,000	< 0.33	< 0.33	< 0.33	< 0.33
Pyridine	1,000	< 0.33	< 0.33	< 0.33	< 0.33
Triallate	8,000	14 J	0.68	0.83	< 0.33

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Chemical Name	RSL Industrial Soil (May 2012)	Pond B			
		SI B-1A 09-25-2012 4 - 6 ft	SI B-2A 09-25-2012 4 - 6 ft	SI B-2A Dup 09-25-2012 4 - 6 ft	SI B-3B 09-25-2012 15 - 16 ft
<b>VOCs, Method 8260B (mg/kg)</b>					
1,1,1,2-Tetrachloroethane	9.3	< 0.20	< 0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	38,000	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	2.8	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	5.3	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethane	17	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethene	1,100	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	0.095 *	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	99	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	260	0.055 J	0.11 J	0.095 J	< 0.20
1,2-Dibromo-3-chloropropane	0.069 *	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dibromoethane	0.17 *	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	9,800	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloroethane	2.2	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloropropane	4.7	< 0.20	< 0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	10,000	< 0.20	< 0.20	0.026 J	< 0.20
1,3-Dichlorobenzene	---	< 0.20	< 0.20	< 0.20	< 0.20
1,3-Dichloropropane	20,000	< 0.20	< 0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	12	< 0.20	< 0.20	< 0.20	< 0.20
2,2-Dichloropropane	---	< 0.20	< 0.20	< 0.20	< 0.20
2-Butanone (Methyl ethyl ketone)	200,000	< 4.0	< 4.0	< 4.0	< 4.0
2-Chloroethylvinyl ether	---	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20
2-Hexanone	1,400	< 4.0	< 4.0	< 4.0	< 4.0
4-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20
4-Isopropyl toluene	---	< 0.20	< 0.20	< 0.20	< 0.20
4-Methyl-2-pentanone (Methyl isobutyl ketone)	53,000	< 4.0	< 4.0	< 4.0	< 4.0
Acetone	630,000	< 4.0	0.98 J	< 4.0	< 4.0
Acrolein	0.65 *	< 4.0	< 4.0	< 4.0	< 4.0
Benzene	5.4	< 0.20	< 0.20	< 0.20	< 0.20
Bromobenzene	1,800	< 0.20	< 0.20	< 0.20	< 0.20
Bromochloromethane	680	< 0.20	< 0.20	< 0.20	< 0.20
Bromodichloromethane	1.4	< 0.20	< 0.20	< 0.20	< 0.20
Bromoform	220	< 0.20	< 0.20	< 0.20	< 0.20
Bromomethane	32	< 0.20	< 0.20	< 0.20	< 0.20
Carbon disulfide	3,700	< 0.20	< 0.20	< 0.20	< 0.20
Carbon tetrachloride	3	< 0.20	< 0.20	< 0.20	< 0.20
Chlorobenzene	1,400	< 0.20	< 0.20	< 0.20	< 0.20
Chloroethane	61,000	< 0.20	< 0.20	< 0.20	< 0.20
Chloroform	1.5	< 0.20	< 0.20	< 0.20	< 0.20
Chloromethane	500	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,2-Dichloroethene	2,000	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane (Chlorodibromomethane)	3.3	< 0.20	< 0.20	< 0.20	< 0.20
Dibromomethane	110	< 0.20	< 0.20	< 0.20	< 0.20
Dichlorodifluoromethane	400	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	27	< 0.20	< 0.20	< 0.20	< 0.20
Hexachlorobutadiene	22	< 0.20	< 0.20	< 0.20	< 0.20
Isopropylbenzene (Cumene)	11,000	< 0.20	< 0.20	< 0.20	< 0.20
m,p-Xylene	2,500	< 0.20	< 0.20	< 0.20	< 0.20
Methylene chloride	960	< 0.20	< 0.20	< 0.20	< 0.20
Methyl tert-Butyl ether	220	< 0.20	< 0.20	< 0.20	< 0.20
Naphthalene	18	< 0.20	< 0.20	< 0.20	< 0.20
n-Butylbenzene	51,000	< 0.20	< 0.20	< 0.20	< 0.20
n-Propylbenzene	21,000	< 0.20	< 0.20	< 0.20	< 0.20
o-Xylene	3,000	< 0.20	< 0.20	< 0.20	< 0.20
sec-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20
Styrene	36,000	< 0.20	< 0.20	< 0.20	< 0.20
tert-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	110	< 0.20	< 0.20	< 0.20	< 0.20
Toluene	45,000	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,2-Dichloroethene	690	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	6.4	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	3,400	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl Acetate	4,100	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl chloride	1.7	< 0.20	< 0.20	< 0.20	< 0.20
Xylene, total	2,700	< 0.20	< 0.20	< 0.20	< 0.20

**Notes:**

- RSL = The May 2012 USEPA Industrial Soil Regional Screening Level
- Dup = Designates field Duplicate
- \* = Detection limit exceeded RSL
- J = Estimated concentration: Analyte detected below quantitation limits
- U = Evaluated to be undetected at the reporting limit/concentration,  
due to evidence of contamination
- Bold font indicates concentration above the RSL for the compound.

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Location Sample ID Sample Date Sample Depth		Pond C					
		SI C-1A 10-24-2012 4 - 6 ft	SI C-2A 10-24-2012 4 - 6 ft	SI C-3A 10-24-2012 4 - 6 ft	SI C-4A 10-24-2012 4 - 6 ft	SI C-5A 10-24-2012 4 - 6 ft	SI C-6A 10-24-2012 4 - 6 ft
Chemical Name	RSL Industrial Soil (May 2012)						
<b>MOISTURE, Method 3550A (percent)</b>		9.5	11	15	11	9.6	13
<b>HERBICIDES, Method 8151A (mg/kg)</b>							
2,4,5-T	6,200	0.08	0.023	0.059	0.064	0.23	0.10
2,4,5-TP (Silvex)	4,900	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.0040
2,4-D	7,700	258	87	216	150	252	204
2,4-DB	4,900	3.1	1.5	3.8	4.0	6.1	1.8
3,5-Dichlorobenzoic acid	---	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 1.0
4-Nitrophenol	---	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 1.0
Acifluoren	---	< 1.0	< 1.0	< 0.010	< 1.0	< 1.0	< 0.010
Bentazone	18,000	< 5.0	< 5.0	< 5.0	< 0.050	< 0.050	< 0.050
Chloramben	9,200	< 0.010	< 0.010	< 1.0	< 1.0	< 1.0	< 1.0
Dacthal	6,200	< 2.0	< 0.020	< 0.020	< 2.0	< 2.0	< 0.020
Dalapon	18,000	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Dicamba	18,000	1.3	0.78	0.69	2.8	2.7	2.9
Dichloroprop	---	4.1	3.2	4.5	5.8	9.1	7.2
Dinoseb	620	< 2.0	< 0.020	< 0.020	< 0.020	< 2.0	< 0.020
MCPA	310 *	25	12	26	31	40	24
MCPP	620	< 400	< 400	< 400	< 400	< 400	< 400
Pentachlorophenol	2.7	< 2.0	< 0.20	< 2.0	< 0.20	< 2.0	< 2.0
Picloram	43,000	< 1.0	< 1.0	< 0.010	< 1.0	< 0.010	< 0.010
<b>SVOCs, Method 8270C (mg/kg)</b>							
1-Methylnaphthalene	53	< 0.33	< 0.33	0.23 J	< 0.33	0.27 J	< 0.33
2,2'-Oxybis (1-Chloropropane) [bis(2-chloroisopropyl)ether]	22	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,5-Trichlorophenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,6-Trichlorophenol	160	0.22 J	0.31 J	0.23 J	0.26 J	0.26 J	0.63
2,4-Dichlorophenol	1,800	6.2	15	17	8.2	14	34
2,4-Dimethylphenol	12,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4-Dinitrophenol	1,200	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
2,4-Dinitrotoluene	5.5	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,6-Dinitrotoluene	620	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chloronaphthalene	82,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chlorophenol	5,100	0.088 J	0.13 J	0.10 J	0.17 J	< 0.33	0.22 J
2-Methylnaphthalene	2,200	< 0.33	0.067 J	0.36	< 0.33	0.37	0.067 J
2-Methylphenol (o-cresol)	31,000	0.37	0.082 J	0.058 J	< 0.33	< 0.33	0.070 J
2-Nitrophenol	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,3'-Dichlorobenzidine	3.8	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,4-Methylphenol (m+p cresols)	62,000	< 0.33	0.28 J	0.17 J	< 0.33	< 0.33	0.16 J
4,6-Dinitro-2-methylphenol	49	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
4-Bromophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloro-2-methylphenol	---	0.56	6.1	1.2	3.3	0.89	8.1
4-Chloro-3-methylphenol	62,000	< 0.33	< 0.33	0.65	< 0.33	< 0.33	< 0.33
4-Chloroaniline (p-chloroaniline)	8.6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chlorophenol	---	6.4	33	22	7.1	4.0	35
4-Chlorophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Nitroaniline	86	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthene	33,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Anthracene	170,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Azobenzene	23	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzidine	0.0075	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)anthracene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)pyrene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(b)fluoranthene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(g,h,i)perylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(k)fluoranthene	21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzoic acid	2,500,000	< 0.33 UJ	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethoxy)methane	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethyl)ether	1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Ethylhexyl)phthalate	120	< 0.33	< 0.33	0.35	< 0.33	< 0.33	< 0.33
Butylbenzylphthalate	910	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Chrysene	210	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diallate	28	< 0.33	0.91	0.24 J	< 0.33	0.21 J	0.61
Dibenz(a,h)anthracene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dibenzofuran	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diethylphthalate	490,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dimethylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-butylphthalate	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-octylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33	0.16 J	< 0.33
Fluoranthene	22,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Fluorene	22,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorobenzene	1.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorocyclopentadiene	3,700	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachloroethane	43	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Indeno(1,2,3-cd)pyrene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Isophorone	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Nitrobenzene	24	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodimethylamine	0.034	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitroso-di-n-propylamine	0.25	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodiphenylamine	350	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenanthrene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenol	180,000	1.3	0.48	0.29 J	0.16 J	0.098 J	0.27 J
Pyrene	17,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Pyridine	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Triallate	8,000	3.9 J	10	63	12	100	17

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Chemical Name	Location Sample ID Sample Date Sample Depth  RSL Industrial Soil (May 2012)	Pond C					
		SI C-1A 10-24-2012 4 - 6 ft	SI C-2A 10-24-2012 4 - 6 ft	SI C-3A 10-24-2012 4 - 6 ft	SI C-4A 10-24-2012 4 - 6 ft	SI C-5A 10-24-2012 4 - 6 ft	SI C-6A 10-24-2012 4 - 6 ft
<b>VOCs, Method 8260B (mg/kg)</b>							
1,1,1,2-Tetrachloroethane	9.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	38,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	2.8	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	5.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethane	17	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethene	1,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	0.095 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	99	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	260	0.77 J	0.15 J	2.9	0.13 J	2.1	0.47
1,2-Dibromo-3-chloropropane	0.069 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dibromoethane	0.17 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	9,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloroethane	2.2	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloropropane	4.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	10,000	0.35	0.058 J	1.2	0.047 J	0.86	0.19 J
1,3-Dichlorobenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3-Dichloropropane	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	12	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,2-Dichloropropane	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Butanone (Methyl ethyl ketone)	200,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
2-Chloroethylvinyl ether	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Hexanone	1,400	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Isopropyl toluene	---	< 0.20	< 0.20	< 0.20	< 0.20	0.064 J	< 0.20
4-Methyl-2-pentanone (Methyl isobutyl ketone)	53,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acetone	630,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acrolein	0.65 *	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Benzene	5.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromobenzene	1,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromochloromethane	680	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromodichloromethane	1.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromoform	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromomethane	32	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon disulfide	3,700	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon tetrachloride	3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chlorobenzene	1,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroethane	61,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroform	1.5	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloromethane	500	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,2-Dichloroethene	2,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane (Chlorodibromomethane)	3.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromomethane	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dichlorodifluoromethane	400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	27	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Hexachlorobutadiene	22	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Isopropylbenzene (Cumene)	11,000	0.028 J	< 0.20	0.098 J	< 0.20	0.075 J	< 0.20
m,p-Xylene	2,500	< 0.20	< 0.20	0.11 J	< 0.20	0.063 J	< 0.20
Methylene chloride	960	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methyl tert-Butyl ether	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Naphthalene	18	0.083 J	< 0.20	0.21	< 0.20	0.13 J	< 0.20
n-Butylbenzene	51,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
n-Propylbenzene	21,000	0.080 J	< 0.20	0.32	< 0.20	0.27	0.079 J
o-Xylene	3,000	0.067 J	< 0.20	0.27	< 0.20	0.16 J	0.046 J
sec-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	0.037 J	< 0.20
Styrene	36,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
tert-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Toluene	45,000	< 0.20	< 0.20	0.11 J	< 0.20	0.044 J	< 0.20
trans-1,2-Dichloroethene	690	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	6.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	3,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl Acetate	4,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl chloride	1.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Xylene, total	2,700	< 0.20	< 0.20	0.11 J	< 0.20	0.063 J	< 0.20

**Notes:**

RSL = The May 2012 USEPA Industrial Soil Regional Screening Level

Dup = Designates field Duplicate

\* = Detection limit exceeded RSL

J = Estimated concentration: Analyte detected below quantitation limits

U = Evaluated to be undetected at the reporting limit/concentration,  
due to evidence of contamination

Bold font indicates concentration above the RSL for the compound.

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

		Location Sample ID Sample Date Sample Depth	Pond C				
			SI C-7A 10-24-2012 4 - 6 ft	SI C-8A 10-24-2012 4 - 6 ft	SI C-9A 10-24-2012 4 - 6 ft	SI C-10B 10-24-2012 14 - 15 ft	SI C-10B Dup 10-24-2012 14 - 15 ft
Chemical Name	RSL Industrial Soil (May 2012)						
<b>MOISTURE, Method 3550A (percent)</b>		9.6	13	15	17	16	17
<b>HERBICIDES, Method 8151A (mg/kg)</b>							
2,4,5-T	6,200	< 0.40	0.38	1.2	< 0.0040	< 0.0040	< 0.0040
2,4,5-TP (Silvex)	4,900	< 0.40	< 0.40	< 0.40	< 0.0040	< 0.0040	< 0.0040
2,4-D	7,700	98	1350	3740	1.9	1.6	0.54 J
2,4-DB	4,900	0.30	4.9	< 5.0	< 0.050	< 0.050	< 0.050
3,5-Dichlorobenzoic acid	---	< 1.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
4-Nitrophenol	---	< 1.0	< 1.0	< 0.010	< 0.10	< 0.10	< 0.010
Acifluoren	---	< 0.010	< 1.0	< 1.0	< 0.010	< 0.010	< 0.010
Bentazone	18,000	< 0.050	< 0.050	< 5.0	< 0.50	< 0.50	< 0.050
Chloramben	9,200	< 1.0	< 1.0	< 1.0	< 0.010	< 0.010	< 0.010
Dacthal	6,200	< 0.020	< 0.020	< 2.0	< 0.020	< 0.020	< 0.020
Dalapon	18,000	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Dicamba	18,000	3.3	0.80	0.63	0.12	0.13	0.037
Dichloroprop	---	7.0	13	20	0.50	0.58	< 0.020
Dinoseb	620	< 0.020	< 2.0	< 2.0	< 0.020	< 0.020	< 0.020
MCPA	310 *	14	< 400	< 400	< 4.0	< 4.0	< 4.0
MCPP	620	< 400	< 400	< 400	< 40	< 40	< 4.0
Pentachlorophenol	2.7	< 2.0	< 10	< 1.0	< 0.020	< 0.020	< 0.0020
Picloram	43,000	< 0.010	< 0.010	< 1.0	< 0.010	< 0.010	< 0.010
<b>SVOCs, Method 8270C (mg/kg)</b>							
1-Methylnaphthalene	53	< 0.33	1.5	2.2	< 0.33	< 0.33	< 0.33
2,2'-Oxybis (1-Chloropropane) [bis(2-chloroisopropyl)ether]	22	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,5-Trichlorophenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4,6-Trichlorophenol	160	0.22 J	0.68	0.69	< 0.33	< 0.33	< 0.33
2,4-Dichlorophenol	1,800	13	35	29	0.58	0.33	< 0.33
2,4-Dimethylphenol	12,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,4-Dinitrophenol	1,200	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
2,4-Dinitrotoluene	5.5	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2,6-Dinitrotoluene	620	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chloronaphthalene	82,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
2-Chlorophenol	5,100	0.23 J	0.41	0.11 J	< 0.33	< 0.33	< 0.33
2-Methylnaphthalene	2,200	< 0.33	2.5	3.6	< 0.33	< 0.33	< 0.33
2-Methylphenol (o-cresol)	31,000	0.12 J	0.22 J	< 0.33	0.28 J	0.41	< 0.33
2-Nitrophenol	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,3'-Dichlorobenzidine	3.8	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
3,4-Methylphenol (m+p cresols)	62,000	0.12 J	0.12 J	< 0.33	< 0.33	< 0.33	< 0.33
4,6-Dinitro-2-methylphenol	49	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
4-Bromophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloro-2-methylphenol	---	15	4.4	2.4	0.35	0.29 J	< 0.33
4-Chloro-3-methylphenol	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chloroaniline (p-chloroaniline)	8.6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Chlorophenol	---	29	29	18	0.32 J	0.28 J	< 0.33
4-Chlorophenyl-phenylether	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
4-Nitroaniline	86	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthene	33,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Acenaphthylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Anthracene	170,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Azobenzene	23	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzidine	0.0075	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)anthracene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(a)pyrene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(b)fluoranthene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(g,h,i)perylene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzo(k)fluoranthene	21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Benzoic acid	2,500,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethoxy)methane	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Chloroethyl)ether	1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
bis(2-Ethylhexyl)phthalate	120	< 0.33	0.75	0.84	< 0.33	< 0.33	0.65
Butylbenzylphthalate	910	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Chrysene	210	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diallate	28	< 0.33	0.54	0.57	0.55	0.44	< 0.33
Dibenz(a,h)anthracene	0.21	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dibenzofuran	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Diethylphthalate	490,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Dimethylphthalate	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-butylphthalate	62,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Di-n-octylphthalate	---	< 0.33	1.4	2.2	< 0.33	< 0.33	< 0.33
Fluoranthene	22,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Fluorene	22,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorobenzene	1.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachlorocyclopentadiene	3,700	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Hexachloroethane	43	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Indeno(1,2,3-cd)pyrene	2.1	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Isophorone	1,800	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Nitrobenzene	24	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodimethylamine	0.034	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitroso-di-n-propylamine	0.25	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
N-Nitrosodiphenylamine	350	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenanthrene	---	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Phenol	180,000	0.20 J	1.2	< 0.33	0.077 J	0.065 J	< 0.33
Pyrene	17,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Pyridine	1,000	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
Triallate	8,000	6.4	221	219	< 0.33	< 0.33	< 0.33

**Table 3 SWMU 6 Analytical Results, LPI Billings, Montana**

Chemical Name	Location Sample ID Sample Date Sample Depth  RSL Industrial Soil (May 2012)	Pond C					
		SI C-7A 10-24-2012 4 - 6 ft	SI C-8A 10-24-2012 4 - 6 ft	SI C-9A 10-24-2012 4 - 6 ft	SI C-10B 10-24-2012 14 - 15 ft	SI C-10B Dup 10-24-2012 14 - 15 ft	SI C-11B 10-24-2012 13.5 - 14.5 ft
<b>VOCs, Method 8260B (mg/kg)</b>							
1,1,1,2-Tetrachloroethane	9.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,1-Trichloroethane	38,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	2.8	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2-Trichloroethane	5.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethane	17	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloroethene	1,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,3-Trichloropropane	0.095 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trichlorobenzene	99	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2,4-Trimethylbenzene	260	< 0.20	5.4	11	0.50	0.39	0.36
1,2-Dibromo-3-chloropropane	0.069 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dibromoethane	0.17 *	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichlorobenzene	9,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloroethane	2.2	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,2-Dichloropropane	4.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3,5-Trimethylbenzene	10,000	< 0.20	2.0	3.9	0.17 J	0.13 J	0.092 J
1,3-Dichlorobenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,3-Dichloropropane	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,4-Dichlorobenzene	12	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,2-Dichloropropane	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Butanone (Methyl ethyl ketone)	200,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
2-Chloroethylvinyl ether	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Hexanone	1,400	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
4-Chlorotoluene	20,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Isopropyl toluene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Methyl-2-pentanone (Methyl isobutyl ketone)	53,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acetone	630,000	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Acrolein	0.65 *	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Benzene	5.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromobenzene	1,800	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromochloromethane	680	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromodichloromethane	1.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromoform	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Bromomethane	32	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon disulfide	3,700	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Carbon tetrachloride	3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chlorobenzene	1,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroethane	61,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloroform	1.5	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chloromethane	500	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,2-Dichloroethene	2,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
cis-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane (Chlorodibromomethane)	3.3	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromomethane	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dichlorodifluoromethane	400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	27	< 0.20	0.040 J	0.41	< 0.20	< 0.20	< 0.20
Hexachlorobutadiene	22	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Isopropylbenzene (Cumene)	11,000	< 0.20	0.20	0.58	0.028 J	< 0.20	< 0.20
m,p-Xylene	2,500	< 0.20	0.23	1.8	< 0.20	< 0.20	< 0.20
Methylene chloride	960	< 0.20	0.042 J	< 0.20	< 0.20	< 0.20	< 0.20
Methyl tert-Butyl ether	220	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Naphthalene	18	< 0.20	0.48	0.67	< 0.20	< 0.20	< 0.20
n-Butylbenzene	51,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
n-Propylbenzene	21,000	< 0.20	0.70	1.7	0.083 J	0.061 J	0.053 J
o-Xylene	3,000	< 0.20	0.55	2.6	0.036 J	0.028 J	< 0.20
sec-Butylbenzene	---	< 0.20	0.090 J	< 0.20	< 0.20	< 0.20	< 0.20
Styrene	36,000	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
tert-Butylbenzene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	110	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Toluene	45,000	< 0.20	0.097 J	4.5	0.026 J	< 0.20	< 0.20
trans-1,2-Dichloroethene	690	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
trans-1,3-Dichloropropene	---	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	6.4	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	3,400	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl Acetate	4,100	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vinyl chloride	1.7	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Xylene, total	2,700	< 0.20	0.23	1.8	< 0.20	< 0.20	< 0.20

**Notes:**

RSL = The May 2012 USEPA Industrial Soil Regional Screening Level

Dup = Designates field Duplicate

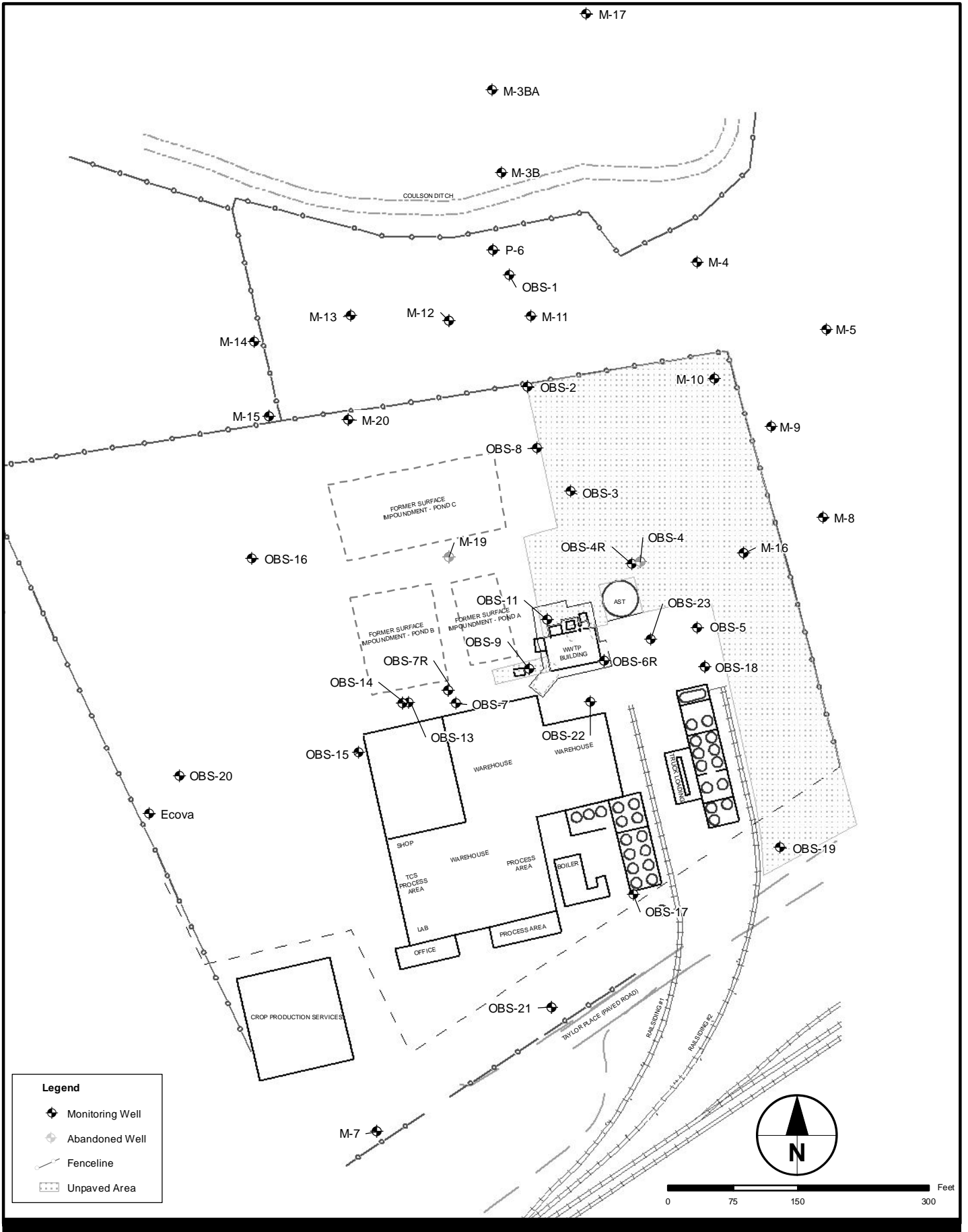
\* = Detection limit exceeded RSL

J = Estimated concentration: Analyte detected below quantitation limits

U = Evaluated to be undetected at the reporting limit/concentration,  
due to evidence of contamination

Bold font indicates concentration above the RSL for the compound.

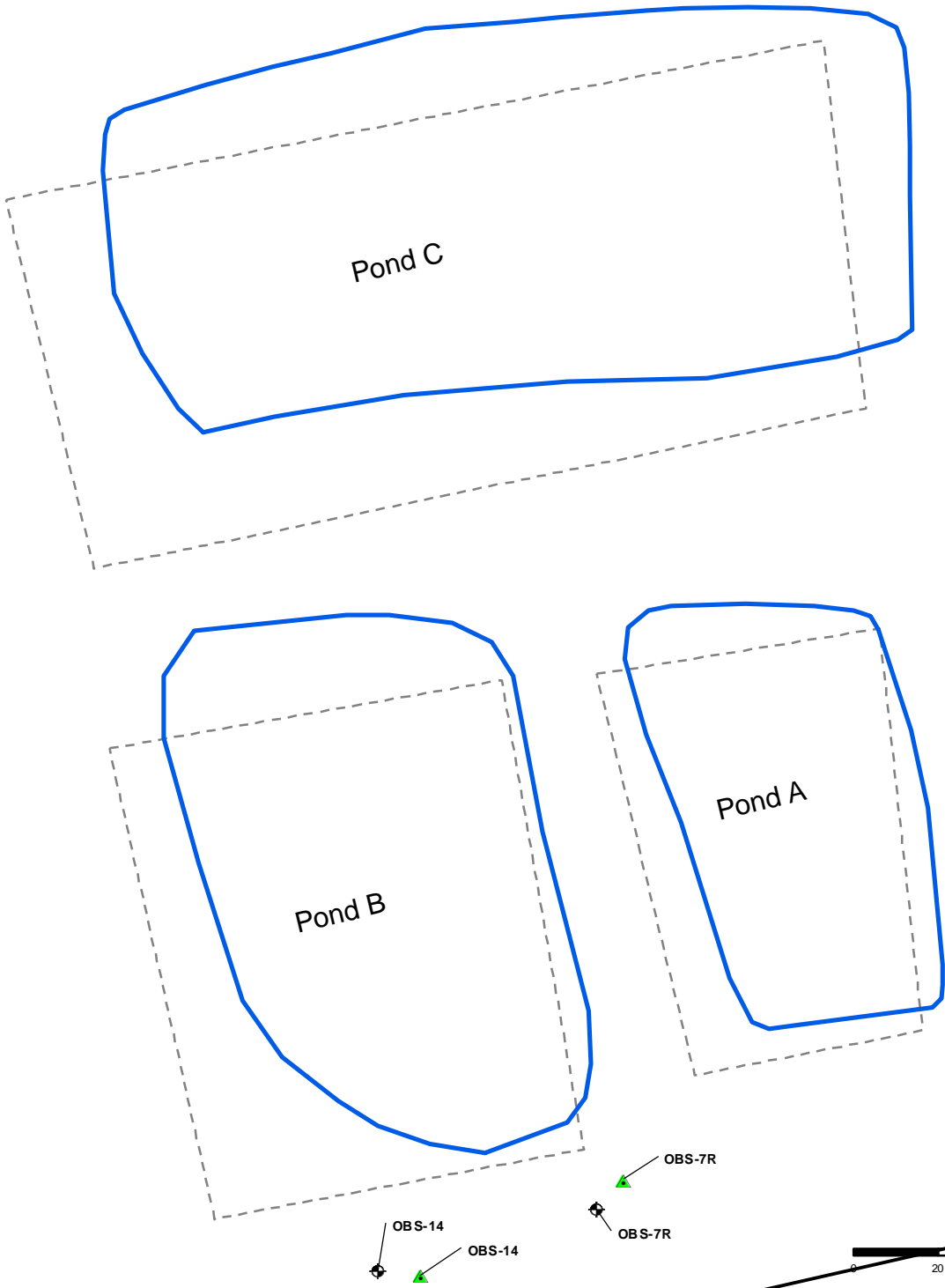
## Figures

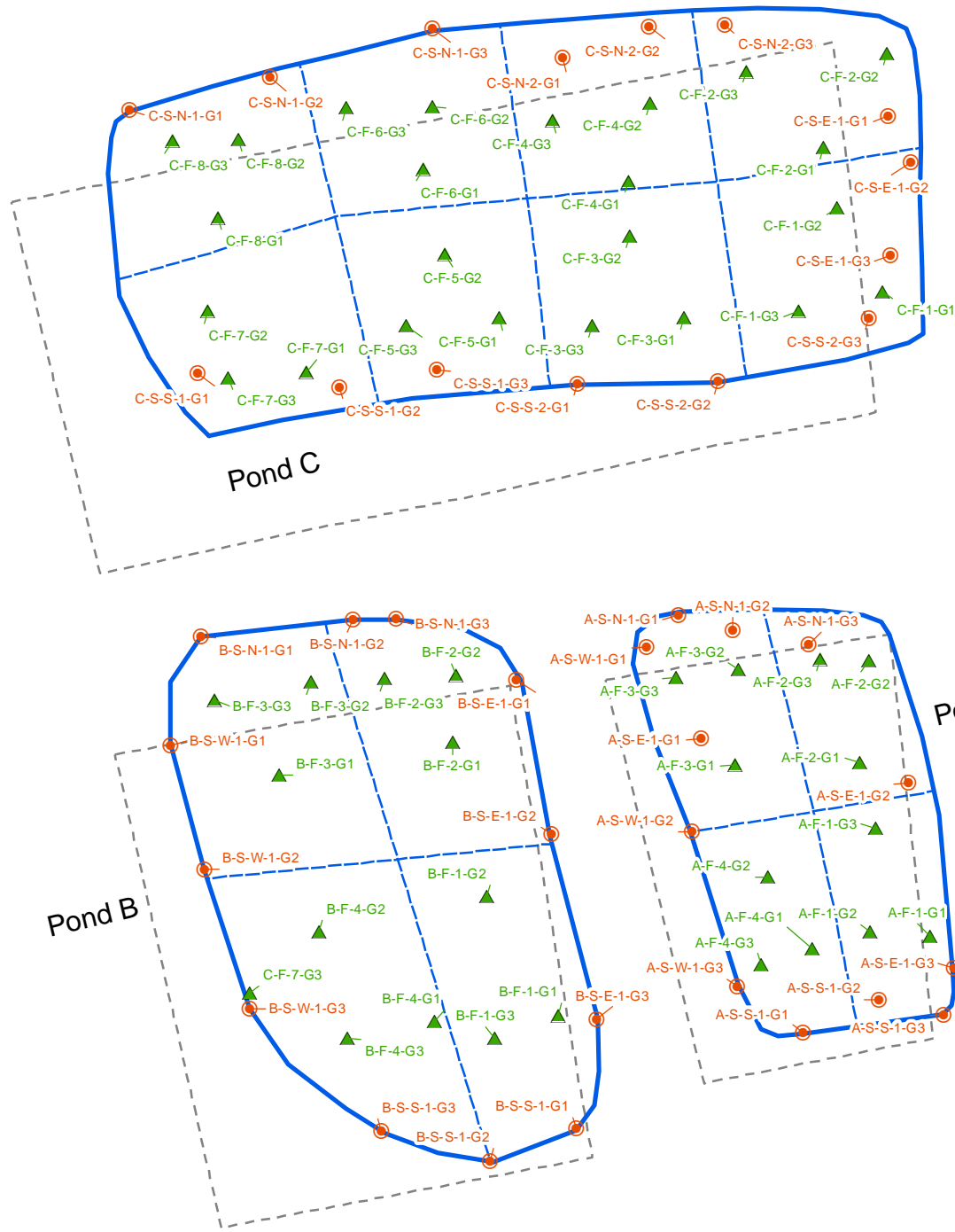


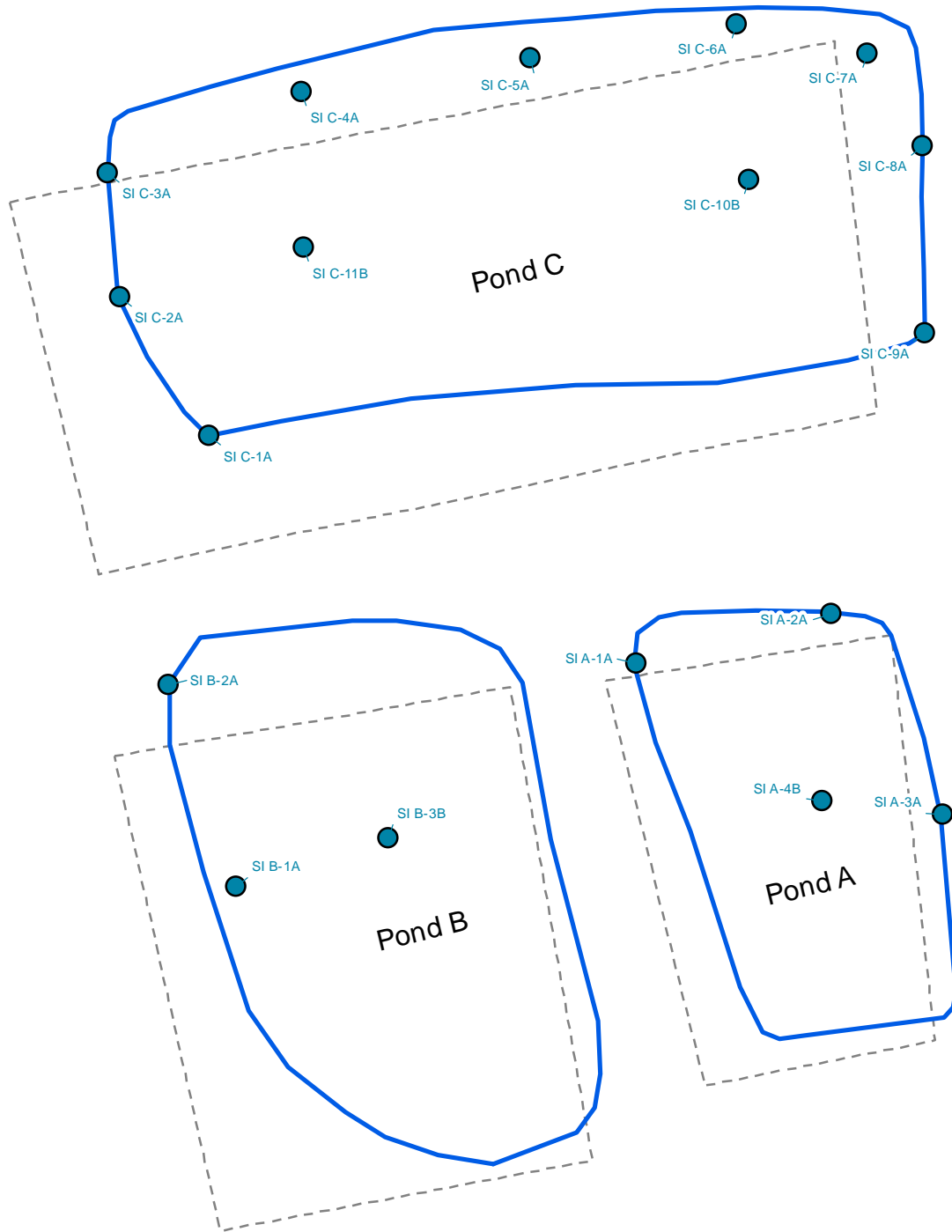
**Legend**

- ◆ Surveyed Well Locations
- ▲ GPS Recorded Well Locations
- Approximate Location of Historic Ponds
- ▭ Approximate Final Excavation Boundary

Note:  
Final excavation boundaries are based on GPS coordinates using a hand-held unit with a margin of error between 9 and 15 feet. Monitoring well locations are plotted to show the margin of error of the GPS coordinates.







# **Appendix A**

## **Field Notes**

CPI Billings

8/13/12

60266033

SI Excavation Kick off meeting

~~Attended by~~<sup>59</sup>

Led by: Linda Hendrichsen, CPS

Attended by:

Linda Hendrichsen -

Diana Grassel -

Lee Schwabenberg -

Sig Ross -

Robert Wilkerson -

Shelly Young

Jen Bogadi

Jake Haver

Safety - check in + out

Heavy equipment awareness

Exclusion zone + entry

OCS under their HASP

AECOM under its HASP

Plant under their HASP

Budget = Linda, Logistics/Plant = Lee

Return to Ben

- Daily tracking spreadsheet.
- Tell Robert every day which samples are taken.
- Also indicate w/ stakes what passes + fails.

MDEE on site Wednesday or Thursday.  
 \* Indicate any deviations in field notes.

Daily check in - Diana w/ Ann daily.  
 \* Saturday, ensure signed into OCS  
 - Shelly + Robert check in w/ Linda daily when on site

Follow work plan.

Current status -

- 1/2 asphalt removed -
- tomorrow, remaining asphalt + 1<sup>st</sup> lift.
- Sample 1<sup>st</sup> lift Wednesday AM.

mtg cont

8/13/12

Backfilling - 98% compaction w/ proctor testing.

Manifests signed by LPE or CPS copy w/ OCS.

Work hours will be -

7:30 - 5:30 M-Sat

Sampling M-F, no sample collection on Saturday

Proceeded w/ visit to the excavation area. Asphalt removal in progress.

Took photos of abandoned <sup>sig</sup> well  
~~19-15~~ M-19

Returned to office.

Sample bottles and flagging for sample locations obtained 8/14/12.

JJ

CPS - LPI BILLINGS

08/16/12

POND B - EXCAVATION

WX: 60°F; PARTLY SUNNY; SL. BREEZE  
0730 S. YOUNG (AECOM - PM) : J. BOGARDI  
(AECOM - FIELD TECH) ONSITE; MET  
WITH ROBERT (OCS) : HIS CREW  
FOR MORNING TAILGATE [NOTE: JEN:  
SHELLY BOTH SIGNED IN VISITOR LOG  
@ LPI FRONT DESK] AND TO SIGN  
IN ON OCS'S SIGN-IN LOG; TAILGATE  
TOPICS: TODAY'S TASKS, PPE: STANDARD  
EXCAVATION, HEAVY EQUIP OPS, SLIPS/  
TRIPS/FALLS, DEHYDRATION, TRENCH  
SAFETY (24 FT DEEP AFTER NEXT LIFT).  
0750 SHELLY YOUNG WALKTHROUGH W/ ROBERT  
OF EXCAVATION; TOOK PHOTOS; OCS  
COMPLETED LIFT 1 (0-2') OF POND B  
LAST NIGHT  
0810 MOVE TO STOCK PILES TO COLLECT 2  
COMPOSITE SAMPLES OF POND B - LIFT 1;  
STOCKPILE IS APPROX. 1300 CY (REQUIRING  
2 COMPOSITE SAMPLES PER WORK PLAN)  
0935 PPE WAS PLACED IN 55-GAL DRUM  
ONSITE MAINTAINED BY OCS (PPE - DISP.  
= DECON).  
0945 SIGNED OUT OF LPI OFFICE; OFFSITE.

JLB

## PHOTO LOG:

- 001 - NORTHWEST CORNER - POND B - LOOKING SE  
 002 - NORTHWEST CORNER - POND B - LOOKING SOUTH  
 003 - SOUTHWEST CORNER - POND B - LOOKING EAST  
 004 - SOUTHEAST CORNER - POND B - LOOKING NW  
 005 - SOUTHEAST CORNER - POND B - LOOKING N

NOTE: PHOTOS 003 AND 005 ARE CLOSE-UPS OF THE LINER INTERFACE

Stockpile/widrow, 1<sup>st</sup> lift

64 (S)

Yellow/Blue for  
Section line

45.80717 N 108.44666 W  
 45.80714 N 108.44675 W  
 45.80714 N 108.44671 W

(E) 53

Section 2

Section

60 (W)

Yellow for grab

45.80731 N 108.44666 W  
 45.80730 N 108.44680 W

Sample locations

89 (N)

45.80726 N 108.44703 W

Grab Sample Locations

Section	ID	N	W
Section 1	Q1	45.80720 N	108.44687 W
	Q2	45.80720 N	108.44681 W
	Q3	45.80725 N	108.44686 W
	Q4	45.80725 N	108.44691 W
Section 2	Q1	45.80720 N	108.44676 W
	Q2	45.80720 N	108.44669 W
	Q3	45.80726 N	108.44673 W
	Q4	45.80724 N	108.44678 W

## PAGE 3 OF 3

Pond B, 1<sup>st</sup> lift soils (above liner)  
 Sand w/ gravel and cobbles.  
 few asphalt chunks present  
 brown, no odor

## Photo log:

- 006 - Stockpile facing NE  
 007 - Stockpile facing SE  
 008 - Stockpile facing W

note: liner rolled up to expose soil for sampling.

well protection evident in photos

1000 ARRIVE @ LAP (ENERGY ON 27<sup>th</sup> ST)  
TO DROP OFF TODAY'S SAMPLES.

1025 ARRIVE @ BILLINGS OFFICE.

08/16/12

08/20/12

## POND B - EXCAVATION

WX: 80°F; SUNNY; LITTLE BREEZE.

0805 J. BOGADI ONSITE; SIGN IN AT LPI OFFICE; BRIEFING BY LINDA (CPS)

0820 H: S TAILGATE SIGNED (OCS TAILGATE): SIGNED OCS SIGN-IN; TOPICS: HEAVY EQUIP, WASTE LOAD OUT; PPE: SLIPS/TRIPS/FALLS; OCS WILL PROVIDE BOOT COVERS FOR WALKING ON WASTE STOCK PILES; SHELLY YOUNG WILL BE ONSITE SHORTLY TO TAKE NOTES ON THE STATE OF THE CURRENT EXCAVATION OF POND B (DETAILED DEPTHS).

0835 ROBERT (OCS) WALKED THROUGH STOCK PILES; STOCKPILE ESTIMATES FROM ROBERT (OCS):

2-4" = 1385 CY

4-6' = 240 CY

6-8' = 100 CY

NOTE: OCS COMPLETED OVERLADEN EXCAVATION OF POND B ENCOUNTERING THE WASTE LAYER ~~FROM~~ AT VARYING DEPTHS RANGING FROM APPROXIMATELY 4' BSS TO 7 1/2' BSS; TODAY, TRUCKS WILL BEGIN LOADING OUT THE WASTE LAYER FOR DISPOSAL.

0850 SHELLY YOUNG ONSITE; SIGNED IN @ FRONT DESK

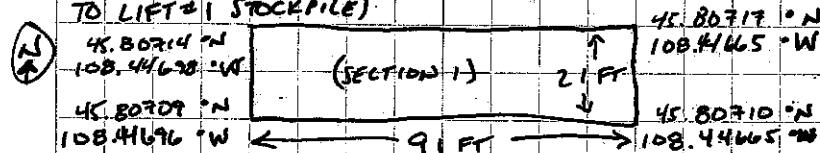
0900 S. YOUNG SIGNED IN WITH OCS (ROBERT); SIGNED TAILGATE; BEGAN WALKTHROUGH WITH LINDA; ROBERT

JLB

## PHOTO LOG:

- Ø13 → 2-4' STOCKPILE #1 LOOKING EAST  
 Ø14 → 2-4' STOCKPILE #2 LOOKING SOUTH  
 Ø15 → 2-4' STOCKPILE #3 LOOKING NORTHWEST  
 Ø16 → 4-6' AND 6-8' STOCKPILES LOOKING NORTH  
 Ø17 → 4-6' AND 6-8' STOCKPILES LOOKING EAST  
 NOTE: ALL STOCKPILES WERE APPROPRIATELY COVERED W/ VISQUEEN OVERNIGHT.

2-4' (LIFT #2) STOCKPILE #1 (LOCATED ADJACENT TO LIFT #1 STOCKPILE)

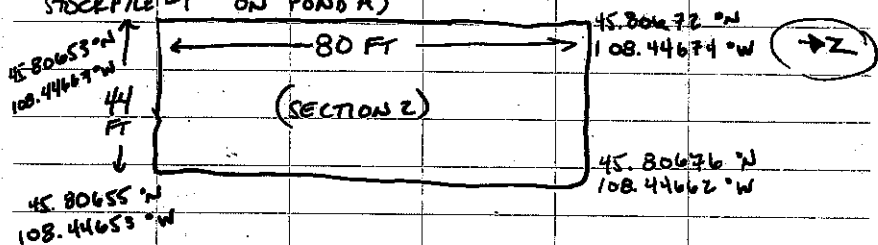


## SECTION 1 GRAB SAMPLE LOCATIONS:

Q1 45.807<sup>12</sup>°N 108.446<sup>90</sup>°WQ2 45.807<sup>14</sup>°N 108.446<sup>72</sup>°W

NOTE: LIFT 2, SECTION 1 STOCKPILE IS IN TWO SEPARATE LOCATIONS IDENTIFIED AS 2-4' (LIFT #2) STOCKPILE #1 AND 2-4' (LIFT #2) STOCKPILE #3; Q1: Q2 WILL BE COLLECTED FROM STOCKPILE #1 AND Q3: Q4 WILL BE COLLECTED FROM STOCKPILE #3.

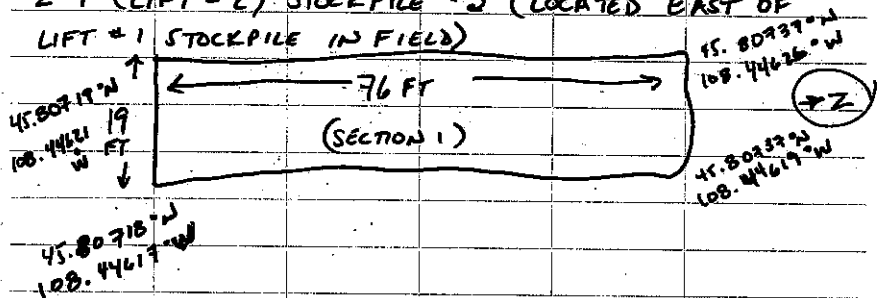
2-4' (LIFT # 2) STOCKPILE # 2 (LOCATED SOUTH OF STOCKPILE # 1 ON POND A)



SECTION 2 GRAB SAMPLE LOCATIONS:

- Q1 45.80671°N 108.44665°W  
 Q2 45.80663°N 108.44662°W  
 Q3 45.80659°N 108.44669°W  
 Q4 45.80669°N 108.44669°W

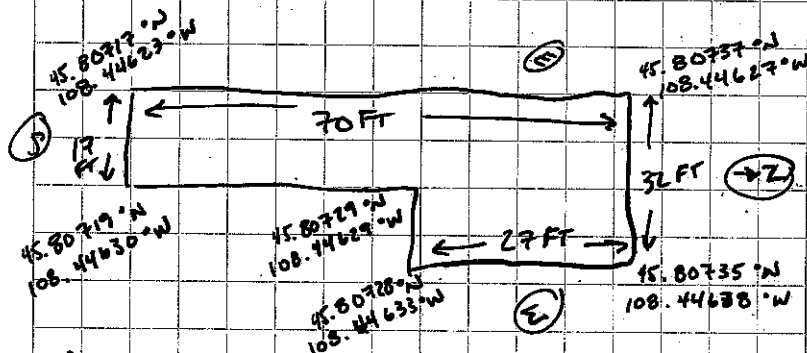
2-4' (LIFT # 2) STOCKPILE # 3 (LOCATED EAST OF LIFT # 1 STOCKPILE IN FIELD)



SECTION 1 (CONTINUED) GRAB SAMPLE LOCATIONS:

- Q3 45.80723°N 108.44624°W  
 Q4 45.80735°N 108.44625°W

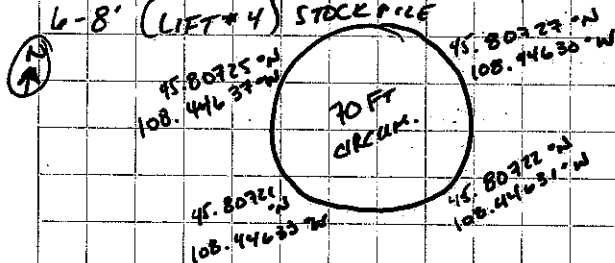
4-6' (LIFT # 3) STOCKPILE



GRAB SAMPLE LOCATIONS:

- Q1 45.80736°N 108.44630°W  
 Q2 45.80736°N 108.44627°W  
 Q3 45.80727°N 108.44625°W  
 Q4 45.80720°N 108.44621°W

6-8' (LIFT # 4) STOCKPILE



GRAB SAMPLE LOCATIONS:

- Q1 45.80722°N 108.44633°W  
 Q2 45.80724°N 108.44630°W  
 Q3 45.80726°N 108.44632°W  
 Q4 45.80726°N 108.44636°W

## SAMPLES COLLECTED:

B-LZ-C1 @ 1030  
 B-LZ-C2 @ 1055      DUPLICATE TAKEN  
 B-L3-C1 @ 1105  
 B-L4-C1 @ 1120  
 B-LZ-C2-D @ 1055 (NAME OF DUPLICATE)

## PHOTO LOG (S. YOUNG):

Ø18 - POND B - WASTE LOADING (SW)  
 Ø19 - POND B - WASTE LOADING (W)  
 Ø20 - POND B - DEPTH TO WASTE 4' TO 7½' (SW)  
 Ø21 - POND B - SE CORNER - WASTE 7½' (W)  
 Ø22 - POND B - SW BOUNDARY FACING NE  
 Ø23 - POND B - SW CORNER FACING NE  
 Ø24 - POND B - SW CORNER FACING N  
 Ø25 - POND B - SW CORNER FACING E

NOTE: SHELLY YOUNG COMPLETED HER WALKTHROUGH WITH ROBERT (OCS) ; LINDA (CPS) AND HAS A DRAWING OF THE EXCAVATION (DETAILING THE DEPTH OF THE WASTE LAYER) SKETCHED IN HER NOTEBOOK.

- SHELLY WAS OFFSITE (SIGNED OUT OF BOTH OCS'S LOG ; LPI'S VISITOR LOG) @ ~ 1030 AM.

NOTE: DISPOSABLE PPE ; DECON WATER WAS DISPOSED OF IN DESIGNATED 55-GAL DRUM ONSITE.

## PAGE 6 OF 6

1210 J. BOGARDI SIGNED OUT W/ ROBERT (OCS)  
 ; @ LPI FRONT OFFICE.  
 1225 DROPPED SAMPLES OFF AT ENERGY LABS.  
 1235 ARRIVE @ BILLINGS OFFICE

*Robert*  
 08/20/12

16

CPS-LPI BILLINGS

POND 'A' - EXCAVATION

08/24/12

WX: 70°F; SUNNY

0740 J. BOGADI ONSITE; MET ROBERT (OCS) @

SCALES TO SIGN-IN TO JOB AREA; REVIEW / SIGN

TAILGATE: SLIPS/TRIPS/FALLS, BEES, HYDRATION; :

HEAVY EQUIP OPS; LIFT 1 (0-2') HAS BEEN

COMPLETED → TODAY = 5 MORE TRUCKS/PUPS

LOAD OUT OF POND 'B' WASTE; THEN CONTINUE

@ POND 'A' WITH TOP LINER REMOVAL.

0755 POND 'A' STOCKPILE (LIFT 1) IS

LOCATED EAST OF THE POND B STOCKPILES

IN THE FIELD (EAST) OF THE EXCAVATIONS.

## PHOTO LOG:

026 - POND A - STOCKPILE LIFT 1 (0-2') - NORTH

027 - POND A - STOCKPILE LIFT 1 (0-2') - WEST

028 - POND A - STOCKPILE LIFT 1 (0-2') - NORTHWEST

NOTE: STOCKPILE - LIFT 1 = 640 CY.

## GRAB SAMPLE LOCATIONS:

Q1 = 45.80727°N 108.44597°W

Q2 = 45.80762°N 108.44630°W

Q3 = 45.80730°N 108.44585°W

Q4 = 45.80737°N 108.44582°W

SAMPLE ID = A-LI-C1 @ 0845

NOTE: DECIDU WATER; DISP. PPE DISPOSED OF  
ONSITE IN 55-GAL DRUM

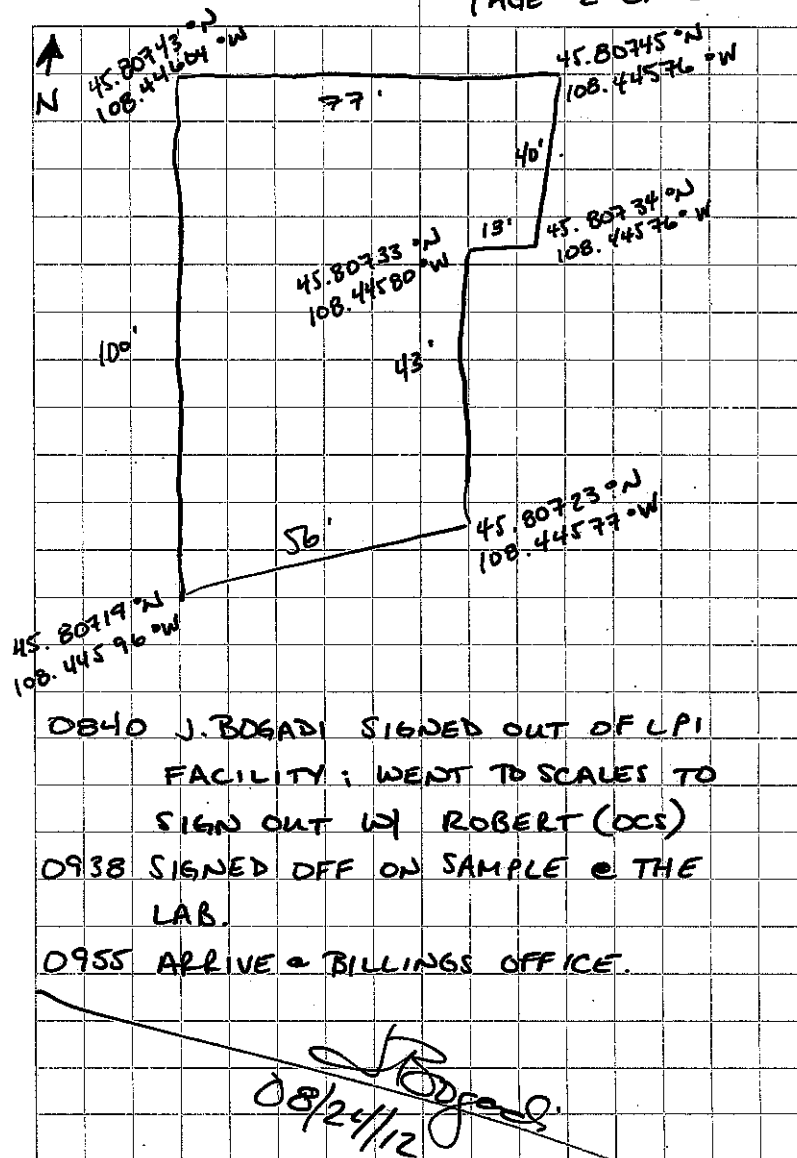
PHOTO: 029 - POND B - EXCAVATION - FACING NW

PAGE 1 OF 2

JCB

PAGE 2 OF 2

17



08/27/12

## POND A EXCAVATION

WX: 70°F; MOSTLY SUNNY

0745 J. BOGADI ONSITE @ LPI; SIGN IN @ FRONT OFFICE.

0755 @ SCALE TO SIGN IN W/ ROBERT (OCS); GET WEEKEND DEBRIEF; HIS TAILGATE;

• LIFT # 2 (2-4') = 622 CY

• LIFT # 3 (4-5') = 222 CY

• WASTE FAIRLY UNIFORM ACROSS POND 'A' @ ABOUT 5 FT BGS (APPROX. 2 FT THICK)

• SWITCHED WASTE LOAD OUT TO POND 'A' FROM POND 'B' DUE TO VOLUME OF WASTE; TRUCKS AVAILABLE; AFTER WASTE LOAD OUT OF POND 'A' IS COMPLETE, OCS WILL BEGIN BACKFILL OF POND 'A' CONCURRENT WITH POND 'B' WASTE LOAD OUT.

## PHOTO LOG:

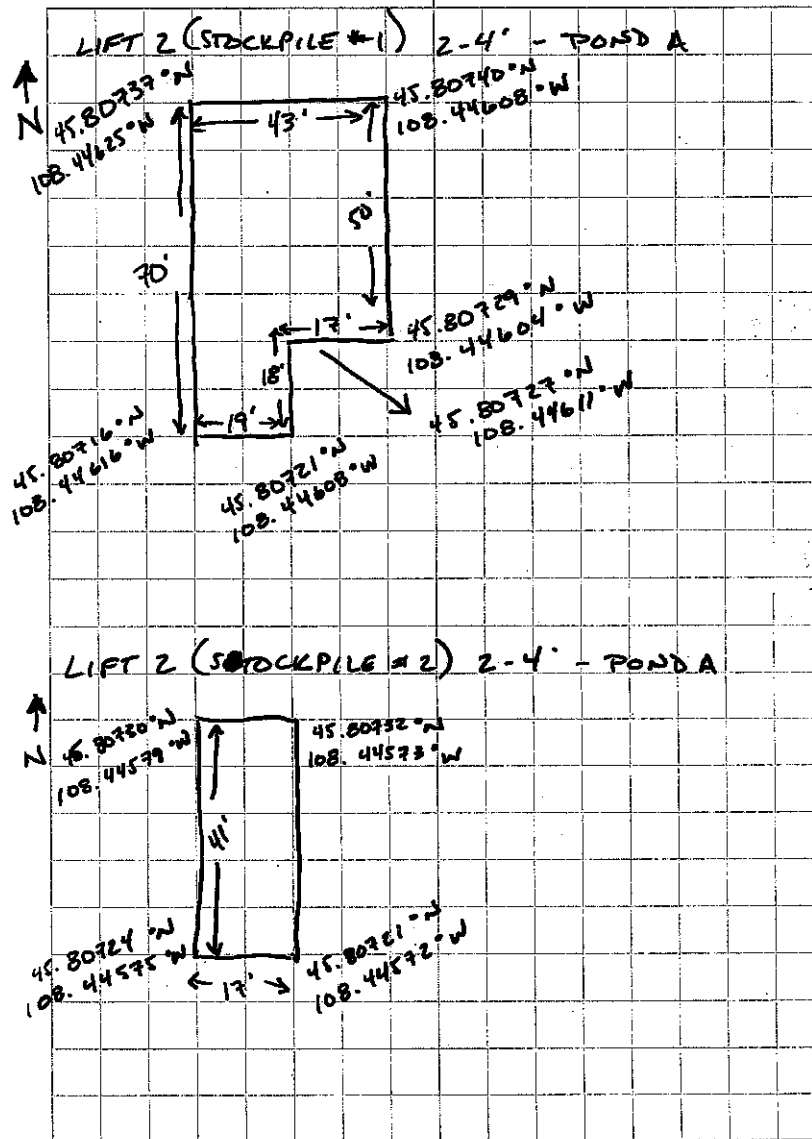
- POND A - LIFT 2 - STOCKPILE 1 - N
- POND A - LIFT 2 - STOCKPILE 1 - NW
- POND A - LIFT 2 STOCKPILE 2 : LIFT 3 - N
- POND A - LIFT 2 STOCKPILE 2 : LIFT 3 - SW

## GRAB SAMPLE LOCATIONS:

LIFT 2 : Q1 45.80725°N 108.44614°W  
 Q2 45.80732°N 108.44615°W  
 Q3 45.80734°N 108.44610°W  
 Q4 45.80725°N 108.44575°W

SAMPLE ID = A-L2-C1 @ 0905

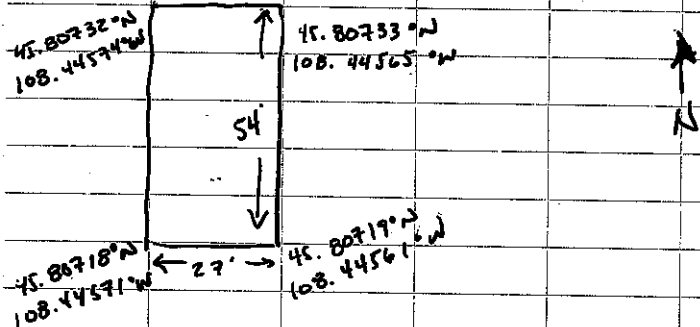
PAGE 1 OF 3



PAGE 2 OF 3

Pete in the Rain

LIFT 3 - POND A - (4.5') STOCKPILE



SLAB SAMPLE LOCATIONS:

- LIFT 3: Q1 45.80722°N 108.44568°W  
 Q2 45.80724°N 108.44566°W  
 Q3 45.80727°N 108.44569°W  
 Q4 45.80728°N 108.44569°W

SAMPLE ID = A-L3-C1 @ 0930

NOTE: DISPOSABLE PPE; DECON WATER WERE

DISPOSED OF ONSITE IN 55-GAL DRUM.

0952 SIGNED OUT W/ ROBERT (OCS)

1005 SIGNED OUT @ LPI OFFICE AFTER TALKING BRIEFLY TO DIANA (LPI).

1019 DROPPED SAMPLES OFF @ ENERGY LABS.

1040 J. BOGADI @ BILLINGS OFFICE;

BRIEF SHELLY YOUNG ON TODAY'S ACTIVITIES.

*J. Bogadi*  
 08/27/12

CPS-LPI BILLINGS

Pond A Sampling

8/31/12

Page 1 of 8

WX: 60° F, sunny, calm

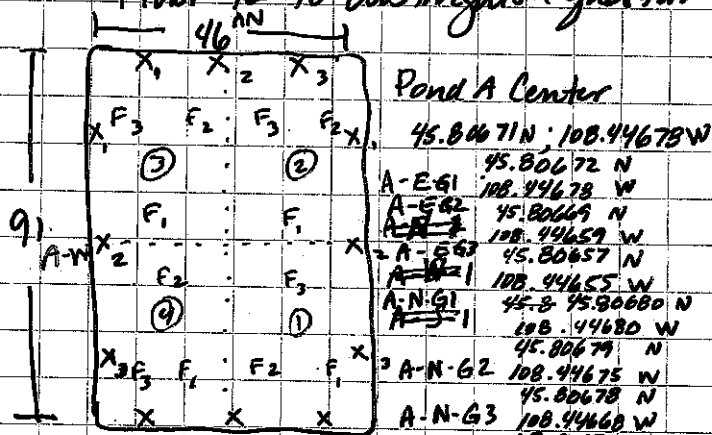
7:35 Signed into facility.

Prepped Sampling materials

8:00 Safety meeting w/OCS

9:11 Started Sampling at Pond A

Robert delineated center of floor for to distinguish quarters



- |        |            |             |        |            |             |        |            |             |
|--------|------------|-------------|--------|------------|-------------|--------|------------|-------------|
| A-F1-1 | 45.80661 N | 108.44651 W | A-F3-1 | 45.80669 N | 108.44671 W | A-W-G2 | 45.80666 N | 108.44677 W |
| A-F2-2 | 45.80660 N | 108.44659 W | A-F3-2 | 45.80677 N | 108.44673 W | A-W-G3 | 45.80678 N | 108.44675 W |
| A-F1-3 | 45.80667 N | 108.44659 W | A-F3-3 | 45.80678 N | 108.44677 W | A-S-G1 | 45.80653 N | 108.44669 W |
| A-F2-1 | 45.80671 N | 108.44659 W | A-F4-1 | 45.80659 N | 108.44666 W | A-S-G2 | 45.80655 N | 108.44662 W |
| A-F2-2 | 45.80678 N | 108.44661 W | A-F4-2 | 45.80663 N | 108.44672 W | A-S-G3 | 45.80654 N | 108.44656 W |
| A-F2-3 | 45.80677 N | 108.44667 W | A-F4-3 | 45.80655 N | 108.44678 W |        |            |             |

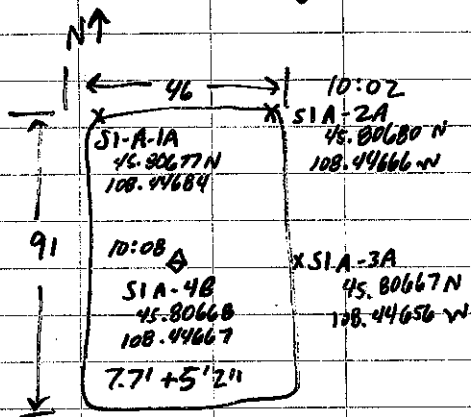
*Robert*

8/31/12

page 2 of 8

## Photos

- 100-005 Pond A Facing SW  
 006 A-N wall, facing W  
 007 A-W wall, facing S  
 008 A-S wall, facing E  
 009 A-E wall, facing N  
 010 A-F-1, facing E S  
 011 ~~A-F-2~~ <sup>54</sup> facing A-F-1, grab 3  
 012 A-F-2 facing N  
 013 A-F-2 grab 1  
 014 A-F-3 facing N  
 015 A-F-3 grab 1  
 016 A-F-4 facing S  
 017 A-F-4 grab 2  
 018 A-F-4 grab 3, staining + odor



(87)

8/31/12

page 3 of 8

## SAMPLES COLLECTED:

- S1A-2A @ 1002  
 S1A-3AD @ 1011  
 S1A-4B @ 1008  
 S1A-3A @ 1015  
 S1A-1A @ 1018

## Photos

- 019 SWMU-6 sample S1A-1A  
 020 SWMU-6 sample S1A-2A  
 021 SWMU-6 sample S1A-3A  
 0202 Pond B, NE corner  
 023 Pond B, facing NW from SE corner  
 024 Pond B, facing N from SE corner  
 025 Pond A, facing NE from NE corner

- 0810 Set up at Pond A. Entered excavation to conduct sampling. Robot from 005 marked center of side walls for floor sample division.  
 0818 Staked sidewall sampling locations.  
 0818 Collected composite sample A-S-N-1 from north end wall.  
 Scraped ~~the~~ surface 1-2" soil away note in Jeff's log

8/31/12

Page 4 of 8

prior to collecting soil from each grab sample location. Soil was brown, no odor, silty sand w/ some rounded gravel. Small pieces of gray material (~2 mm D) present at G1 and G2 locations.

0824 Collected composite sample A-S-W-1 from western wall of excavation.

Same method as above. Same soil type as above. Soil at G1 location had small pieces of white material (~2 mm D)

0828 Collected composite at A-S-S-1 from southern end of excavation.

Same method and soil type as above.

0833 Collected composite at A-S-E-1 from <sup>the eastern</sup> ~~southern~~ end of excavation.

Same method and soil type as above.

\*\* All sidewall samples collected ~ 1ft up sidewall from bottom of excavation.

\*\* Bottom of excavation approx. 7.7ft bgs.

0835 Staked grab sample locations for floor samples.

0840 Collected composite sample A-F-1 from southeast quadrant.

(S)

8/31/12

Page 5 of 8 25

Grab samples were collected <sup>55</sup>

Soil was collected at each grab sample location after scraping away top 1 inch of soil. Additional soil may have been scraped away if grab sample location was in a spot with ~~additional~~ soil that had been disturbed by excavation activities (i.e. fluff soil from spilled from the backhoe bucket). Soil was placed into 1 gallon ziplock bag to composite prior to transfer into 4oz. jar. Soil was brown, no odor, silty sand at all 3 grab sample locations.

0844 Collected composite sample A-F-2 from northeast quadrant.

Same collection method and soil type as above.

0848 Collected composite sample A-F-3 from Northwest quadrant. Same collection method and sample type as above.

(S)

Rite in the Rain

8/31/12

Page 6 of 8

0851 Collected composite sample A-F-4 from the southwest quadrant. Sample collection method and soil type as above with the exception of staining and moderate odor noted in southwest corner of quadrant.

0855 Collected duplicate sample at A-F-4, named A-F-4D

0858 Relinquished samples under chain of custody to Diana Grassel for delivery to lab. Samples placed on ice in cooler. Cooler sealed w/ a signed custody seal.

080930 Samples delivered to Energy Laboratory for analysis of 2,4-D by modified method 8151.

0900 J. Young collected GPS coordinates of sample locations.

Sample locations for SWMN-6/RI

samples were measured and staked. (See figure on page 2).

Called J. Bogadi at AECOM office to request her to bring the hand auger from the office to

next page →

8/31/12

Page 7 of 8<sup>27</sup>

collect the sample from the center of the excavation, SI A-4B, just above the water table.

0955 J. Bogadi arrived at site w/ hand auger. OCS used auger to drill down to a depth 5 ft 2 inches below bottom of excavation and into moist soil.

1002 Collected RI sample SI A-2A from ~4 to 6 ft bgs (measured from bottom of excavation). Top 1-2 inches of soil was scraped away prior to collection.

Soil was collected from sidewall using a stainless steel spoon and placed directly into sample jar. Soil was brown silty sand with gravel. No odor.

1008 Collected RI sample SI A-4B from the center of the excavation. Sample collected by dumping soil from hand auger bucket into a 1 gallon ziplock then transferring to the 4 oz. sample jar. Soil

Wet in the Rain  
over →

8/31/12

Page 8 of 8

was moist, grayish brown, sand.

No odor. Bore hole was backfilled by placing cuttings back in the hole.

1011/ Collected composite sample SI A-3AD

1015 (Duplicate sample) and SI A-3A from 4 to 6 ft bgs (measured from bottom of excavation). Same sampling method and soil type as SI A-2A.

1018 Collected composite sample SI A-1A.

Same depth, collection method, and soil type as above.

1020 Removed sampling equipment from Pond A. Took photos, talked to DiGravel and R. Wilkerson prior to leaving site.

1050 Signed out of OCS log book.

1055 Signed out of facility.

1110 Delivered samples on ice and under Chain-of-Custody to Energy Laboratories.

1120 Returned to office.

~~OB/31/12~~ ~~Styung~~

9/18/12

Page 1 of 3

Weather, ~70° F, breeze, sunny

1130 Sign into Loveland Facility.

1135 Met with Diana, OCS and PLE

To discuss collection of sample from Test Pit 1 on cell c.

Signed into OCS daily log book + safety meeting.

Obtained chemical resistant Tyvek and rubber boots to wear for sample collection.

Per OCS / PSC:

Excavator used to clear from ground surface to top of waste.

Top of waste encountered in Test Pit 1 at approx. 5 ft bgs

Depth of waste ~ 9.5 ft bgs to bottom liner.

PSC able to air knife down to bottom without using power sprayer.

Gravel encountered in hole at waste layer, 5 ft bgs.

~~Styung~~

Rite in the Rain

9/10/12

page 2 of 3

- 1145 PSC dumped vacuum tank onto waste pile at Pond B  
Grab samples, 7, collected from pile. wet soil/waste material with gravel. Odor.  
Sample labeled C-1TP.  
Decanned spoon on waste pile.  
Doffed PPE, ~~left~~ put sample on ice in cooler.
- 120 Signed out of facility. Returned to office.
- 1400 Returned to LPI. Signed in at office ~~and~~ and headed back to SI area.  
- Ann Kren with MDER on site observing pot holing at Test Pit 2.
- 1550 Liner not yet reached at Test Pit 2.  
PSC to start use of 4000 PSI pressure washer to loosen material.  
I left site and returned to office.  
Photos for day included the following:
- 0026 Test Pit C-1, opened with excavator to top of waste. Pot hole on left (w end)

page 3 of 3

- 0027 Test Pit C-1 looking down at pot hole
- 0028 Cuttings from pot hole C-1 Composite sample C-1TP ~~collected~~ collected from cuttings
- 0029 Air knife truck + PSC crew working on C-2
- 0030 PSC crew working on C-2
- 0031 Test pit ~~at~~ C-3
- 0032 Test pit ~~at~~ C-6
- 0033 Test pit C-6
- 0034 Test pit C-5 (no waste encountered before bottom liner.
- 0035 Test pit C-5 facing NE
- 0036 Air knife truck and PSC crew working on C-2 (facing S)
- 0037 Test pit C-4
- 0038 Test pit C-4 facing NE
- 0039 Test pit C-1. Pot hole filled with water
- 0040 Test pit C-2, open. Pot hole (bottom liner not yet reached)

Stjornung 9/10/12

Pete in the Rain

09/19/12

page 1 of 2

WX - ~50° F, calm, clear

0640 Arrived at LPE. Front office is closed. Signed into OCS log book. PSC reached liner at Test Pit 2 at ~10 ft bgs. on 9/18/12. PSC dumped vac tank near Cell B waste pile.

0650 Collected composite sample C-2TP from 7 grab samples. Deconned spoon on waste pile

0655 Signed out of facility.  
(note: soil from TP2 wet, sandy with gravel + some clay content. Dark brown/gray.)

0705 Left facility and headed back to office after updating notes.

1020 Returned to LPE. Signed in at front desk and headed to SE area.

1030 Collected sample C-3TP  
Cuttings (soil similar to previous location (C-2)).

1035 Signed out of OCS log book.

09/19/12

page 2 of 2

1050 Logged out of facility.  
1105 Dropped samples C-1TP, C-2TP and C-3TP off at Energy  
1120 Signed into LPE  
1125 Signed into OCS Log book  
1135 Collected Sample C-4TP.  
1145 Signed out of OCS log book  
1150 Signed out of facility and returned to office.

Photos for the day included the following:

0041 Soil cuttings from C-3TP  
0042 Unclose soil cuttings from C-3TP. Placed on top of soil cuttings from C-2TP  
0043 Pot holes at C-3  
0044 Soil cuttings from C-4TP  
0045 Pot hole at C-4

~~S. Jones  
09/19/12~~

Rite in the Rain

09/20/12

page 1 of 2

WX Clear, calm, ~55° F

- 0803 Signed in at facility. Headed back to work area. Signed CPS book
- 0810 Collected sample C-6TP after PSC emptied tank.
- 0815 Collected duplicate sample C-6TPD. Collected soil from approx. 7 locations placed equal amounts from each grab location into parent and duplicate sample jars.
- Soil sandy/bitty with gravel. Wet.
- 0920 Signed out of facility after taking photos with Robert Norm OCS and Diana Gravel with LPI. Last trucks from Pond B estimated to be loaded on Saturday. Pond B confirmation samples will tentatively be collected Saturday afternoon or Monday. Lab cannot do a 24-hr turnaround on any samples received after 10 am on Friday.
- 0935 Dropped samples C-4TP, C-6TP, and C-6TPD off at Energy Labs and returned to office
- St Johns*

9/20/12

page 2 of 2

Photos for the day included the following:

- ~~0046~~ 0046 PSC dumping cuttings from the pothole at C-6 onto visqueen placed just North of the waste pile at Pond B.
- 0047 Pond B from NW corner, facing SE
- 0048 Pond B from SW corner, facing NE
- 0049 Pond B from SE corner, facing NW
- 0050 Pond B from NE corner, facing SW.
- 0051 Waste pile on north end of Pond B
- 0052 Cuttings from C-6 pothole

*St Johns* 09/20/12

*Retire in the Rain*

09/25/12

page 1 of 6

~~0835~~ Signed into LPI front office. Headed back to SI area.

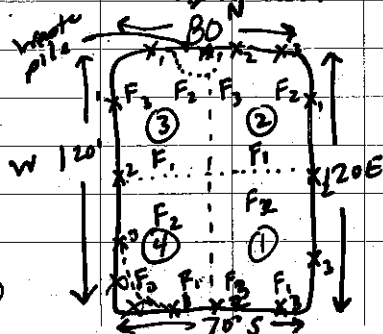
Waste had been loaded by OCS out of pond B for all trucks for the day. Approximate 1-2 truckloads of waste remained in place.

Bottom of excavation had been back-scraped by OCS.

0854 Placed call to Ann Kron with MDEA to request permission to collect samples as all sampling points were accessible. No answer, left message.

Proceeded to measure base of Cell B and staked locations.

0921 Followup call placed to Ann Kron. She answered and approved sample collection.



Note: due to dry/hard soil, a shovel was used to clear "overburden" prior to collecting grab samples w/ spoon

9/25/12

page 2 of 6

0935 Collected sample B-S-N-1 from north end of excavation "Center" grab sample ( $x^2$ ) collected ~5 ft E of center. Brown sandy silt. Dry.

0940 Collected sample B-S-E-1 from east sidewall of excavation. Soil similar to above.

0944 Collected sample B-S-S-1 from south sidewall of excavation.

0947 Collected sample B-S-W-1 from west sidewall of excavation.

0950 Collected composite sample B-F-3 from NW quadrant of the floor.

0954 Collected sample B-F-4 from SE quadrant of the floor. Soil type was sand with silt. (Significantly greater sand content from other locations).

0958 Collected duplicate sample B-F-4D from B-F-4. Grab samples were mixed in a baggie and <sup>soil was</sup> split between the parent + duplicate samples.

9/25/12

page 3 of 6

- 1001 Collected sample B-F-1 from the SE quadrant of the floor.
- 1005 Collected sample B-F-2 from the NE quadrant of the floor.

Note: samples were collected by placing soil from grab samples from each area into a Ziplock bag. After all 3 grab samples were added, the bag was closed. Bags were labeled with the sample locations. All four sidewall samples were collected in the bags then were placed in sample jars. The floor samples were then collected in a similar fashion. The bags for B-F-1 and B-F-4 were mixed up during collection. However, due to the additional sample volume collected for a duplicate sample and the higher sand content, it was clear which sample quadrants were correct and appropriate.

(2)

9/25/12

page 4 of 6

- Sample containers were filled.
- 1025 Chain of custody for the 2,4-D samples was filled out. Samples were relinquished to Derek Harp (LPI) for delivery to Energy Labs.
- Proceeded to collect GPS coordinates, take photos, and collect samples for SWMU-61 RA determination.
- 1045 Used hand auger to collect soil from saturated zone just above water table. Sample SI-B-3B collected from 3-3.7 ft bgs (bottoms of excavation) Dark grey/dark brown, wet, silt.
- 1100 Collected sample <sup>SI</sup>B-2A from 4 to 6 ft bgs on western sidewall of the excavation.
- 1105 Collected duplicate SI-B-2AD from SI-B-2A to soil ~~comp~~ grab.
- 1109 Collected sample SI-B-1A from western sidewall of the excavation from 4-6 ft bgs.

Note in the rain.  
(2)

9/25/12

page 5 of 6

Completed collecting GPS coords + photos. See below:

acb = above excavation base.

	BSW1	45.80672 N 108.44727 W	B-F-1-1	45.80655 N 108.44695 W
	BSW2	-.80664 N -.44724 W	B-F-1-2	-.80662 N -.44698 W
n/3 ft acb	BSW3	-.80655 N -.44720 W	B-F-1-3	-.80655 N -.44699 W
n/4 ft acb	BSS1	-.80647 N -.44690 W	B-F-2-1	45.80672 N 108.44701 W
n/3 ft acb	BSS2	-.80645 N -.44698 W	B-F-2-2	-.80680 N -.44701 W
<del>n/3</del> n/3	BSS3	-.80647 N -.44708 W	B-F-2-3	-.80679 N -.44709 W
<del>n/5</del> n/5	BSE1	45.80676 N 108.44695 W	B-F-3-1	45.80670 N 108.44717 W
<del>n/5</del> n/5	BSE2	-.80666 N -.44692 W	B-F-3-2	-.80676 N -.44714 W
<del>n/5</del> n/5	BSE3	-.80654 N -.44688 W	B-F-3-3	-.80674 N -.44723 W
n/4.5	BSN1	-.80679 N -.44724 W	B-F-4-1	45.80654 N 108.44703 W
n/5	BSN2	-.80683 N -.44710 W	B-F-4-2	-.80663 N -.44716 W
n/3.5	BSN3	-.80680 N -.44706 W	B-F-4-3	-.80653 N -.44711 W

↑  
2, 4-D Samples,  
Sidewall

↑  
2, 4-D Floor  
Samples

SWMU-6 Sample locations

SI B-1A	45.80663 N 108.44721 W
JIB-2A	45.80676 N 108.44727 W
SI B-3B	45.80666 N 108.44707 W

*Spang*

9/25/12

page 6 of 6<sup>41</sup>

Photo log:

- |                    |  |
|--------------------|--|
| 001                | Pothole C C-6 Test pit                             |
| 002                | Pond B excavated, facing SE                        |
| 003                | Pond B, B-F-1 facing S                             |
| 004                | Pond B, B-F-2, facing NE                           |
| 005                | Pond B, B-F-3, facing NW                           |
| 006                | Pond B, B-F-4, facing SW                           |
| 007                | Pond B, N wall facing NW                           |
| 008                | Pond B, N wall facing WNW                          |
| 009                | Pond B, N wall, remaining<br>waste pile.           |
| 010                | Pond B, N wall, grab location G1                   |
| <del>011</del> 011 | Pond B, W wall facing S                            |
| 012                | Pond B, <sup>South</sup> E wall, facing E          |
| 013                | Pond B, SW SI-B1                                   |
| <del>015</del> 015 | Pond B, SI-B2                                      |
| 016                | Soil cuttings from SI-B-3B                         |
| 017                | Soil boring for SI-B-3B sample<br>collection       |
| 1200               | Signed out of SE LPI facility                      |
| 1215               | Dropped samples off at the<br>lab. Headed to lunch |

*sy* 9/25/12  
All in the Rain

09/26/12  
~~26 09/26/12~~

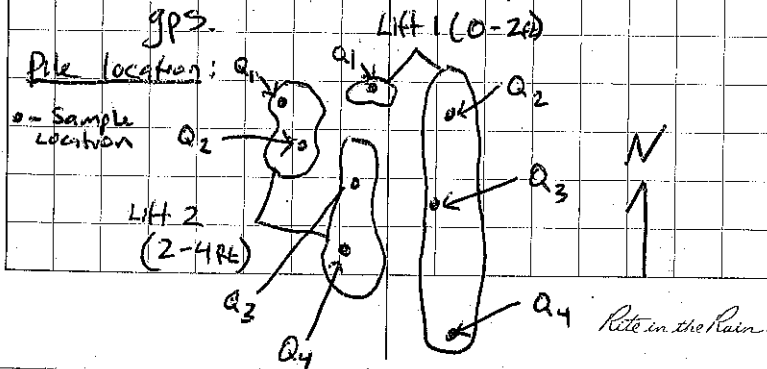
page 1 of 1

- 0815 Received call from OCS to return to LPI to collect confirmation sample, resample from B-F-2 following removal of additional soil.
- 0850 Signed into LPI and headed back to SI area.
- 0915 Collected sample B-F-2R from 2<sup>nd</sup> quadrant. Waste pile was trucked off site, floor prepped for backfilling.
- 0930 Signed out of facility and headed to lab.
- 0942 Relinquished sample at Energy. Returned to office.

~~Sydney  
09/26/12~~

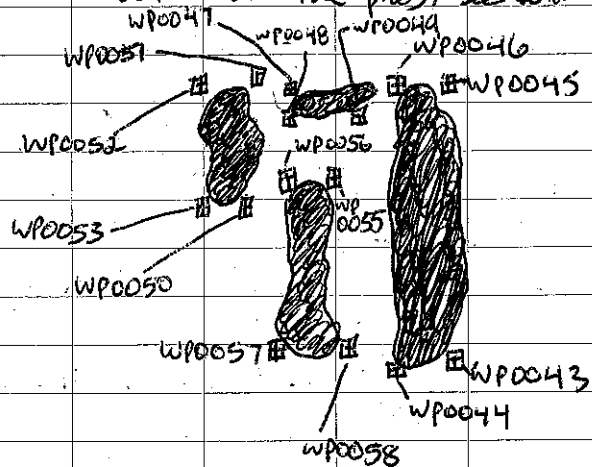
09/28/12

- On site @ 0805
- Signed in at front office and with Roger of OCS
- Did a tailgate safety meeting with Roger + he gave me a quick tour of operations
- Called Jen Bogard to ask questions and get on the same page for sampling technique + procedures.
- Will attack piles as follows
  - There are several piles for each lift (0-2 ft + 2-4 ft)
  - Will split each lift into 4 equal parts (or as equal as I can get them) to get my 4 quadrants
  - Will ~~split~~ flag each grab sample area with a labeled flag after collection
  - Will then mark each pile on the GPS.



- Photo Log:
- 0018 - Photo of piles facing N. 0-2 on right
  - 0019 - Photo of piles facing E. 2-4 in foreground
  - 0020 - Photo of piles facing S. 2-4 on right, 2-4 on left
  - 0021 - Photo of piles facing SE. 0-2 shown
  - 0022 - Photo of piles facing S. 0-2 in foreground, 2-4 in background
  - 0023 - Photo of piles facing SW. 0-2 shown

- Finished taking samples. Sample locations indicated on sketch on previous page. Then took GPS coordinates at the outlines of the piles. See Colman sketch



- Signed out with Roger + Front Desk. off site @ 1045.

*John*

## POND C EXCAVATION

WX: 60°F; SUNNY

0755 J. BOGADI ONSITE, SIGN IN AT FRONT

OFFICE; MET ROBERT (OCS) @ TRUCK

SCALES - SIGNED IN W/ OCS; SIGNED

USA (SAFETY TAILGATE); 2 STOCKPILES TO

SAMPLE: 0-2' = 500 CY AND 2-4' = 3000 CY.

## PHOTOS:

024 POND C STOCKPILES - NE

025 POND C STOCKPILES - E

026 POND C STOCKPILES - NNW

NOTE: LIFT 1 (0-2') LOCATED CLOSEST TO FENCELINE (NORTH)

LIFT 2 (2-4') LOCATED CLOSEST TO BUILDINGS (SOUTH)

## GRAB SAMPLE LOCATIONS:

LIFT 2: Q1 45.80717°N 108.44578°W  
 Q2 45.80716°N 108.44578°W  
 Q3 45.80722°N 108.44573°W  
 Q4 45.80724°N 108.44571°W

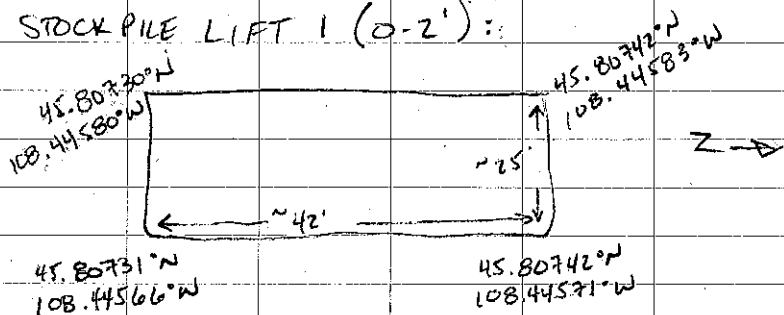
SAMPLE ID = C-L2-C2 @ 0855

LIFT 1: Q1 45.80731°N 108.44578°W  
 Q2 45.80732°N 108.44576°W  
 Q3 45.80734°N 108.44580°W  
 Q4 45.80736°N 108.44575°W

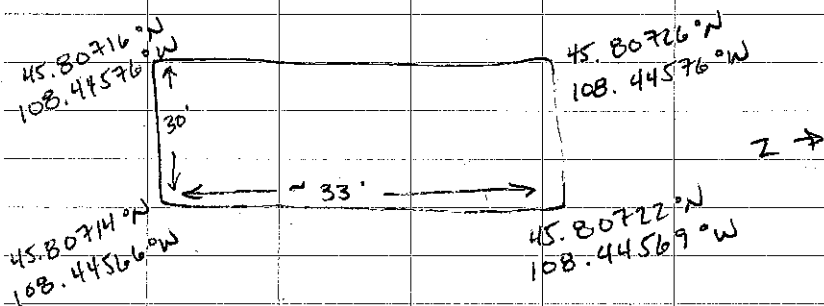
SAMPLE ID = C-L1-C2 @ 0925

*Rite in the Rain.*

## STOCKPILE LIFT 1 (0-2'):



## STOCKPILE LIFT 2 (2-4'):



NOTE: DISPOSABLE PPE & DECON WATER WERE DISPOSED OF ONSITE IN DESIGNATED 55-GAL DRUM.  
OJSS SIGNED OUT @ FRONT OFFICE WITH ROBERT (OCS); MOB TO LAB TO DROP OF SAMPLES.

*Robert*  
10/2/12

CPS - LPI BILLINGS  
POND C - EXCAVATION

10/9/1247

WK: 45°F; CLOUDY; BREEZY

0805 J. BOGADI ON SITE @ TRUCK SCALE;

MET DAVID (OCS FOREMAN IN FOR ROBERT THIS WEEK); SIGNED H:S

TAILGATE: SIGN IN FORM; 2 STOCKPILES TO SAMPLE TODAY (WASTE LOADOUT IS ONGOING: THIS IS LAST OF OVERBURDEN); SIGNED IN @ FRONT DESK OF LPI OFFICE @ 0825.

PHOTOS:

027 STOCKPILE LIFT #2 - LOOKING N

028 STOCKPILE LIFT #1 - LOOKING NE

GRAB SAMPLE LOCATIONS:

LIFT 1: Q1 45.80719°N 108.44588°W  
Q2 45.80723°N 108.44590°W  
Q3 45.80729°N 108.44586°W  
Q4 45.80730°N 108.44589°W

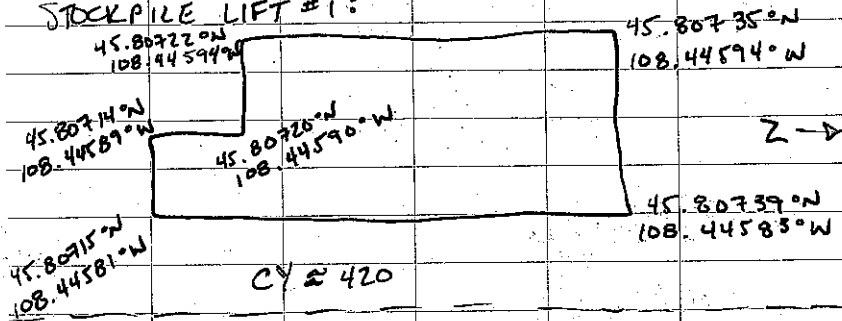
SAMPLE ID = C-L1-S3 @ 0845

LIFT 2: Q1 45.80719°N 108.44597°W  
Q2 45.80724°N 108.44603°W  
Q3 45.80728°N 108.44599°W  
Q4 45.80735°N 108.44611°W

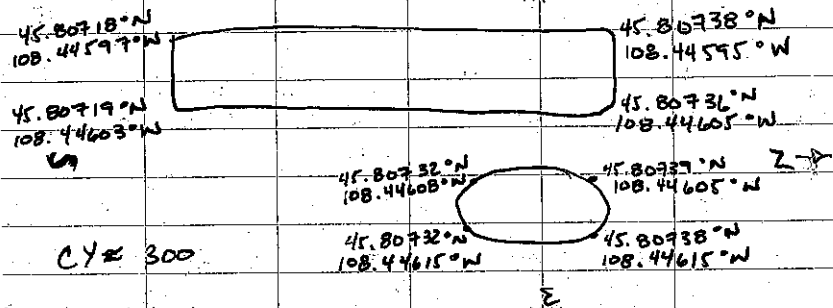
SAMPLE ID = C-L2-S3 @ 0900

PAGE 1 OF 2 *Write in the Rain.*

STOCK PILE LIFT # 1:



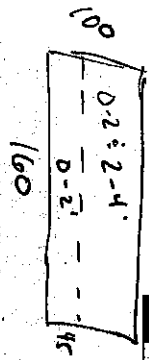
STOCK PILE LIFT # 2:



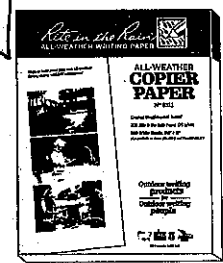
NOTE: BACKFILLING OF POND B IS COMPLETE.  
 NOTE: DISPOSABLE PPE & DECON WATER WERE  
 DISPOSED OF ON SITE IN DESIGNATED 55-GAL.  
 STEEL DRUM

0955 J. BOGARDI SIGNED OUT W/ DAVID (OCS):  
 LPI MAIN OFFICE  
 1010 DROPPED SAMPLES OFF @ ENERGY LABS  
 1030 ARRIVE @ RECON OFFICE

*J. Bogardi*  
 10/9/12



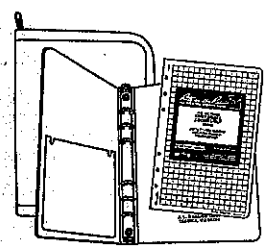
Outdoor writing products  
 for Outdoor writing people



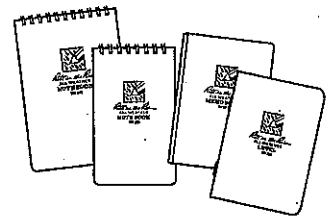
Copier & Ink-Jet Paper



Bound Books



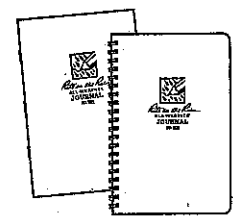
Loose Leaf  
 with Ring Binder



Memo Books



All-Weather Pens



Notebooks

RiteintheRain.com



## CPS-LPI Billings

Pond C Excavation

10/22/12

WX - 45°F, Overcast, calm

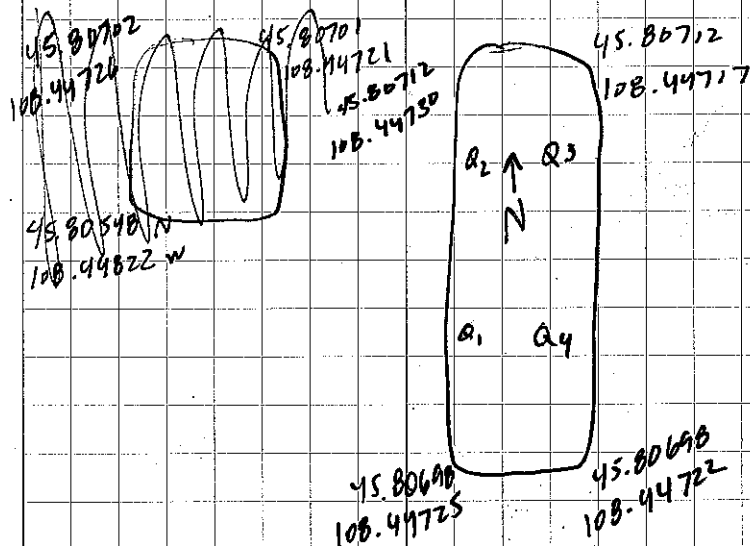
page 1 of 2

0930 Signed in at LPI main office

0940 Met with Robert of OCS. Signed into safety meeting and OCS Log book.

Turned on GPS unit.

Q1	45.80704	108.44727
Q2	45.80707	108.44728
Q3	45.80708	108.44724
Q4	45.80704	108.44723



Rite in the Rain

10/22/12

Page 2 of 2

Photos

- 0029 Stockpile, W end Lull C, facing N  
 0030 Stockpile, facing SE  
 0031 Stockpile, facing SW  
 0032 Stockpile, facing N

- 1035 Signed out of facility. Took samples to Energy  
 1050 Dropped samples off at Energy lab. Returned to Office

10/22/12

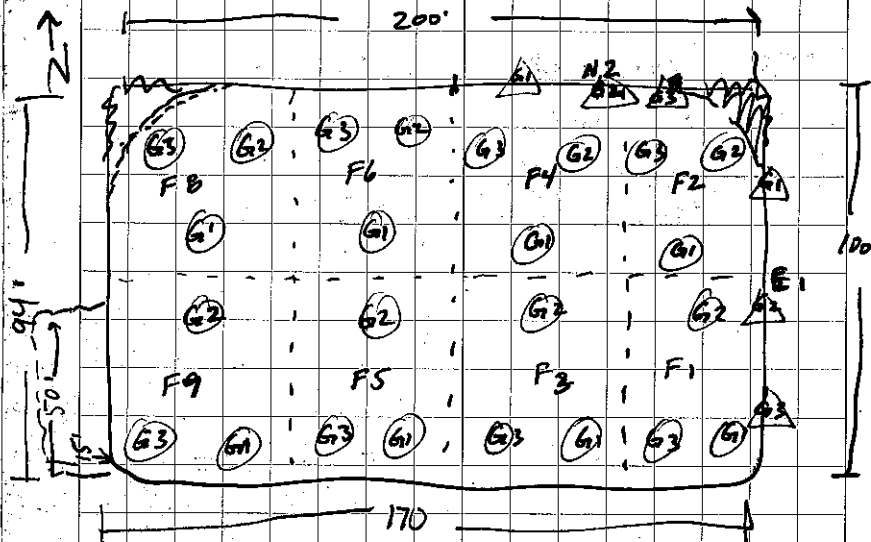
10/23/12

CPS-LPI Billings

Pond C - Excavation Confirmation Sampling  
 WX - 50°F, Clear, S. Breeze

1415 Signed into LPI facility

1425 Measured Pond C. Staked  
 Sampling Locations



Note: ~~Start~~ Started Sampling  
 Quadrants F-2 + F-4  
 while waste was being loaded  
 out of S side wall.

Rite in the Rain

10/23/12

page 2 of 4

C-F-2-G1	45.80710 N	108.44666 W
C-F-2-G2	45.80716 N	- .44660 W
C-F-2-G3	- .80715 N	- .44673 W
C-F-4-G1	- .80708 N	- .44684 W
C-F-4-G2	- .80713 N	- .44682 W
C-F-4-G3	- .80712 N	- .44691 W
C-S-N2-G1	.80716 N	.44690 W
C-S-N2-G2	- .80718 N	- .44682 W
C-S-N2-G3	- .80718 N	- .44675 W
N Wall Midpnt	- .80716 N	- .44695 W
N Wall 2-4 midpnt	.80719 N	- .44678 W
F Midpnt	- .80705 N	- .44693 W
C-S-E-G1	- .80712 N	- .44660 W
C-S-E-G2	- .80709 N	- .44658 W
C-S-E-G3	- .80703 N	- .44660 W
E <sup>wall</sup> Midpnt	- .80710 N	.44659 W
F E Midpnt	- .80709 N	- .44675 W

1536 Collected Sample C-S-E-1 from eastern wall of excavation - Brown, silty sand, ~~hard~~ firm.

1540/ Collected Sample C-S-N-2 and

1543 C-S-N-2D (@1540) from N wall, east end. Same soil type as C-S-E

10/23/12

page 3 of 4

1545 Collected floor sample C-F-2  
Brown silty sand w/ small ~~chunks~~  
pieces of gray detrital material.

1551 Collected floor sample C-F-4.  
Same ~~soil~~ soil type as C-F-2 without  
gray pieces.

Weather became overcast, temp dropped to ~40°F

1610 Called Energy. Will need to drop off samples this PM. Will start analysis in the AM. Results as early as 4 pm Wednesday

1630 Staked locations @ SE + C-F-6 quadrant

C-F-6-G1	45.80709 N	108.44703 W
C-F-6-G2	- .80713 N	- .44702 W
C-F-6-G3	- .80713 N	- .44710 W
N Wall 6-4 midpnt	- .80715 N	- .44714 W
F N midpnt	- .80707 N	- .44711 W

1637 Collected sample C-F-6 same soil as C-F-4  
Staked locations at C-F-1 + C-F-3

C-F-1-G1	45.80702 N	108.44662 W
C-F-1-G2	- .80705 N	- .44664 W
C-F-1-G3	- .80703 N	- .44668 W
C-F-3-G1	- .80701 N	- .44672 W
C-F-3-G2	- .80703 N	- .44684 W
C-F-3-G3	- .80699 N	- .44684 W

*Note in the Rain*

10/23/12

page 4 of 4

- 1645 Collected Sample C-F-1.  
Same soil as C-F-2.
- 1648/1652 Collected sample C-F-3 and  
duplicate C-F-3D (© 1652). Same  
soil as C-F-1 + C-F-2.

## Photos

- 0033 Pond C - E wall facing SE
- 0034 Pond C - N wall facing W
- 0035 Pond C - Floor quadrant 4
- 0036 Pond C - Floor quadrant 2
- 0037 Pond C - Floor quadrant 6
- 0038 Pond C - loading out of SW  
Corner
- 0039 Pond C - Floor quadrant 1
- 0040 Pond C - Floor quadrant 3
- 1715 Signed out of facility in OCS  
logbook. Left site to take  
samples to Energy
- 1730 Dropped samples off at Energy Labs.  
Left samples in entrance  
vestibule. Left signed loc pinched  
in cooler lid. Put custody seal  
on cooler

SJ 10/23/12

10/24/12

## CPS-LPI Billings

- Pond C Excavation -  
WX - 34°F, overcast, calm
- 0850 Picked up extra cooler at Energy
- 0920 Signed into CPS facility.  
Updated notes, turned on CPS.  
OCS still remaining waste  
from Pond C, SW corner.
- 0955 Signed into OCS book. Safety Meeting
- 1040 ~~Flagged Sample Location~~ <sup>or</sup> Measured  
South + West walls of excavation  
(see ~~flag~~ <sup>sketch</sup> on 10/23/12 notes)  
Flagged locations for floor  
quadrants 5, 7, + B. Flagged  
sidewall locations for N-1, W-1,  
S-1, and S-2.
- Noted what appeared to be old  
tyrex suit buried in soil along  
S sidewall, approximately 2/3  
length (toward E end).
- ~~During flagging,~~ <sup>or</sup>
- 1103 During flagging, noticed ~4"  
waste layer above bottom liner  
remaining in W sidewall.

Rite in the Rain

10/24/12

Page 2 of 6

Also looked at "tyvek" in south wall.  
Turned out to be waste interbedded.  
DLS will continue to excavate both  
areas.

\*Note: bottom liner was not "chased"  
if there did not appear to  
be waste. However, the liner  
will be removed during backfilling.  
Intent is to <sup>1</sup>take samples,  
<sup>2</sup>remove ~~stop~~ waste, and <sup>3</sup>be able to  
start backfilling.

1103 Collected floor sample G-F-7

Sandy silt, brown.

1112 Collected sidewall sample C-S-N-1  
from below remaining bottom  
liner. No apparent waste.

C-F-5-61

C-F-5-62

C-F-5-63

C-F-7-61 45.80696 N 108.44714 W

C-F-7-62 - 80700 N - .44723 W

C-F-7-63 - 80696 N - .44720 W

C-F-8-61 - 80706 N - .44722 W

C-F-8-62 - 80711 N - .44720 W

C-F-8-63 - 80711 N - .44726 W

10/24/12

Page 3 of 6

C-S-N1-G1	45.80713 N	108.44730 W
C-S-N1-G2	- 80715 N	- .44717 W
C-S-N1-G3	- 80718 N	- .44702 W

## Photos

- 0041 Pond C excavation facing SE
- 0042 Pond C, W wall (before additional excavation, facing S)
- 0043 Pond C, N wall facing E
- 0044 Pond C, S wall (before additional excavation); facing W.
- 0045 Pond C, facing NW
- 0046 Pond C, ~~SE~~ E wall, facing N
- 0047 Pond C, facing NE
- 0048 Pond C, S wall (before add'l excavation) facing E
- 0049 Pond C, W wall (before add'l excavation) facing N
- 0050 Bench on SW corner of Pond C, excavated ~ 2' down from top liner to remove ~ 6" waste bench.
- 0051 Location SI-C-1A facing S
- 0052 Pond C, W sidewall after add'l exc.
- 0053 Pond C, W sidewall, facing ~~W~~ Note in the Rain.

10/24/12

Page 4 of 6

- 1206 Collected sidewall sample C-S-W-1  
 1225 Collected sidewall sample C-S-S2  
 1233 Collected sidewall sample C-S-S1

Increasing clay content in  
 the silt at all locations  
 in this sample set

- 1243 Collected sample C-B-5 from floor  
 1253 Completed COC. Relinquished  
 samples Derek w/ LPI for  
 delivery to Energy Lab.

Collected GPS Coordinates

C-S-S-1-G1	45.80696 N	108.44724 W
C-S-S-1-G2	- .80695 N	- .44711 W
C-S-S-1-G3	- .80696 N	- .44702 W
C-S-S-2-G1	- .80695 N	- .44689 W
C-S-S-2-G2	- .80695 N	- .44676 W
C-S-S-2-G3	- .80699 N	- .44662 W
SI-C-9A	- .80698 N	- .44657 W
SI-C-8A	- .80710 N	- .44657 W
SI-C-7A	- .80716 N	- .44662 W
SI-C-6A	- .80718 N	- .44674 W
SI-C-5A	- .80716 N	- .44693 W
SI-C-4A	- .80714 N	- .44714 W
SI-C-3A	- .80709 N	- .44732 W

1310 / 1315

10/24/12

Page 5 of 6 <sup>13</sup>

SE-C-2A	45.80701 N	108.44731 W
SE-C-4A	- .80692 N	- .44723 W
SI-C-10B	- .80708 N	- .44673 W
SI-C-11B	- .80704 N	- .44714 W

1310 Left site area for lunch

1315 Signed out of facility.

1340 Returned to facility to collect  
 Swann samples from Pond C.

1348 Collected sample SI-C-1A

1354 Collected sample SI-C-2A

1358 Collected sample SI-C-3A

(131410) Collected sample SI-C-4A

1404 Collected sample SI-C-11B

(13.5-14.5' bgs) from floor of excavation. Hand  
 augured down to 13.5 ft bgs

to moist soil. Dark gray,  
 slight odor, possibly HC or  
 decayed material (swampy)

1413 Collected sample SI-C-5A

1417 Collected sample SI-C-6A

1424/ Collected floor sample SI-C-10B

1428 and duplicate SI-C-10BD

(14-15' bgs) (c1428). Dark gray, slightly  
 stronger possible HC odor.

Hand augured down to 14 ft bgs  
 hole in the rain.

10/24/12

Page 6 of 6

~~1432~~ 1432 Collected sample SI-C-7A

1437 Collected sample SI-C-8A

1441 Collected sample SI-C-9A

Packaged samples in cooler,  
 completed chain of custody and  
 signed out of facility.

1535 Dropped samples off at Energy  
 Labs. Returned to office.

S. Young  
 10/24/12

CRS-LPI Billings  
 Pond C Excavation

Page 1 of 15

WX - ~40°F, breeze, cold/  
 overcast

10/25/12

0940 Signed into facility. Drove  
 back to excavation. Signed  
 into OCS log book.

OCS excavated 6-12 additional  
 inches in depth from gradients  
 C-F-4 and C-F-6. Proceeded  
 with backfilling remaining pond.

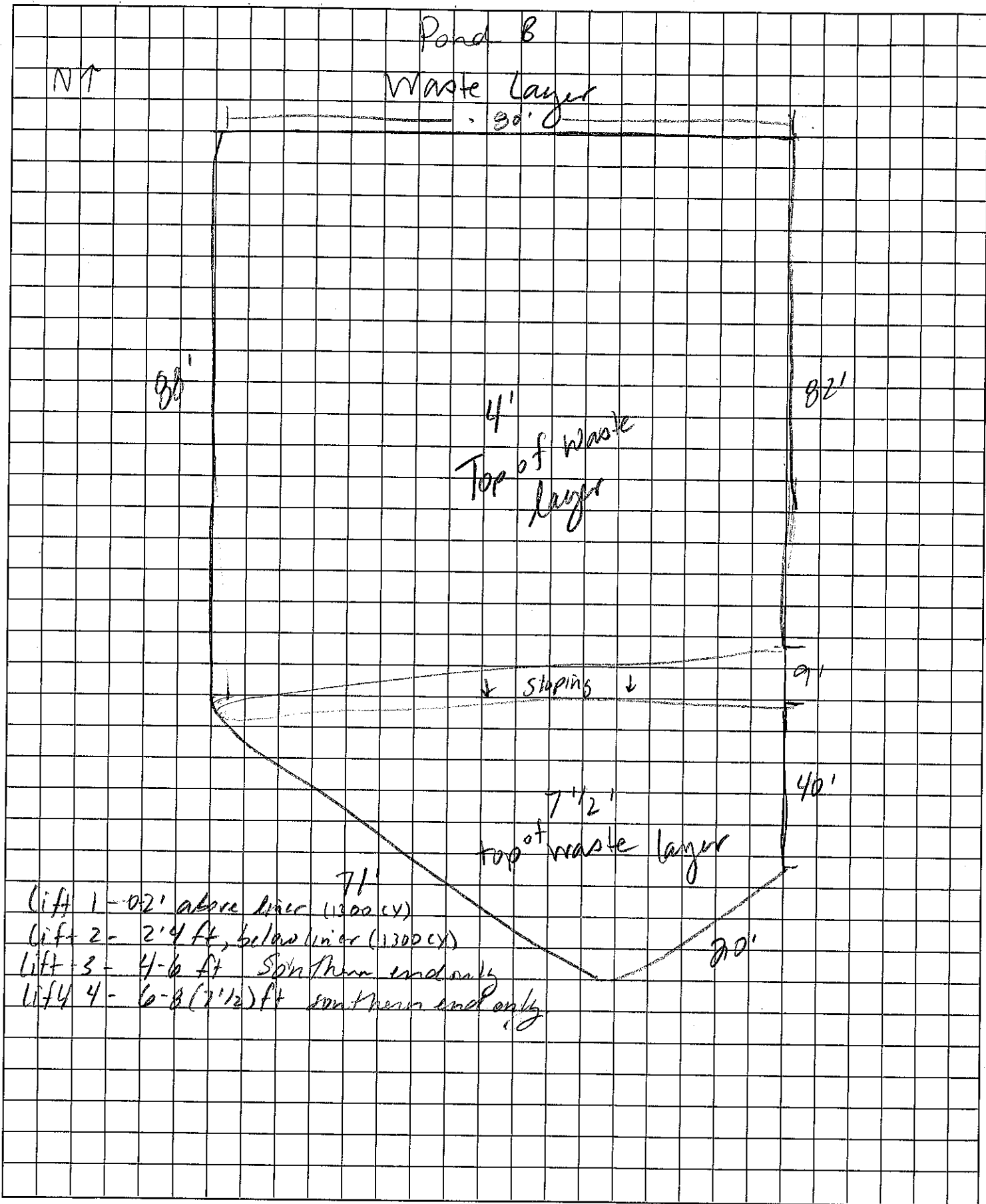
~~0956~~ Collected sample C-F-4R 364 mg/kg

1001 Collected sample C-F-6R. 185 mg/kg

1010 Left facility. Headed to Energy  
 to drop samples off.1025 Relinquished samples at  
 Energy Labs. Returned to  
 office.

S. Young  
 10/25/12

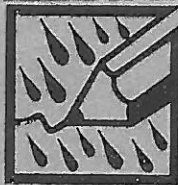
Rite in the Rain



<b>ENSR   AECOM</b>	PROJECT NUMBER: 60266033	PROJECT NAME: CPS-LPI Billings	CALC BY:	DATE: 8/20/12
	CHECKED BY:	SUBJECT: SI - Pond B top of waste layer	PAGE: OF	

CPS SI EXCAVATION

BILLINGS MT



*"Rite in the Rain"*

ALL-WEATHER

**ENVIRONMENTAL**

No. 550-4F

LDR's For 8/23/12 - 245-4191

12000 900

ALL-WEATHER  
ENVIRONMENTAL FIELD BOOK

Name Ops Contracting Services  
LLC

Address 200 N. 2<sup>nd</sup> Street  
Nashville, TN 37213

Phone 615-256-0165

Project Crop Production Services,  
Loveland Products Inc.,  
Surface Impoundment Excavation  
Billings, MT

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

Specifications for this book

Page Pattern		Cover Options	
Left Page	Right Page	Polytura Cover	Fabrikoid Cover
Columnar	1:4 Grid	N/A	Item No. 500-4F

© 1986 J. L. DARLING CORP

CONTENTS

PAGE	REFERENCE	DATE
3	LPS LPI SI Excavation	8/13/17

Reference Page Index

- 67 Error codes, Hazardous classifications, Container types
- 68 Sampling guidelines (Liquids)
- 69 Sampling guidelines (Solids)
- 70 Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
- 71 PVC Pipe casing tables
- 72 Soil Classification
- 73 Soil Classification
- 74 Conversions (Length, Weight, Volume, Temp, etc )
- 75 Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
- 76 Maximum Concentration of Contaminants for the Toxicity Characteristic

## CONTENTS

PAGE	REFERENCE	DATE

Location 1525 Lockwood Date 8/13/12<sup>3</sup>  
 Billings, MT  
 Project / Client CPS LPI SI Excavation

07:00	Depart	Hotel - RW, TS, KH, S
07:15	pick up	Ice
07:30	On-site	LPI Facility
07:50	United	Rentals
	water	truck on-site
08:10	Cat	Dump Truck
		on-site
08:45	LPI	Training
09:15	Safety	Training
	HASP	Review, Tailgate
	Safety	Meeting Complete
10:00	Completed	walk thru
		w/ LPI
10:15	O-6	onsite
10:20	Cat	324E Excavator
		on-site
10:35	L. Hendrickson	
		on-site
10:45	Asphalt	Cluster
		on-site
11:00	Equipment	Inspection
	complete	

Location 1525 Lockwood Date 8/13/12  
 Billing SI  
 Project / Client CPS LPI SI  
Excavation (cont)

11:15 Begin Asphalt Cutting  
 12:35 KA, TJ Lunch  
 13:15 RW, JS Lunch  
 13:20 GM Petroleum on site  
 14:00 Cat on-site w/ Fire  
 Extinguishers  
 14:47 Discover Liner under  
 Asphalt During Removal  
 15:15 RW OFF Site for meeting  
 w/ LPI + CPS  
 16:15 RW Back on-site  
 16:20 Completed Asphalt  
 Cutting Called OFF  
 for Rent  
 16:45 Cat on-site  
 to check Excavator  
 Engine Light  
 17:00 Stop Asphalt Removal  
 17:20 Depart  
 17:30 Depart Site  
 17:45 Back @ Hotel  
 " Wiley car

Location 1525 Lockwood Date 8/14/12  
 Project / Client CPS LPI SI Excavation

06:00 Depart Hotel  
 RW, Kth, JM, TJ  
 06:15 Stop For ice and  
 water  
 06:30 on-site  
 06:50 Complete Equipment  
 Inspections  
 07:05 Complete Tailgate  
 Safety Meeting  
 Begin Asphalt Removal  
 07:15 Measure Fencing  
 area - 452'  
 08:00 Linda Hendrickson  
 on site  
 08:10 R. Wilkinson OFF  
 Site  
 10:20 R. Wilkinson Back  
 on-site  
 12:00 OFF-site for Lunch  
 12:35 Back on-site  
 15:12 R. Wilkinson OFF Site

Location 1525 Lockwood Date 8/14/12  
Billings, MT  
 Project / Client CPS LPI SI  
Excavation (cont)

16:05 R. Wilkinson back  
 On-site  
 16:10 Excavator down w/  
 Keyen Error  
 16:15 Begin temporary Fence  
 Installation  
 16:45 Cat On-site cannot  
 fix will have a replace  
 in AM  
 18:00 Completed temp Fence  
 Install  
 18:05 Debrief  
 18:10 OFF-site  
 18:30 Back @ Hotel

*[Handwritten signature]*

Location 1525 Lockwood Date 8/15/12  
Billings, MT  
 Project / Client CPS LPI SI Excavation

0600 Depart Hotel  
 0615 Stop for ice  
 0620 On-site - RW, KH, JM  
 TJ  
 0630 Light Rain  
 0700 Complete Tailgate  
 H+S + Equipment  
 Inspections  
 0710 Cat on-site  
 w/ Replacement Excavator  
 0740 Continue Asphalt Removal  
 0753 Pwd C GPS Points  
 NW Corner  
 108.447321  
 45.806715  
 NE Corner  
 108.446456  
 45.806756  
 SE Corner  
 108.446886  
 45.806451

Location 1925 Lockwood Billings Date 9/15/12  
 Project / Client <sup>MT</sup> CPS/LPI SI Excavation  
 (cont)

SW Corner

168.447229  
 45.806409

Center

108.447096  
 45.806585

0815 Linda Hendrickson  
 on-site

0817 Rain

0920 Completed GPS Marking  
 of Pond B, R. Wilkinson ~~off-site~~

10:08 R. Wilkinson back on-site  
 w/waddles

11:30 Complete Asphalt  
 Removal, 2<sup>nd</sup> containment  
 construction and  
 begin Excavation  
 0-2' Pond B

11:33 Hit upper Liner Pond  
 B @ 22"

12:00 OFF site For lunch

Location 1925 Lockwood Billings Date 9/15/12  
 Project / Client <sup>MT</sup> CPS/LPI SI Excavation  
 (cont)

12:30 Back on-site

14:00 Cut on site w/  
 New bucket For  
 Excavator

14:45 Odor detection 0-2'  
 Pond B - Notified  
 Linda Hendrickson

17:45 Tank Inspection

18:30 R. Wilkinson OFF  
 Site For Snacks

18:50 R. Wilkinson back  
 on-site

20:25 Complete Excavation  
 B 0-2' Dimensions  
 170x110 ≈ 1385 yd<sup>3</sup>

20:41 Complete Cover Stockpile

20:45 Debrief

20:50 OFF-site

21:00 Back @ Hotel

*Robyn*

Location 1525 Lockwood Date 8/16/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

0645 Depart Hotel - RW, TJ, JM  
 KH  
 0700 Stop For ice and water  
 0715 on-site  
 0735 AECOM on-site  
 0750 Complete Tailgate HHS  
 and equipment inspections  
 0825 AECOM completed  
 Stockpile Sampling  
 Pond B 0-2'  
 2 Stockpile Samples  
 Collected  
 Sample ID  
 B-LI-C1  
 B-LI-C2  
 0935 CAT on-site to pick  
 up 324E  
 10:35 Tire Service on site  
 12:05 Lunch  
 12:15 R. Wilkinson back to  
 Liner Removal

Location 1525 Lockwood Date 8/16/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

1245 Crew back on-site  
 17:30 Complete Liner  
 Removal  
 18:20 Complete Stockpile  
 Covering  
 18:21 Debrief  
 1825 Depart Site  
 1940 Back @ Hotel

Location 1525 Lockwood Date 8/17/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

- 0600 Depart Hotel  
 0610 Stop For ice  
 0620 R. Wilkinson on-site  
 0630 KH, JM, TS on-site  
 0645 Complete Equipment inspections  
 0650 Complete Tailgate Safety  
 0651 Fuel Equipment  
 0705 Begin Excavation Pond B  
 2-4' Lift  
 0730 Encounter Suspect waste  
 layer Contact Lival  
 Hendrickson  
 Dimensions  
 $82' \times 110' \times 5.5' \approx 1350 \text{ yd}^3$   
 12:00 Lunch OFF-site  
 12:40 Pick up Waddles - 7  
 13:00 Stopped due to train  
 13:05 Back on-site  
 Note - CCS crew back on-site  
 12:35

Location 1525 Lockwood Date 8/17/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

- 13:30 meet w/ Linda and  
 Diana regarding cost  
 projection  
 Notes:  
 Projected cost B - \$19,711  
 Projected cost C - \$3.1 Million  
 Projected cost A - \$29,675  
 14:00 crew on HHS call  
 14:15 Completed meeting  
 w/ Diana + Linda  
 14:30 Back to work  
 15:00 ID Bottom Liner  
 St Corner  
 15:41 Allied Waste  
 on-site For Roll off  
 Swap out  
 15:45 R. Wilkinson off-site  
 Pickup waddles and  
 Poly  
 16:50 R. Wilkinson back  
 on-site

Location 1525 Lockwood Date 8/17/12  
 Billings MT  
 Project / Client CPS/LPI SI

Excavation

- ( 17:00 Complete Excavation  
 2-4' Lift Pond B  
 IO bottom liner  
 NE corner
- ( 17:45 Measure Pond B  
 80' x 112'
- ( 18:00 Completed covering  
 stockpiles
- ( 18:05 Debrief
- ( 18:15 Depart Site
- ( 18:30 Back @ Hotel

*[Handwritten signature]*

Location 1525 Lockwood Date 8/18/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

- 0600 Depart Hotel
  - 0615 Pick up ice
  - 0630 on-site
  - ~~0645~~ 0645 Complete Tailgate  
 Has meeting and  
 Equipment Inspections
  - 07.30 Completed Fuel  
 tank inspection
  - 0745 D. Grassel on-site
  - 0810 L. Hudrickson  
 on-site
  - 08.20 begin measurements  
 pond B+C
- Note: GPS Corners  
 Pond C
- SW - 108.447333  
 - 45.806932
  - NW - ~~108.446065~~  
~~45.807~~  
 108.447416  
 45.807072

Location 1525 Lockwood Date 8/14/12  
 Billings, MT Project/Client CPS/LPI SI Excavation

## Pond C

SE- 108.446615

- 45.806929

NE- ~~108.446665~~

- 45.807168

## Pond A

NE- ~~108.446756~~ in- ~~45.806756~~ in

- 108.446665

- 45.806786

SE- 108.446657

- 45.806525

NW- 108.446808

- 45.806754

SW- 108.446782

- 45.806498

12:16 Depart Site  
 For Lunch

12:35 Back on-site

13:45 Complete Pond B  
 4'-6' Excavation

Location 1525 Lockwood Date  
 Billings, MT Project/Client CPS/LPI  
 SI Excavation

Pond B 4'-6'

71' x 45' x 2'

= 240 yd<sup>3</sup>

13:50 Cover Stockpile

Pond B 4'-6'

14:15 Begin Excavation

Pond B 6'-8'

14:20 Encounter waste

@ 18" Pond B

6'-8'

15:00 Complete Pond B

6'-8'

71' x 25' x 1.5' = 98 yd<sup>3</sup>

15:05 Fence Installation

and Cover Stockpiles

16:20 Complete Fence

Installation and  
 Stockpile covering

16:25 Debrief

16:30 Depart Site

17:00 Back @ Hotel

Wulfen

Location 1525 Lockwood Date 8/20/12  
 Billings, MT Project / Client CPS/LPI SI Excavation

0640 Depart Hotel  
 0650 Stop for ice  
 0700 on-site  
 0730 Complete Equipment inspections and Tablegate Safety Meeting  
 0800 Complete Excavation Insp Fuel Tank Inspection  
 0810 Complete Dust Suppression on load roads  
 0812 Linda Hendrickson on-site  
 0813 AECOM on-site  
 0840 Truck tare weights

Truck #	Empty Weight Pounds
RS3	39980
RS2	40560
RS5	40160
<u>Loaded</u>	
RS3	103840
RS2	103080
RS5	104640

Location 1525 Lockwood Date 8/20/12  
 Billings, MT Project / Client CPS/LPI SI Excavation

Truck	Tons
RS3	31.93 tons
RS2	31.26 tons
RS5	32.24 tons
9	32.03 tons
10	<del>31.18 tons</del>
21	31.18 tons
<u>Empty</u>	
Truck	Pounds
9	41720
10 (Kissler)	38840
21	40100
<u>Loaded</u>	
Truck #	Pounds
9	105,740 - tons
10	101,200
21	104,160
9	104,560
<u>Trucks #</u>	
9	31.42
Total	140.00

Location 1525 Lockwood Date 8/20/12  
 Dillings, MT CPS/LEI SI Excav.  
 Project / Client

12:00 R. Wilkinson OFF-site  
 For whistles  
 12:45 Lunch  
 13:15 back on-site  
 14:15 Complete Site Policing  
 and dust suppression  
 14:30 Debrief  
 14:35 Bx, TJ + KH OFF-site  
 14:42 MDEQ on-site  
 15:55 MDEQ OFF-site  
 16:10 R. Wilkinson OFF-site  
 16:30 Back @ Hotel

3  
 Kelly  
 3

Location 1525 Lockwood Date 8/21/12  
 Dillings, MT CPS/LEI SI Excav.  
 Project / Client

0645 Depart Hotel - Aw, TJ, KH, Ex  
 0700 On-site  
 0730 Complete Equipment  
 Inspections Tailgate  
 HTS  
 0850 MDEQ on-site

Truck #	Empty (lbs)	Loaded
155 (RO)	39260	66680
150 (RO)	40280	66320
201	38830	104940
101 (Ross)	38520	104800
19	34620	102460
20	39140	103360

Truck #	Waste (Tons)
155	13.71
150	13.00
201	33.03
101	33.14

Weight Count - HT HT HT 1

Location 1525 Lockwood Date 8/21/12  
 Billing's, Inc. CPS/LPI SE  
 Project / Client

Excavation

0945 Roll OFFs on-site  
 1045 Two Dumps on-site  
 1215 Two Dumps on-site

Truck #	Tons
19	31.42
20	32.11

Total - 156.41 tons

14:00 Completed waste load  
 out - Lunch  
 14:30 begin relocation  
 of stockpile over  
 Cell A  
 16:00 Lt called wants  
 survey of bottom  
 Liner Depth  
 16:30 Stop Stockpile Relocation  
 75% Complete  
 4.60 14.7  
 11.1ft Thick  
 17:00 Reinstall Fencing

Location 1527 Lockwood Date 8/21/12  
 Billing's, Inc. CPS/LPI SE  
 Project / Client Excavation

1725 Debrief  
 17:30 Depart Site  
 7:45 Back @ Hotel

Location 1925 Lockwood Date 8/22/12  
 Billings, MT CPS/LPE SI Excavation  
 Project / Client

0640 Depart Hotel weigh in-out  
 0650 Pickup ice 1M 1M  
 0700 on-site  
 0715 Complete Tailgate  
 H+S Mtg  
 0730 5 Trucks on-site  
 Truck R52 broke down

Truck #	Empty	Loaded	Tons
21	40100	104600	32.28
R55	40600	105060	32.45
R53	39980	101200	30.61
9	41360	105600	32.11
10	38840	104480	32.32

0900 Completed loading 5 Trucks  
 0915 Cut on-site to Swap  
 out Roller  
 0925 BCS on-site For Point-to-Point  
 Service

Location 1925 Lockwood Date 8/22/12  
 Billings, MT CPS/LPE SI Excavation  
 Project / Client

0945 Construct 2nd cont  
 Pond A Stockpile  
 area  
 10:30 R Wilkinson off-site  
 For PPE - Relocate SP  
~~10:31 Allied Waste hw  
 on-site Sweep out  
 Roll OFFS~~  
 11:15 R. Wilkinson back  
 on-site  
 12:00 lunch  
 12:30 Back on-site  
 Continue Stockpile  
 relocation  
 Note: A center  
 158.446724  
 45.806638  
 13:45 Start Pond A  
 6-2'  
 14:00 Encounter upper  
 liner Pond A @ 3'

Location 1525 Lockheed Date 8/22/12  
 (B. Huns, MT)  
 Project / Client CPS/LPE SI  
Excavation

15:00 Call Ken w/ PSC  
 4 dumps tomorrow  
 between 7 and 9 am  
 15:15 Allied waste on-site  
 to haul off / drop off  
 Roll-OFF box  
 16:25 stop excavation  
 pond B 0-2"  
 (25% complete)  
 16:50 Complete stock pile  
 covering  
 16:51 Debrief - Fuel delivery  
 17:15 Depart Site  
 → Back @ Hotel  
 17:30

⚡  
 Allied  
 run  
 9

Location 1525 Lockheed Date 8/23/12  
 (B. Huns, MT)  
 Project / Client CPS/LPE SI Excavation

06:40 Depart Hotel - RW, T, S, KH, Ex  
 0700 On-site  
 0730 Complete Equipment  
 inspections and  
 tailgate Hts Mtg  
 0845 Roll OFF Trucks  
 ON-site  
 0910 Two Dump Trucks on-site

Truck #	Empty	Landed	Tons
155	39260	78400	19.51
150	40280	79100	19.41
201	38880	105140	33.13
101	38520	105800	33.64
19	39620	105060	32.75
20	39140	105200	33.02
<b>Total</b>			<b>171.5</b>

11:30 Lunch  
 12:00 Back on-site  
 12:35 Two Dump Trucks on-site  
 Weights - ~~HT~~ ~~HT~~ ~~HT~~

Location 1525 Lockwood Date 8/23/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

13:00 Damage to truck  
 # 20 During Loading  
 by Tom Johnson  
 Note: Damaged tarp brackets  
 and arms

14:30 R. Wilkinson OFF-site  
 for supplies

15:30 Back on-site

16:45 Pond A 0-2'

Dimensions:

120' x 70' x 2'  
 = 632 yd<sup>3</sup>

16:50 5 trucks 7-9am  
 call from Ken w/ PSC

16:20 Complete Pond A  
 6-2', begin liner  
 Removal

17:20 Stop liner removal  
 25% complete

17:25 Debrief

17:30 Depart Site

18:00 Back @ Hotel *John*

Location 1525 Lockwood Date 8/24/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

0640 Depart Hotel  
 0650 Pickup Joe  
 0700 on-site - RW, TS, KH  
 Ex  
 0730 Dump Truck on-site  
 -3

Truck	Empty	Loaded	Tons
9	41390	103990	31.10
10	39340	105700	33.43
21	40100	104430	32.19
R55	40160	106990	33.21
R53	39980	- No show	-
			Total - 129.93

0730 Complete Equipment  
 Inspections and tailgate  
 H&S

0740 Begin loading Trucks

0745 Jan w/ Aecom on-site

Dump Truck on-site (1)

0845 A-LI-CI collected

Weights - ~~111~~ 111

Location 1525 Lockwood Date 8/24/12  
 Billings, MT Project / Client CPS/LPC SE Excavation

09:20 AECAM OFF-site  
 0940 Completed Load out  
 11:20 Completed liner  
 Removal Pond A  
 Begin Pond A 2'-4'  
 Excavation  
 12:00 Lunch  
 12:30 Back to Excavating  
 12:45 R. Wilkinson OFF-site  
 For Poly sheeting  
 13:30 R. Wilkinson back on-site  
 16:00 Complete Pond A  
 2'-4' Begin Fence installation  
 and Stockpile Covering  
 17:00 Complete Covering Stockpiles  
 and Repairing Fence  
 17:01 Debris F  
 17:05 Depart Site  
 17:15 Back @ Hotel

*Wolfe*

Location 1525 Lockwood Date 8/25/12  
 Billings, MT Project / Client CPS/LPC SE Excavation

0645 Depart Hotel  
 0700 On-site  
 0730 Complete tailgate  
 Hts and equipment  
 inspections Begin  
 Excavation Pond A  
 4-6'  
 0845 Encounter waste  
 layer SE Corner  
 Pond A @ 5' by 5'  
 Strong odor, diff  
 color - tannish grey  
 0945 Waste layer Pond  
 A = 100x60x2.5  
 ~850 tons  
 1015 RW OFF-site  
 11:15 RW back on-site  
 Excavation Pond A  
 4-6' complete  
 100x60x1 = 222 yd<sup>3</sup>  
 Fence Installed

Location 1525 Lockwood Billings <sup>MT</sup> Date 9/25/12  
 Project / Client CPS/LPI SE Excavation

11:30 Equip Maint / Push  
 waste Pond A w/  
 dozer  
 11:55 Complete Maint  
 12:00 Debris  
 12:05 Depart Site  
 12:20 Back @ Hotel

debris

Location 1525 Lockwood <sup>MT</sup> Date 9/27/12  
 Billings, <sup>MT</sup> Project / Client CPS/LPI SI Excavation

0645 Depart Hotel  
 0650 Stop For ice  
 0658 Caught by train  
 0710 On-site  
 0715 Tailgate H&S  
 0720 Two Trucks on-site  
 0745 Aecom On-site  
 0825 Complete loading 19+20

Truck	Empty	Loaded	Tons
19	39620	103400	31.89
20	39140	103860	32.36

No Show

Total - 6425

08:30 Swap water trailer  
 for repaired water  
 Truck

0950 Aecom OFF-site  
 Weights - 111 A-12-C1 @ 805  
 A-13-C1 @ 9:30

Location 1525 Lockwood Billings MT Date 8/27/12  
Project / Client CPS/LPI SI Excavation

11:30 OFF-site for lunch  
12:05 Back on-site  
received call from  
Tim Berrens no more  
trucks for today  
4-Trucks tomorrow  
@ 7:00 am 2 Trucks  
@ 9:00 am

12:10 Secure Excavation  
Areas

12:15 Debrief - TS, Gx, Kit  
OFF-site

12:35 R. Wilkinson OFF-site  
13:00 Back @ Hotel

*Bob Wilkinson*

Location 1525 Lockwood Billings MT Date 8/28/12  
Project / Client CPS/LPI SI Excavation

0530 Depart Hotel  
0545 Stop for ice  
0550 On-site - 4  
dumps for R. Transport  
0605 Complete Tailgate  
H&S  
0610 Begin Loading Trucks

Truck	Empty	Loaded	Tons
R55	40160	104560	32.20
10	38840	105520	33.34
9	41380	105060	31.84
21	40100	103660	31.78
<del>21</del> 138	33240	81600	23.98
93	40820	105660	32.42
85	40840	104980	32.07
393	31560	78760	23.60
302-3	32200	77980	22.89
1674	34820	77380	21.28
1084	34500	78580	20.54
Weights -			

Location 1525 Lockwood Date 8/28/12  
 Dillingham MT CPS/LPI SI Excavation  
 Project / Client

07:10 4 Trucks loaded  
 + OFF-site  
 07:35 1-us Bulk on-site  
 08:30 1-us Bulk OFF-site  
 08:50 Forlor on-site two  
 Dumps w/ pups  
 10:20 Complete loading Forlor  
 Trucks  
 11:05 one Truck US Bulk  
 on-site  
 12:10 complete Load  
 12:30 5-Bulk Trucks on-site  
 14:00 Complete load out 5 Trucks

Truck	Empty	Loaded	Tons
336	32120	78220	23.05
351	33820	78160	22.17
Total -			351.09

14:15 Relieve F  
 14:20 TJ, Ex, KH OFF-site  
 14:50 RW OFF-site  
 15:00 back @ Hotel  
*dele...*

Location 1525 Lockwood Date 8/29/12  
 Dillingham MT CPS/LPI SI Excavation  
 Project / Client

06:45 Depart Hotel  
 07:00 on-site 1 Truck  
 From US Bulk on-site  
 07:30 Kest Tom on-site  
 late  
 08:20 Complete Loadout

Truck	Empty	Loaded	Tons
1543	33540	79600	23.11
1270	32060	79180	23.56
1482	32640	79580	23.47
Total -			70.14

9:00 Rimrock on-site  
 09:20 Complete Decon  
 09:30 Two trucks w/  
 US Bulk on-site  
 Rim Rock OFF-site  
 11:00 complete Loading  
 Two Trucks  
 11:20 Complete Bucket Decon  
 Weights - ~~1111~~



Location CP51535 Lockwood Date 8/30/12  
 Billings, MT  
 Project / Client CPS/LPF SI Excavation

0950 1 us Bulls on-site  
 11:10 Lunch  
 11:40 Back on-site  
 12:25 NS-1 Collected  
 12:30 NS-2 Collected  
 12:45 Samples shipped  
 13:05 5-us Bulk on-site  
 14:35 Completed Waste load out

Truck	Empty	Loaded	Tons
351	33820	80200	23.98
1012-2	32240	77060	22.41
			Total - 390.96

1545 Complete Waste Calc  
 Pond B = 2700 tons  
 1555 Complete Debris F-Gr,  
 SJ, Kit off-site  
 1600 R Wilkinson off-site  
 1615 Back @ Hotel

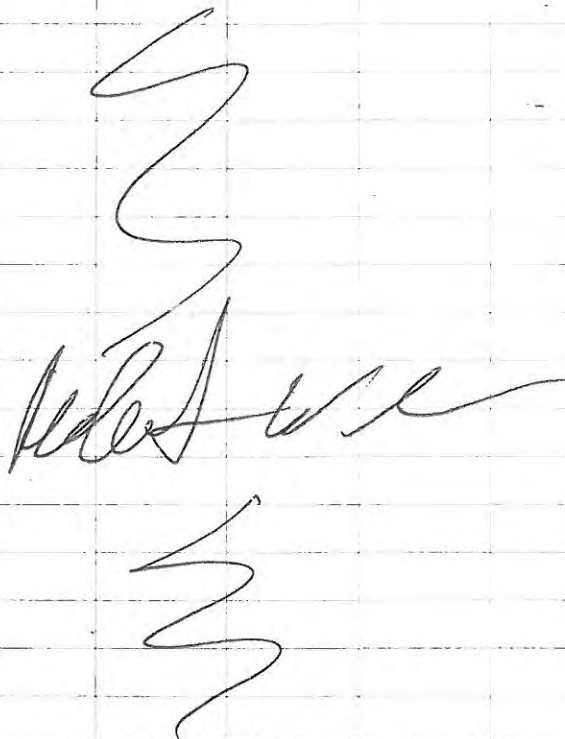
*M. J. J.*

Location 1525 Lockwood Date 8/31/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

0645	Depart	Hotel		
0700	On-site,	1-us Bulls		
	On-site			
0715	Complete	Tailgate		
	145			
0745	Accum	On-site		
0900	Completed	Confirmation		
	Truck	Empty	Loaded	Tons
1943	33540	78360	22.41	
1270	32060	78420	23.18	
<del>1030</del>				
			Total - 45.59	
10:30	Completed	Soil		
	Sampling			
	Collected	- 9 conf Sample		
		- 5 SMA Samples		
weights	- 11			

Location 1525 Lockwood Date 8/31/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

11:30 Lunch  
 19:40 Complete Stockpile  
 Decon + Tailgate  
 H&S  
 1600 Back at Hotel



Location 1525 Lockwood Date 9/1/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

0720 Depart Hotel  
 0740 On-site  
 0815 Complete Equipment  
 inspections + Tailgate  
 H&S Mtg  
 0900 Completed decon  
 of dozers + Excavator  
 0915 R. Wilkinson OFF-SITE  
 Site for Supplies  
 0945 R. Wilkinson Back  
 ON-SITE  
 1025 completed wetting  
 + Proof Rolling Sub  
 grade begin 1st  
 Lift Pond A  
 11:30 R. Wilkinson OFF-SITE  
 11:55 R. Wilkinson back  
 on-site  
 12:15 Two US Bulk Trucks  
 ON-SITE - 3

Location 1525 Lockwood Date 9/1/12  
 Dillings, MT  
 Project / Client CPS/LPI SE Excavation

Truck #	Empty	Loaded	Tons
3391	32360	79440	23.21
339350	32360	79440	23.54
393	31560	79080	23.76
Total -			70.51

Weights - IIII I

13:40 Complete Load out  
 Debris + Depart Site  
 13:55 Back @ Hotel

*[Handwritten signature]*


Location 1525 Lockwood Date 9/3/12 45  
 Dillings, MT  
 Project / Client CPS/LPI SE Excavation

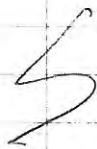
Truck #	Empty	Loaded	Tons
0530	Depart Hotel		
0545	on-site		
0550	us Bulk Trucks on-site		
0555	4 R Transport on-site		
10:00	3 - us Bulk on-site		
138	33240	79480	23.12
R-55	40660	106480	33.16
10	38840	103940	32.55
9	41380	104980	31.75
20	40100	104580	32.24
302-3	32200	79240	23.52
351	33820	79840	23.01
1084	34500	79580	22.04
182	32040	77120	22.24
104	31660	79760	24.05
118	34040	79920	22.89
Total -			290.57

Weights - IIII IIII IIII IIII

Location 1525 Lockwood Date 9/3/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

11:30 3 as Bulk Trucks onsite  
 12:30 Lunch  
 13:00 Back on-site  
 16:00 Debrief  
 16:15 OFF-site  
 16:30 Back @ Hotel

  
 Robert White



Location 1525 Lockwood Date 9/4/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

0645 Depart Hotel  
 07:00 on-site - 6 Trucks  
 0745 Complete Equip Inspections  
 Training, Tailgate Safety

Truck #	Empty	Loaded	Tons
503	39440	101960	31.76
545	31720	92660	25.47
505	37860	100160	31.15
529	33500	90640	23.57
65	38780	104820	33.02
67	38580	103100	32.26

No Show

Total - 177.23

0750 Completed compaction  
 testing - 98% 100%  
 compaction, Pond A, Lift 1  
 6.7' 1' Lift 4.2, 4.5

weights - ~~111~~ ~~111~~ ~~111~~  
 IOR 000201413

Location 1525 Lakewood Date 9/4/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

10.00 Complete Load out  
 + Dozer Decar  
 10.15 Begin 2<sup>nd</sup> Lift Pond  
 A  
 12.30 KH+TS OFF-site for  
 Lunch  
 13.30 Rimrock on-site  
 Test Pond A Lift #2  
 98.3%, 99%  
 6.0% moisture, 5.5%  
 14.00 Rimrock OFF-site  
 14:15 Begin Lift 3 Pond A  
 16:45 Complete 3 Lift  
 Pond A  
 16:55 Complete Debris  
 17.00 OFF-site  
 17:30 Back @ Hotel

S  
 M  
 S

Location 1525 Lakewood Date 9/5/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

10/1/12 10/1/12 month 600.00

0530 Depart Hotel  
 0535 Stop for fuel  
 0540 On-site - if R transport  
 2-us Bulk on-site  
 0615 Complete Inspections  
 + Tailgate H+S

Truck	Empty	Loaded	Tons
R-55	40160	106160	32.72
10	<del>33940</del>	103600	32.38
9	41380	105400	32.01
21	40100	105540	32.72
120	32060	79740	23.84
1543	33540	80740	23.60
138	33240	81100	23.43
393	31560	77500	22.97
118	34040	80340	23.15
104	31660	7740	24.04
182	32640	78560	22.66

Total - 294.32

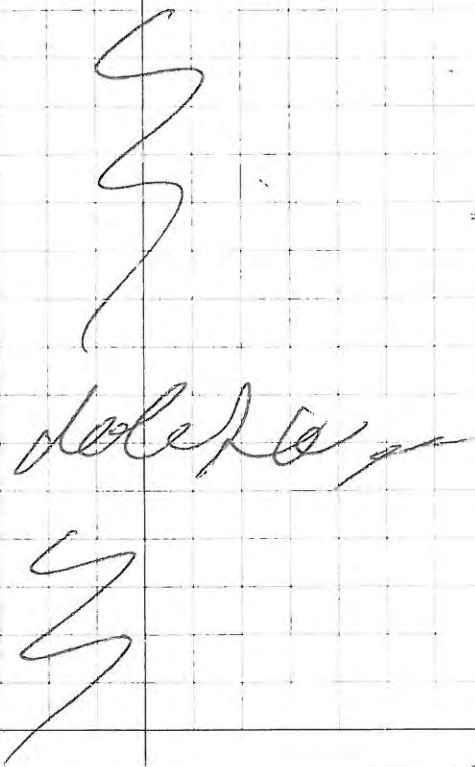
weights - ~~111~~ ~~111~~ ~~111~~ ~~111~~

Location 1525 Lockwood Date 9/15/12  
 Billing, mt CPS/LPI SI Excavation  
 Project / Client

- 9:30 Complete loading 8 trucks  
 Decon Excavator
- 10:00 Begin install Lift 4  
 Pond A
- 10:40 Allied Waste on-site  
 to pick up roll-off
- 11:00 2-us bulk on-site
- 11:15 1-us Bulk on-site
- 13:00 Lunch
- 13:15 Back on-site
- 13:30 Rimrock on-site to test  
 Lift 4
- 13:40 Meet w/ Lee regarding  
 Logistics  
 Max - 3 Rail Cars per day  
 Switch 9-10:30 am Monday  
 thru Saturday
- 14:00 Passed Lift 4 Start  
 Lift 5.
- 14:15 R. Wilkinson OFF-site  
 For Supplies
- 15:15 R. Wilkinson back ON-site

Location 1525 Lockwood Date 9/15/12  
 Billing, mt CPS/LPI SI Excavation  
 Project / Client

- 17:45 Complete Lift  
 5 ~~4~~ / Stockpile waste
- 18:00 Debrief + Depart  
 Site
- 18:30 Back @ Home



delet

Location 1525 Lockwood Date 9/6/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

0515 Depart Hotel  
 0530 On-site 4-couder Trucks  
 on-site  
 0615 Complete Inspections  
 Tailgate Safety Mtg

Truck	Empty	Loaded	Tons
505	37860	99960	31.05
529	33500	81700	24.10
545	31720	85240	26.76
508	38440	103800	32.68
71	38900	104940	33.02
65	38780	104340	32.78
67	38580	103160	32.29

Total - 212.68

0700 3 - Farley Trucks on-site  
 0745 Completed loading 4-  
 Couder Trucks  
 0800 Rimrock on-site - LIFT  
 5 passed -  
 0840 Completed Loading 3-Farley  
 4:15 Complete Pecan Dozer & Excav.  
 Weights - ~~||||~~ ||| ||

Location 1525 Lockwood Date 9/6/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

0920 Bayin Install LIFT  
 to Pond A  
 12:30 Lunch  
 13:00 Back on-site  
 13:30 Rimrock on-site  
 Pass Pond A LIFT 6  
 14:00 Bayin Pond A LIFT 7  
 15:15 GM Petroleum on-site  
 w/ 500 gallons Diesel  
 17:30 Complete Pond A LIFT  
 7  
 17:40 Delrief + OFF-SITE  
 18:00 Back @ Hotel

*Wiley*

Location 1525 Lockwood Date 9/7/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

0915 Depart Hotel

0930 Stop for ice

0945 On-site Tailgate

0910 Complete debrief + inspection

0915 R Transport on-site

Indicates only I-R Transport today

Truck	Empty	Loaded	Tons
R-55	40160	104220	32.03
138	53240	79780	23.27
1543	33540	80360	23.41
1270	32060	77280	22.61
393	31560	78620	23.53
363	33600	78380	22.39
104	31660	80320	24.33
118	34040	80300	23.13
182	32640	79400	23.38
0745	Rimrock on-site	Total	216.081

0830 Rimrock OFF-site

Passed Two tests Lift 7

Start Lift 8

weights - ~~111~~ 111

Location 1525 Lockwood Date 9/7/12  
 Billings, MT  
 Project / Client CPS/LPI SI Excavation

10:00 5<sup>th</sup> us Bulk on-site  
 12:00 1 us Bulk on-site  
 13:00 Lunch  
 13:30 back on-site  
 13:35 Rimrock on-site  
 Pass Lift 8  
 14:30 Debrief + OFF-site  
 11:45 Back @ Hotel

*[Handwritten signature]*

Location 1525 Lockwood Date 9/8/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

0645 Depart Hotel  
 0700 On-site - 6 Trucks on  
 site  
 0725 Complete Equip Inspection  
 Tailgate H+S

10:00 Complete Load out

Truck	Empty	Loaded	Tons
505	37860	102860	32.5
503	39440	101860	31.71
515	31720	84500	26.39
529	33500	85280	25.89
65	38780	104720	32.97
67	38580	104040	32.73
Total -			192.19

11:00 Complete Maint + fence  
 install

11:10 Debrief + OFF-site  
 back @ Hotel

Weights - ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

Location 1525 Lockwood Date 9/10/12  
 Billings, MT CPS/LPI SI Excavation  
 Project / Client

0530 Depart  
 0545 Arrive on-site  
 0640 US BULK TR ARRIVED OWSI  
 FOR INSPECTIONS

Truck #	Empty	Loaded	Tons
138	33740	79220	22.99
1270	32060	77880	22.91
1543	33590	78180	22.32
393	31560	77960	23.20
R55	40160	103360	31.60
104	31660	79920	24.13
118	34040	81360	23.66
182	32640	78940	23.15
363	33600	<del>Total</del> 79340	22.8
TOTAL			216.8

12:45 completed LOADING TRUCKS  
 13:00 OFF-site Debrief  
 Weights - ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

Location 1525 Lockwood Date 9/10/12  
 Billing, MT CPS/LPI SI Excavation  
 Project / Client

13:30 RW + DN Back on-site  
 For waste measurement

$$\text{Stockpile} = 75 \text{ yd}^3 \\ = 105 \text{ tons}$$

$$\text{In Place} \\ = 110 \times 135 \times 90 \\ = 10,900 \text{ ft}^3$$

~~$$50\% 2' = 10,900 \times 2 = 1,120$$~~

~~$$50\% 3' = 10,900 \times 3 =$$~~

$$50\% 2' = 5400 \times 2 = 560 \text{ tons}$$

$$50\% 3' = 5400 \times 3 = 840 \text{ tons}$$

$$\text{Total} = 1400 \text{ tons}$$

14:30 OFF-site

15:00 Back @ hotel

⚡  
 ⚡  
 Deleted  
 ⚡  
 ⚡

Location 1525 Lockwood Date 9/11/12  
 Billing, MT CPS/LPI SI Excavation  
 Project / Client

~~08:30~~ DEPART  
 08:45 ARRIVE ON SITE, TKONSITE  
 COMPLETE EQUIPMENT INSPEC.  
 COMPLETE SAFETY TAILGATE

TRUCK	EMPTY	LOADED	TONS
529	33500	<del>87140</del>	25.47
508	38440	102320	31.94
<del>545</del>	<del>31720</del>	<del>85240</del>	<del>26.79</del>
505	37860	100580	31.36
545	31720	85240	26.76
71	38900	104120	32.61
67	38580	103860	32.64
65	38780	105260	33.24
TOTAL			214.02

8:30 completed loading trucks.

WEIGHTS - ~~THH THH~~

Location 1525 LOCKWOOD Date 09/11/12  
BILLINGS, MT  
 Project / Client CPS/LPI SE EXCAVATION

230-930 STOCKPILE SOIL IN  
 CELL B  
 930-945 DECON TRACKHOR  
 945-200 LOADS CLEAN SOIL OVERBOARD  
 FROM CELL C TRANSPORT  
 AND CONSOLIDATE IN CLEAN  
 STOCKPILE.

200 DEBRIS & OFF SITE  
 230 BACK @ HOTEL

Donald Math

Location 1525 LOCKWOOD Date 09/12/12  
BILLINGS, MT  
 Project / Client CPS/LPI SE EXCAVATION

575 DEPART HOTEL  
 600-605 ON SITE, EQUIPMENT  
 INSPECTIONS, SAFETY  
 TAILGATE  
 695 1ST TRK ONSITE

TRUCK	EMPTY	LOADED	TONS
1543	33540	80280	23.37
138	33240	81600	24.18
855	40160	105080	32.46
393	31560	78160	23.36
1270	32060	77900	22.94
363	33600	78640	22.52
104	31660	79120	23.73
182	32640	79960	23.66
118	34040		

NASHUA  
 TOTAL 196.14

LAST TR LOADED @ 1200

Weights III III II

Location 1525 LOCKWOOD DR Date 09/12/12  
 BILLINGS MT  
 Project / Client CPS/LPI SI EXCAVATION

1205-1250 Lunch  
 1250-230 MOVE WASTE IN CELL B.

SOIL PRICE EST.

123 X 78 X 1.5' c	533 cy
28 X 21 X 6' c	117 cy
12 X 6 X 123/2' c	164 cy
28 X 15 X 8' c	346 cy
	<u>1160 cy</u>

230 DEBRIS @ OFFSITE  
 245 Haul

Donald Neil

Location 1525 LOCKWOOD DR Date 09/13/12  
 BILLINGS MT  
 Project / Client CPS/LPI SI EXCAVATION

545 DEPART HOTEL  
 600 ARRIVE @ SITE  
 4 TRS ON SITE  
 TAILGATE SAFETY,  
 EQUIPMENT INSPECTIONS  
 615 START LOAD OUT

TRUCK	EMPTY	LOADED	TONS
545	31720	83640	25.96
529	33500	84520	25.51
505	37860	101960	32.26
508	38440	100260	30.91
65	38780	104540	32.88
71	38900	103540	32.32
67	38580	103020	32.21
118	34040	80740	23.35
		<u>TOTAL</u>	<u>235.34</u>

830 loaded 7th load  
 1000 LOADED 8th load

WEIGHS 111111

Location ~~1525~~ 1525 LOCKWOOD Date 09/13/12  
 BILLINGS MT  
 Project / Client CPS/LPI SE EXCAVATION

1800-1200 MOVE SOIL IN Cell B  
 1200-1240 Lunch  
 1240-130 MOVE SOIL IN Cell B  
 130-200 Six Leak on Tractor  
 200-230 move SOIL IN Cell B  
 230 SAFETY DEBRIS  
 240 OFFSITE  
~~245~~ Back @ HOTEL

Donald Neill

Location 1525 LOCKWOOD DR Date 09/14/12  
 BILLINGS MT  
 Project / Client CPS/LPI SE EXCAVATION

545 Depart Hotel  
 600 ONSITE EQUIPMENT  
 615 INSPECTIONS, SAFETY TRAILGATE  
 MEETING, TRS NOT ONSITE  
 630 LOAD 1ST TR

TRUCK	EMPTY	LOADED	TONS
1543	33540	78180	22.32
138	33240	81140	23.95
182	32640	79140	23.25
1270	32060	78560	23.25
393	31560	78660	23.55
363	33600	78300	22.35
104	31660	80060	24.20

TOTAL 167.81

1200 LOADED LAST TR  
 1205-1250 lunch  
 1250-145 DECON TRACTOR BKT  
 weights 11/11

Location 1525 LOCKWOOD DN Date 09/14/12Project/Client BILLINGS MT  
CPS/CPI SI EXCAVATION

115 - 220 more asphalt to  
make parking lot base

220 - 230 Debit

230 OFFSITE

245 9 mile HOTEL

Donald Neil

The manufacturers of "Rite in the Rain" all-weather writing products are grateful to the numerous environmental experts who have contributed to the development of this book. Should you have any additions, improvements or corrections for future publications of this field book or have suggestions for other environmental field book formats, we welcome your input.

Although much effort has been taken to insure the accuracy of the following reference pages, the J. L. Darling Corp. can not guarantee the accuracy of the data contained herein.

To provide input or solicit pricing on these or custom printed field books, contact your "Rite in the Rain" dealer or J. L. Darling Corp., 253-922-5100 or fax 253-922-5110  
www.riteintherain.com

### Common Field Data Error Codes

Error Codes Are Used to Explain Common Mistakes and Are Written Above or Close to the Mistake  
Commonly Used Error Codes Include:

- RE Recording Error
- CE Calculation Error
- TE Transcription Error
- SE Spelling Error
- CL Changed for Clarity
- DC Original Sample Description  
Changed After Further Evaluation
- WO Write Over
- NI Not Initialed and Dated at Time of Entry
- OB Not Recorded at the Time of Initial Observation

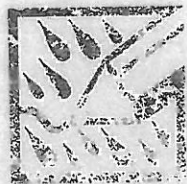
Note: Error Code Should Be Circled, Dated And Initialed When Recorded.

### Hazard Classifications

- Class 1 Explosives
- Class 2 Gas
- Class 3 Flammable Liquid
- Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
- Class 5 Oxidizing Substances and Organic Peroxides
- Class 6 Toxic (poisonous) and infectious substances
- Class 7 Radioactive material
- Class 8 Corrosives
- Class 9 Miscellaneous dangerous goods

### Container type abbreviations (for sampling guidelines):

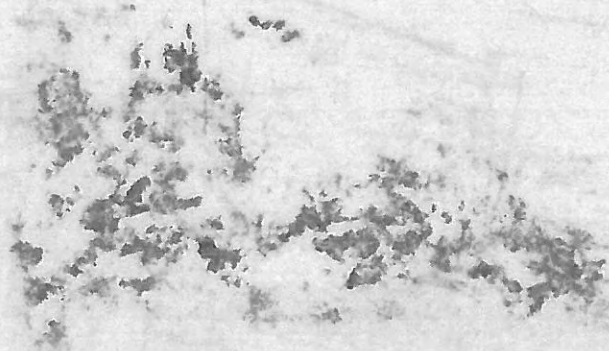
- BR - Boston Round
- ABR - Amber Boston Round
- AJ - Amber Jug
- CWM - Clear Wide Mouth
- AWM - Amber Wide Mouth
- Poly - Polyethylene Bottles
- BOD Bottle



*Rite in the Rain*®

ALL-WEATHER  
FIELD BOOK

№ 350



### CONTENTS

PAGE	REFERENCE	DATE
1	CPS/LPI SI Excavation	9/15/12



### ALL-WEATHER FIELD BOOK

Name Robert Wilkinson

CPS Contracting Services, LLC

Address 200 N 2nd Street  
Nashville, TN 37213

Phone 615-256-0165

Project CPS/LPI SI Excavation  
1525 Leckwood  
D. Kings, MT

*Rite in the Rain* – A patented, environmentally responsible, all-weather writing paper that sheds water and enables you to write anywhere, in any weather. Using a pencil or all-weather pen, *Rite in the Rain* ensures that your notes survive the rigors of the field, regardless of the conditions.

Specifications for this book:

Page Pattern		Cover Options	
Left Page	Right Page	Polydura Cover	Fabrikoid Cover
Columnar	1/4" Grid	Item No. 350	Item No. 350F

[RiteintheRain.com](http://RiteintheRain.com)

1525 LOCKWOOD DR  
 ① BILLINGS MT 09/15/12  
 CPS/LPI SI Excavation

600 depart Hotel  
 615 arrive onsite, TRUCKS onsite  
 625 SAFETY TAILGATE, EQUIPMENT INSPECTION

TRUCKS	EMPTY	LOADED	TONS
529	33500	84120	25.13
545	31720	84160	26.22
505	37860	101860	32.00
508	38440	102260	31.91
118	34040	78980	22.47
		TOTAL	137.73

930 LOADED LAST TR.  
 930/1030 Breakfast  
 1030-1045 Decon TRACKER BET.  
 1045-300 Move WASTE on Cell B, Suel DOZER  
 load & move asphalt  
 Compact asphalt  
 300 310 Debrief safety tailgate  
 310 330 Travel to hotel

Donald Neill

Weights ~~||||~~ ||

1525 LOCKWOOD DR  
 ② BILLINGS MT 09/17/12  
 CPS/LPI S& EXCAVATION mon

600 DEPART HOTEL  
 615 ONSITE, TRKS ONSITE  
 SAFETY TAILGATE, EQUIPMENT  
 630 INSPECTIONS  
 630 BEAM LOADOUT

TRUCKS	EMPTY	LOADED	TONS
1543	33540	78640	22.55
71	38900	104880	32.99
R52	40560	105360	32.40
65	38780	104360	32.79
138	33240	79420	23.09
1270	32060	79140	23.54
67	38580	105420	33.42
393	31560	77880	23.16
182	32640	80340	23.86
363	33600	79460	22.93
		TOTAL	270.72

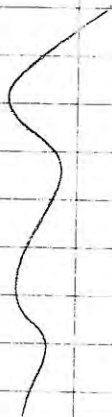
1100 LOADED LAST TR.  
 1100-1115 DECON TRACKER  
 1115-1200 SITE CLEANUP

Weights ~~||||~~ ~~||||~~ ||||

③ 1525 CORKWOOD DR  
 BILLINGS MT 09/17/12  
 CPS/LPI SE EXCAVATION

1200-100 LUNCH  
 100-300 MOVE SOIL IN CELLS.  
 RAKE DOWN ASPHALT &  
 COMPACT. LOAD OUT AND MOVE  
 2 LOADS OF ASPHALT.  
 300 315 SAFETY DEBRIEF.  
 315 CREW OFFSITE. I WAITED  
 W/ DIANA AND STATE INSPECTORS,  
 345 OFF SITE  
 400 HOME DEPOT

Donald Hill



④ 1525 CORKWOOD  
 BILLINGS, MT 9/18/12  
 CPS/LPI SE EXCAVATION

0530 Depart Hotel - RW, DW, KH, TS, JS  
 0550 ON-site 4 Trucks outside  
 675 SAFETY TAILGATE, EQ INSPECTIONS

New  
 wt.  
 90K  
 7

102K  
 \*  
 90K  
 7

Truck	Empty	Loaded	Tons
505	39600	91460	25.93
508	38410	102380	31.97
515	37760	102180	32.21
529	40560	90040	24.74
89	41040	105860	32.41
144	40480	104920	32.22
118	34040	80720	23.34
104	31660	79340	23.84

TOTAL 226.66

10:00 Begin Air Knife C-1  
 1045 LOADED LAST TR  
 11:00 Complete C-1 Liner  
 9.5' = 4.5' waste  
 12:00 Lunch  
 12:50 Rimrock ON-site to collect  
 Proctor Samples  
 13:00 Rimrock OFF-site  
 13:05 PSC Lunch

weights MIXTURE

⑤ 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/18/12

Location	Upper	Waste	Lower	Thickness
C-1	18"	5'	9.5'	4.5'
C-2	2'	4'	10"	6"
C-3	16"	2'	6.5	2.5'
C-4	16"	2.5'	6.5	3.5' 4'
C-5	18"	None	7'	0'
C-6	2'	4'	5.5'	1.5'

18:50 Complete C-2

19:00 Debris off site

19:30 Back to Hotel

*Relief work*

*Relief work*

⑥ 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/19/12

05:35 Depart Hotel  
06:00 On-site - RW, TS, OK, KH

PSC on-site

Two Trucks

07:00 Begin C-3

09:45 Complete C-3

TRUCK	EMPTY	LOADED	TONS
71	38900	109380	32.74
1543	33540	79720	23.09
R52	40560	103660	31.55
65	38780	105220	33.22
138	33240	79220	22.99
67	38580	103060	32.24
363	33600	78520	22.46
1270	32060	79120	23.53
182	32640	79940	23.65
393	31560	79660	24.05

TOTAL 269.52

10:00 completed hauling

Trucks

10:25 Begin C-4

11:00 Complete C-4

11:45 Lunch

WEIGHTS IIII IIII IIII II

⑦ 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/19/12

12:15 Back on-site  
13:45 KIT & TS OFF-SITE  
17:30 Complete C-6  
17:45 Debrief + OFF-SITE  
18:00 Back @ Hotel

*Why*

⑧ 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/20/12

05:30 Depart Hotel  
06:00 On-site  
06:10 Complete Tailgate H&S  
06:15 Begin Loading Trucks

Truck	Empty	Loaded	Tons
529	40540	90840	25.14
505	39600	91240	29.82
545	37760	101620	31.93
508	38440	102300	31.93
118	34040	82460	24.21
89	41060	109360	31.90
144	40480	105180	32.35
104	31660	79840	24.09

Total - 227.37

08:00 PSC/AECOM On-site  
09:20 AECOM OFF-SITE  
10:00 Completed loaded trucks  
11:00 Pond B+C Estimates

Pond C

Backfill - 16 days Load out -  
Compaction Testing - ~~24~~ tests 30 tests  
Fill -

Weights - ~~111~~ 111 111

⑨

1525 Lockwood  
Billings, MT  
CP&LP SE Excavation

9/20/12

Pond B

Import Fill - 5,500 tons = \$46,200.00

Backfill - 9 days

Comp tests - 24

Fill delivery - 170 hours = \$9,945.00

11:45 Debrief + OFF-site

12:00 Buck @ Hotel

*[Handwritten signature]*

*[Handwritten signature]*

⑩

1525 Lockwood  
Billings, MT  
CP&LP SE Excavation

9/21/12

0930 RW on-site

0945 Two trucks on-site

0600 Crew on-site

0615 complete Tailgate Hts

Truck	Empty	Loaded	Tons
1543	33540	79280	22.87
71	38900	104260	32.68
67	38990	104560	32.99
363	33600	78600	22.90
1270	32060	74400	23.67
393	31560	<del>79020</del>	23.73
182	32640	74000	23.18
65	No	Show	
138	No	Show	

Total - 181.62

0630 Complete inspections and  
begin loading trucks

11:00 Lunch

11:30 Buck on-site

14:00 OFF-Project for Safety  
Call

*[Handwritten signature]*

Weights - ~~111~~ ~~111~~

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/22/12

0530 Depart Hotel

0545 on-site

0610 Complete daily Tailgate 1 Truck

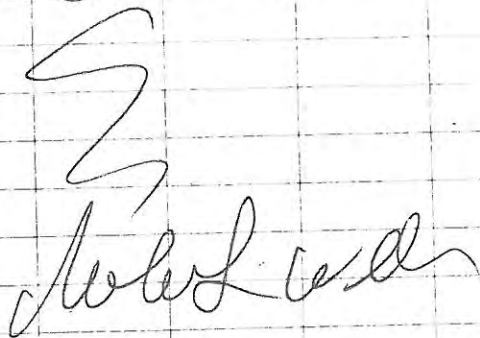
on-site

0630 Begin Load out

Truck	Empty	Loaded	Tons
545	37760	100880	31.56
89	41000	105740	32.37
144	40460	104800	32.17
529	40660	39200	102340
			Total - 127.44

10.30 Depart Site

11:00 Back @ Hotel



weights - ~~111~~ 111

12

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/24/12

0530 Depart Hotel

0550 on-site Two trucks

on-site

0615 Begin loading trucks

Truck	Empty	Loaded	Tons
508	31800	91700	25.95
505	39600	90940	25.62

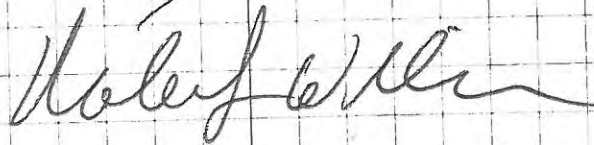
Total - 51.57

0700 Completed loading trucks

0830 Depth Pond B-12'

08.45 Debrief + Depart Site

0900 Back @ Hotels



weights - ~~111~~ 111

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/25/12

05:30 RW on-site  
0550 TS & EX on-site  
0610 Complete Tailgate H&S / Insp  
0615 Begin Loading Trucks

Truck #	Empty	Loaded	Tons
71	38900	105280	33.19
65	38780	105900	33.51
89	41040	105580	32.27
144	40460	105460	32.50
51	38280	105360	33.54

Total - 165.01

0830 Completed loading Trucks

AECOM on-site

10:25 Completed 24-hr waste (9)

Sampling - Samples sent  
w/ Derek to Energy Labs

11:45 Complete Soil Sampling (4)

12:00 Lunch

12:30 Back on-site - Relocate  
Pothole Stockpiles

14:30 Delorie F + OFF on-site

14:45 Back @ Hotel

weights - ~~||||~~ ||| |||

Walter

⚡

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/26/12

0530 Depart Hotel  
0545 On-site  
0555 Truck on-site  
0600 Receive Notification From  
Linda Hendrickson to excavate F-2

Truck	Empty	Loaded	Tons
93	40500	105180	32.34
67	38580	105480	33.45

Total - 65.79

0630 Complete Tailgate H&S  
and equipment inspection  
and begin loading trucks

0745 Complete loading Trucks  
Construct Ramp Cell B

0905 AECOM on-site  
to collect Sample  
From F-2

10:30 OFF-site to pick  
up Manny @ Airport

11:05 Back on-site

11:30 Lunch

12:00 Back on-site

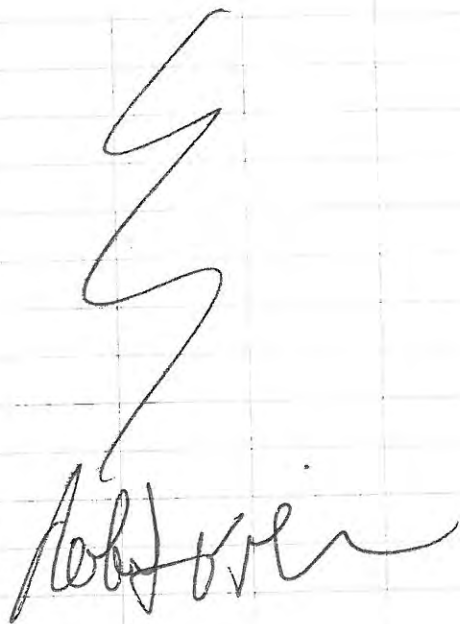
14:50 Rimrock on-site to test

weights - ||| Pond DIFT 1

15 1525 Lockwood  
Billings, MT  
SICPS/LPI Excavation

9/26/12

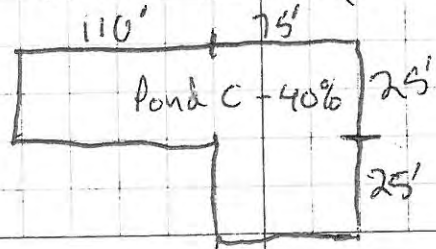
- 13:15 Rimrock OFF-site  
Passed 2 compaction  
tests
- 16:36 CPS Truck & Trailer Drive  
thru our Construction Area
- 17:30 Debrief & Depart Site  
17:45 ~~at~~ at Hotel



16 1525 Lockwood  
Billings, MT  
CPS/LPI Excavation

9/26/12

- 0645 Depart Hotel  
0700 ON-site  
0715 Complete equip inspections  
and daily Tailgate Safety  
Mtg, begin compaction  
Pond B Lift 2
- 0800 Rimrock on-site For comp  
testing
- 0815 Begin Excavation Pond  
C 0-2 Ft N
- 0820 Rimrock OFF-site  
Passed 2 compaction  
tests Pond B Lift 2
- 10:50 R. Wilkinson OFF-site  
For Supplies
- 12:30 R. Wilkinson on-site
- 14:15 Completed Pond C  
40% 0-2' N and  
liner removal



⑦ 1525 Lockwood  
Billings, MT 9/27/12

CPS/LPI SI Excavation  
15:00 Pond C calculations

$$185 \times 28 \times 2 = 350 \text{ yd}^3$$

$$75 \times 25 \times 2 = 140 \text{ yd}^3$$

$$\text{Total} = 490 \text{ yd}^3$$

per 2" Lift

### Backfill Loads

<u>Loaded</u>	<u>Empty</u>	<u>Tons</u>
120,420	43,000	38.46
118,220	43,000	37.61
120,840	43,000	38.42
122,180	43,000	39.59
117,680	43,000	37.34
114,800	43,000	38.40
124,200	43,000	40.85
127,680	41,000	43.34
		Total = 315.01

17:50 Complete Activities

Depart Site

18:15 Back @ Hotel

*Wulfer*



⑧ 1525 Lockwood  
Billings, MT 9/28/12

CPS/LPI SI Excavation

0645 Depart Hotel

0700 On-site

0725 Completed inspections  
& Tailgate H&S Mtg

0815 Take w/ Accom on-site

10:05 Rimrock on-site

10:20 Rimrock OFF-site  
Passed 2 tests  
Lift 3

10:25 3 Samples Collected  
by Accom (1-0-2C, 1-  
2-4C, Depo 0-2C)

11:30 RW+TJ OFF-site For  
Lunch

12:00 Back on-site

13:00 R. Wilkinson OFF-site  
For Supplies

14:00 Tom Johnson  
OFF-site

1401 Allied waste OFF-site

15:00 Rimrock on-site

15:20 Rimrock OFF-site  
Passed 2 Compaction  
tests Pond C Lift 34

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/28/12

13:30 Damaged OBS-4 w/ Excavation

Truck	Empty	Loaded	Tons
0669WT	40680	124420	41.87
		124380	41.85
		125180	42.25
		130220	44.77
		115960	37.64
		123060	41.19
		122860	41.09
		122200	40.76
9970WT	42690	119600	38.45
		127640	42.48
		124200	40.26
		125400	41.36
		125920	41.62
		129220	43.27
		119840	38.58
		121480	39.40
		123120	40.23
KR	NA	NA	27.70
			29.79
			28.65
			28.64
			28.74
			30.39
			27.14
			31.55
			27.9

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

9/28/12

13:45 completed Repair  
OBS-4

17:30 Last Truck on site

Total Backfill - 958.05 ton

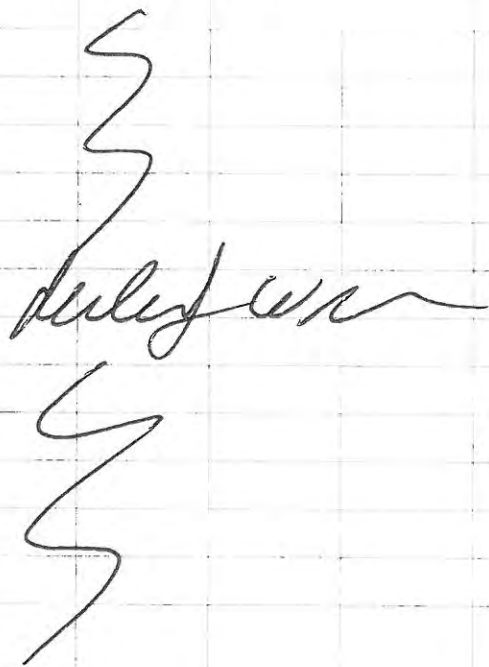
17:45 Debris + Depart Site

1800 back @ Hotel

*Handwritten signature*

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation  
9/21/12

0715 Depart Hotel  
0730 on-site  
11:30 Lunch  
12:00 back on site  
15:15 Completed Placement  
& compaction Lift 5 Pond  
B  
16:15 Complete cutting New  
ramp Pond B  
16:30 Debrief & Depart Site  
16:45 Back @ Hotel



1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation  
10/1/12

0620 Depart Hotel  
0645 RW on-site - 9 Trucks  
07:10 Complete Tailgate/Insp  
Truck Empty Loaded Tons  
142 40200 104700 32.25  
45 40840 105960 32.36  
67 40660 104760 32.05  
89 40640 105480 32.42  
91 40760 105660 32.45  
Total - 161.53

0715 Begin loading Trucks  
0735 Complete loading Trucks  
0836 Rimrock on-site passed  
two compaction tests  
Pond B Lift 5  
11:30 RW + TJ OFF-site  
For Lunch & Poly  
12:40 RW + TJ Back on-site  
17:30 Debrief + OFF-site  
17:45 Back @ Hotel  
Note - Import Fill - 632.19



Weights - 121 411

23 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/2/12

0620 Depart Hotel

0630 Stop for gas

0650 Caught by Train

0655 on-site

0710 Complete H&S/Inspections

Truck	Empty	Loaded	Tons
65	38780	105060	33.14
51	38280	104980	33.35
71	38900	102460	31.78
144	40460	105540	32.54
67	38580	103540	32.48

Total - 163.29

0820 Completed loading Trucks

0840 Rimrock off-site passed  
two compaction tests Pond  
B Lift 6, Start Lift 7 Pond  
B

0950 Accom off-site collected  
2 Samples

10:00 Allied Waste on-site to  
do switch out on roll

OFF containers

11:45 Lunch

weights - 1111

24 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/2/12

12:15 Back on-site

16:15 Last Back Fill Load

850.61 tons total

17:30 Debrief & off-site

18:00 Back @ Hotel

A large handwritten signature, possibly 'Robert', is written across the right page. Above and below the signature are several large, stylized scribbles or checkmarks.

(25)

1525 Lockwood  
Billings, MT  
CPS/HPI SI Excavation

10/3/12

0645	Depart Hotel		
0700	on-site		
0710	Complete	Tailgate	4+5
745	Begin	loading	Trucks
<u>Truck</u>	<u>Empty</u>	<u>loaded</u>	<u>Tons</u>
95	40940	105160	32.16
87	40660	106440	32.89
91	40760	105600	32.42
142	40200	104460	32.13
89	40640	106320	32.84
			Total - 162.44

0742 Rimrock off-site pass  
two compaction tests  
Lift 7, Begin Pond B  
Lift 8  
Note - began raining @ 07:20

0820 Completed loading trucks

0850 Snow

12:00 Lunch

1230 Back on-site

1415 Rimrock on-site pass  
2 compaction tests  
Lift 8, Begin Pond B  
Lift 9

(26)

1525 Lockwood  
Billings, MT  
CPS/HPI SI Excavation

10/3/12

16:00 WT completed importing  
Fill - 779.49 tons

16:20 KR completed importing  
Fill - 687.36  
Total Fill - 1,466.85

17:10 complete placement  
+ compaction 50%  
Lift 8 Pond B

17:15 Depart + Depart Site

17:30 Back @ Hotel

*John*

(27)

1525 Lockwood  
Billings, MT

10/4/12

CPS/LPI SI Excavation

0645 Depart Hotel

0700 On-site

07:10 Complete Tailgate H&S

0735 Complete Insp begin loading  
trucks

Truck	Empty	Loaded	Tons
51	38280	105180	33.45
65	38780	105260	33.24
71	38900	104800	32.95
144	40460	106180	32.86
67	38560	105400	33.41

total - 165.91

0930 Complete loading Trucks

1015 Rimrock OFF-site passed

2 compaction tests Lift 9

Pond B, Begin Lift 10

12:00 TS OFF-site For Lunch

12:30 TS Back on-site

16:15 Last load WT - 862.86

16:20 Last load KR - 754.67

Total - 1,617.53

16:30 Rimrock OFF-site Passed 2

Compaction Tests Pond B

LIFT 10

17:00 Depart OFF-site

17:30 Back @ Hotel

*Julio*

(28)

1525 Lockwood  
Billings, MT

10/5/12

CPS/LPI SI Excavation

0645 Depart Hotel

0700 On-site

07:10 Complete Tailgate H&S

0730 Complete Inspections  
begin loading trucks

Truck	Empty	Loaded	Tons
85	40340	105180	32.02
87	40660	104140	31.74
91	40260	105680	32.46
142	40200	104060	31.93
89	40640	105140	32.25

Total - 160.40

0830 Completed loading Trucks

11:30 Rimrock On-site

11:40 Rimrock OFF-site

passed 2 compaction  
tests Pond B Lift 11

11:45 RW & TS OFF-site For

Supplies/Lunch

1300 Back on-site

15:00 completed importing Fill

KR - 655.65

WT - 624.33

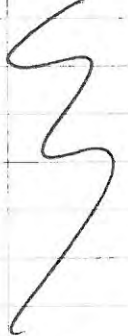
Total = 1279.38

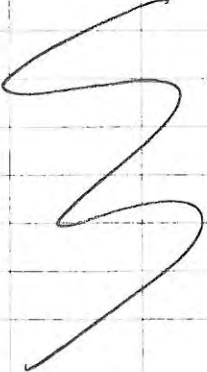
① 1525 Lockwood Billings MT 10/5/12  
CPS/LPI SI Excavation

15:50 Rimrock OFF-SITE  
passed 2 compaction  
Tests Pond B Lift 12  
Pond B 100% Backfilled

16:00 Debrief + OFF-SITE

16:30 Back @ Hotels

  
Wilkinson



② 1525 Lockwood Billings, MT 10/6/12  
CPS/LPI SI Excavation

07:15 Depart Hotel

07:30 on-site

08:00 Complete tailgate Safety  
+ Equip Inspections

11:45 R. Wilkinson OFF-SITE

13:30 Back on-site

15:20 Complete Excavation  
Pond C, Bay in Fence  
Installation / Stockpile  
Covering


Note: 100% Pond C 0-2'


100% Pond C 2-4'

90% Pond C 2-4'

16:30 Depart Site

17:00 Back @ Hotel

  
debrief



31

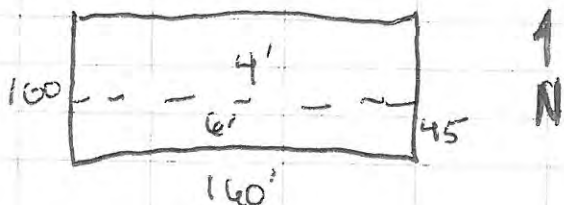
1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/18/12

- 0630 Arr Depart Hotel
- 0650 On-site
- 0700 Crew on-site
- 0710 Complete Tailgate H+S Mtg
- 0715 Complete inspections

Truck	Empty	Loaded	Tons
51	39280	106040	33.88
144	40460	106340	32.94
93	40820	103840	31.51
71	38900	104300	32.20
67	38580	105940	33.68
		Total -	164.63

- 0920 Rain showers
- 0940 Completed Loading Trucks
- 0920 Depart Site - Rmt DB For Supplies
- 10:10 Rmt DB Back on site
- 10:20 Complete Pond C Overburden Removal



32

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/18/12

- 1030 Waste Calculation  
 $160 \times 45 \times 6 = 2,240 \text{ tons}$   
 $160 \times 55 \times 4 = 1,760 \text{ tons}$   
 total = 4,000 tons
- 11:45 Loader on-site
- 12:05 Lunch
- 12:40 Back on-site
- 12:55 Conference call regarding tail loading
- 13:45 Loader weight  
 Empty - 52,140  
 Loaded - 66,820  
 Tons - 7.34 tons
- 14:30 Depart + Depart Site
- 15:00 Back @ Hotel

Nelson

(33)

OYS/LPI SE EXCAVATION  
TUES. 10/9/12 PTH DAY 37°F

0700 OCS ONSITE CONDUCT SAFETY BRIEFING

0725 COMPLETE INSPECTIONS, BEGIN LOADOUT OF SOIL

TRUCK	TARE	GROSS	LOAD TONS
85	40840	103840	31.50
87	40660	105300	32.32
91	40760	106040	32.64
142	40200	105580	32.69
89	40640	104400	31.88
DAILY TOTAL			161.03

0815 AECOM SAMPLE TEST ONSITE TO SAMPLE OVERBURDEN STOCKPILES

0845 LOAD OUT OF TRUCKS COMPLETE

0930 US ECOLOGY AND MONTANA RAILWAY REYS ONSITE MET W/ MARIE MCMONIGLE CORPORATE LOGISTICS MGR MOB (208) 941-6343. TO GO OVER PAPERWORK REQ FOR RAIL SHIPMENTS

(34)

TUES. 10/9/12 (CONT)

1000 VISIT RAIL SPUR LOADING SITE WITH LPI & US ECOLOGY AECOM OFFSITE

1030 OCS EXCAVATING WASTE IN POND C FOR LOADOUT STOCKPILE.

1100 EXCAVATION COMPLETE. PREPARE RAIL LOAD COUNT GUIDELINES

	BUCKET WT.	TONS
OVERBURDEN STOCK	BUCKET 7.34 TONS	<del>15</del>
80% OB / 20% WASTE	7.00 TONS	15
50% OB / 50% WASTE	6.60 TONS	16
10% OB / 90% WASTE	5.50 TONS	19

NET WT FOR MANIFEST (ESTIMATED)

80% OB / 20% WASTE	14,000 x 15 =	210,000 LBS
50% OB / 50% WASTE	18,200 x 16 =	291,200 LBS
10% OB / 90% WASTE	11,000 x 19 =	209,000 LBS

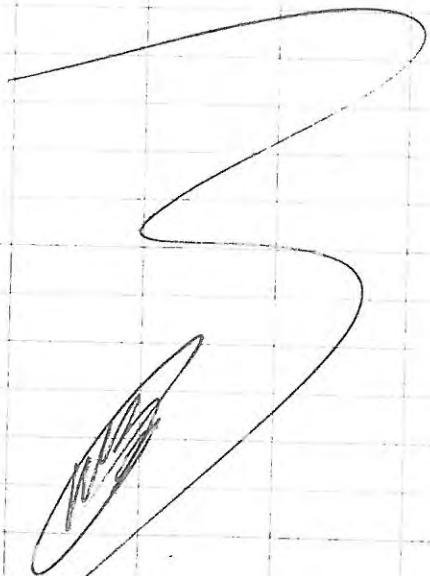
1130 BREAK FOR LUNCH

(35)

TUES. 10/9/12 (CONT)

1300 FIRST 3 CONISOLA RAILCARS  
STOPPED ON EAST RAIL SPUR  
OCS OPENS LINERS AND  
PRACTICES LINING ONE CAR

1400 CONDUCT SAFETY DEBRIEF  
OCS OFFSITE FOR DAY



(36)

WED. 10/10/12 SUNNY 44°F

0700 OCS ONSITE CONDUCT SAFETY  
BRIEFING.

0715 COMPLETE EQUIPMENT INSPECTIONS  
BEGIN LOADING TRUCKS

TRUCK	TARE	GROSS	LOAD TONS
51	38280	106200	33.96
93	40820	105580	32.38
144	40460	105700	32.62
6T	38880	104600	32.86
DAILY TOTAL			131.82

0840 LOAD OUT OF TRUCKS COMPLETE, ONLY  
4 TRUCKS TODAY DUE TO BREAK DOWN  
OF ONE OF THE RIGS, WILL HAVE  
6 TRUCKS TOMORROW.

\* LAST TRUCK NO. 6T HAD LARGE  
AMOUNT OF DEBRIS PLACED IN PUP  
PROFILE VARIANCE NOTED ON MANIFEST.

0900 BEGIN LINING FIRST RAILCAR NO.

(37)

WED 10/10 (CONT)

0930 BEGIN LOADING FIRST CAR  
WILL CALL THIS MATERIAL  
80% OB / 20% WASTE AND  
WILL PUT 15 BUCKETS IN EACH  
CAR YIELDING AN ESTIMATED  
LOAD WT. OF 210,000 LBS.

LATE ENTRY: MARIE OF US ECOLOGY &  
KEN WITH PSC ONSITE TO  
OVERSEE RAIL OPS

1045 FINISH LOADING 1ST CAR, PSM  
AUDIT TEAM IS OUTSIDE NEAR  
~~1100~~ CARS - OCS TAKES EARLY LUNCH  
BREAK.

1145 BACK ONSITE BEGIN SECURING 1ST  
LINER

1205 1ST LINER SECURE CAR COMPLETE  
1.5 HOURS TOTAL

1215 BEGIN SETTING LINER IN SECOND  
CAR

1230 2ND LINER SET

(38)

WED 10/10 (CONT)

1240 BEGIN LOADING 2ND CAR

1400 FINISH SECOND CAR BEGIN SECURING  
LINER.

1420 BEGIN SETTING LINER IN 3RD  
CAR

1445 BEGIN LOADING 3RD CAR

1600 FINISH 3RD CAR SECURING  
LINER

1630 ALL SITE AREAS SECURE, CHECK  
WITH FEET OFFICE TO ENSURE  
RAIL PAPER WORK WENT OUT

1700 OCS OFFSITE FOR DAY

(39)

THURS. 10/11/12 CLOUDY FOG 37°F

0700 OCS ONSITE CONDUCT SAFETY BRIEFING.

0715 COMPLETE EQUIP INSPECTIONS  
BEGIN LOADING TRUCKS

TRUCK	TARE	GRS	LOAD TONK
85	40840	105680	32.42
71	38900	104100	32.60
87	40660	106,000	32.67
91	40760	105,400	32.32
142	40200	105,180	32.49
89	40640	105,500	32.43
DAILY TOTAL			194.93

0830 TRUCK LOADOUT COMPLETE

1045 MONTANA RAILLINK ONSITE FOR 1<sup>ST</sup> SWITCH.

1100 CARS SET AND RECORDED, BEGIN PLACING LINER

1115 BEGIN LOADING FIRST CAR NO. 242 CHUX

1245 FINISH LOADING 242, SECURING LINER  
TAKE RAIL PAPERWORK TO FRONT DESK

1305 OCS BREAK FOR LUNCH.

(40)

THURS. 10/11/12 (CONT)

1345 OCS BACK ON SITE BEGIN LINING 2<sup>ND</sup> CAR NO. 259 CHUX

1410 BEGIN LOADING 2<sup>ND</sup> CAR

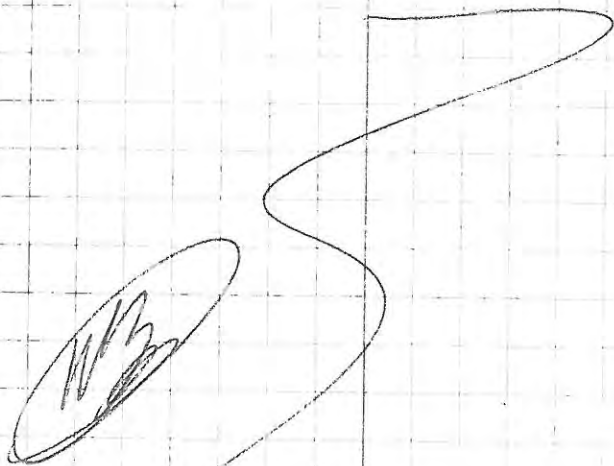
1530 FINISH LOADING 259, SECURING LINER

1550 BEGIN ~~SETTING~~ LINER IN 3<sup>RD</sup> CAR NO. 286

1615 BEGIN LOADING LAST CAR

1710 FINISH LOADING LAST CAR

TRAD OCS OFFSITE FOR THE DAY



(41)

FRI. 10/12/12 PTH CLDY FOG 32°F

0650 OCS ONSITE CONDUCT SAFETY BRIEFING

0715 COMPLETE EQUIP INSPECTIONS BEGIN LOADING TRUCKS

TRUCK No.	TARE	GROSS	LOAD TONS
65	38800	104500	32.86
51	38280	105700	33.71
144	40460	106700	32.87
93	40820	104700	31.94
DAILY TOTAL			131.38

0830 COMPLETE TRUCK LOAD OUT

0835 5<sup>TH</sup> TRUCK STOWED UP CAFE

TRUCK No.	TARE	GROSS	LOAD TONS
67	38800	105640	33.38

DAILY TOTAL 164.76

0845 NOW COMPLETE WITH TRUCK LOADOUT

1030 MONTANA RAIL LINK ONSITE FOR SWITCH

(42)

FRI. 10/12/12 (CONT)

~~1030~~ BEGIN LOADING 1<sup>ST</sup> CAR No. 1601230 FINISH LOADING 1<sup>ST</sup> CAR AND SECURING LINER. OCS BREAK FOR LUNCH

1315 BACK ONSITE LINING SECOND CAR No. 321

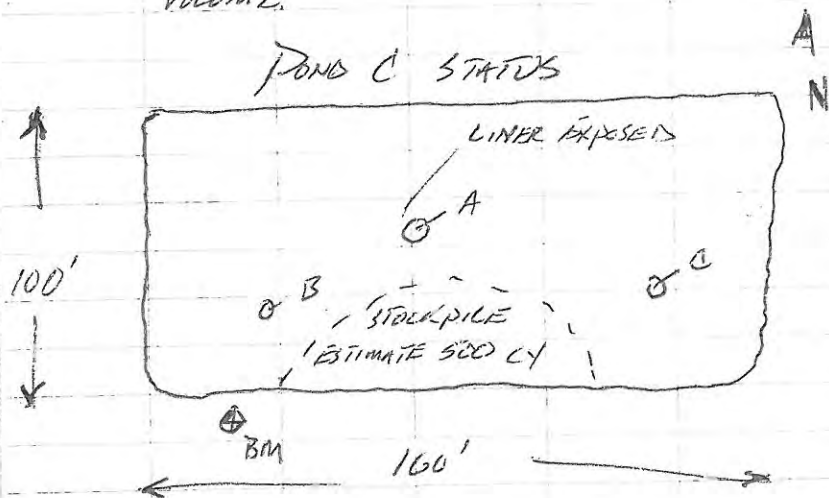
1330 BEGIN LOADING 2<sup>ND</sup> CAR1500 FINISH LOADING AND SECURING LINER IN 2<sup>ND</sup> CAR1510 BEGIN LOADING 3<sup>RD</sup> CAR No. 2131610 FINISH LOADING & SECURING LINER ON 3<sup>RD</sup> CAR ESTIMATE 315 TONS

1630 OCS OFFSITE FOR THE DAY

(43)

SAT, 10/13/12 PM CLAY 45°F

0900 OCS ONSITE CONDUCT SAFETY BRIEF  
RAILCAR SWITCH HAS NOT OCCURRED  
OCS WILL TAKE SOME ELEVATIONS  
FROM BASE OF POND C TO  
DETERMINE REMAINING WASTE  
VOLUME.



- A)  $13.90 - 4.48 = 9.32'$  DEEP  
 B)  $11.30 - 4.48 = 6.82'$  DEEP  
 C)  $10.70 - 4.48 = 6.22'$  DEEP

0930 MONTANA RAIL LINK ONSITE FOR  
DAILY SWITCH  
ESTIMATE BETWEEN 1600 AND 2000  
CY YDS REMAIN IN HOLE

(44)

SAT 10/13/12 (CONT)

0945 BEGIN LOADING 1<sup>ST</sup> CAR NO. 255  
 1120 FINISH LOADING AND SECURING LINER  
IN FIRST CAR  
 1140 BEGIN LOADING 2<sup>ND</sup> CAR NO. 158  
 1250 FINISH LOADING AND SECURING LINER  
IN SECOND CAR  
 1310 BEGIN LOADING 3<sup>RD</sup> CAR NO. 128  
 1440 FINISH LOADING AND SECURING  
LINER IN ~~THIRD~~ CAR  
 1500 OCS OFF SITE FOR THE DAY

WBS

(45)

MON, 10/15/12 PTH CLOUD 55°F

0700 OCS ONSITE, CONDUCT SAFETY BRIEF

0720 COMPLETE EQUIPMENT INSPECTIONS  
BEGIN LOAD OUT OF HAZ SOIL

TRUCK NO.	TAKE	GROSS WT	LOAD TONS
85	40840	104200	31.68
87	40660	105400	32.37
142	40200	104480	32.14
91	40760	105800	32.57
		DAILY TOTAL	128.71

0815 COMPLETE TRUCK LOADOUT

1000 MONTANA RAIL LINK ONSITE TO  
SWITCH CARS

1030 BEGIN LOADING 1ST CAR NO. CHUX 271

1145 FINISH LOADING FIRST CAR, SECURING  
LINER

1200 OCS BREAK FOR LUNCH

1230 SECURING LINER IN SECOND CAR  
NO. CHUX 189

(46)  
10/15/12 (CONT)

1245 BEGIN LOADING 2<sup>ND</sup> CAR  
NO. CHUX 169

1400 FINISH LOADING 2<sup>ND</sup> CAR AND  
SECURING LINER

1430 BEGIN LOADING 3<sup>RD</sup> CAR  
NO. 195 CHUX

ESTIMATE 1,200 CU YDS LEFT  
IN HOLE AFTER TODAY'S LOADING

1545 FINISH LOADING AND SECURING  
LAST LINER

1600 OCS OFF SITE FOR THE DAY

(47) 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/16/12

- 0645 Depart Hotel
- 0700 On-site
- 0725 Complete Tailgate H&S / Inspections
- 0730 Begin Loading Trucks

Truck #	Empty	Loaded	Tons
51	38280	105920	33.82
65	38780	104960	32.89
144	40460	104320	31.93
93	40820	No Show	
62	38880	103460	32.54
			Total - 131.18

- 0940 Rail car switch out
- 10:00 Begin Loading 1st Rail Car  
CHUX 174
- 11:15 Complete loading 1st Rail  
Car, Place Liner 2nd Rail Car
- 11:30 Begin loading 2nd Rail car  
CHUX 183
- 12:45 Complete 2nd Rail Car  
Off-site For Lunch
- 13:30 Back on-site, Begin Lining /  
Loading 3rd Railcar  
CHUX
- 15:15 Completed Loading Trucks
- 15:25 Depart Site
- 16:00 Back @ Hotel

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/17/12 (48)

- 0645 Depart Site
- 0700 On-site
- 0715 Complete Tailgate H&S mtg  
and Inspections - begin Loading

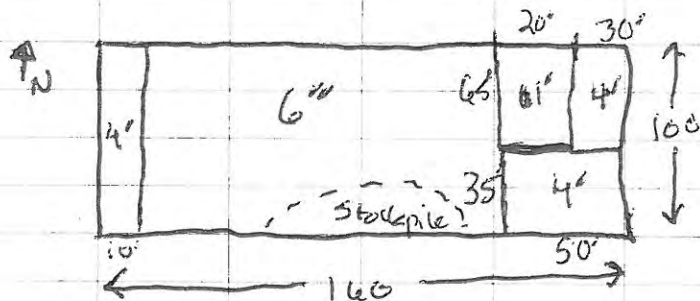
Truck	Empty	Loaded	Tons
85	40840	103520	31.34
87	40660	104940	32.09
91	40760	105760	32.50
142	40200	104720	32.26

~~Total~~ 40640 106660 32.76  
Total - 160.95

- 900 Completed Loading Trucks
- 930 Begin Lining + Loading  
1st Rail Car CHUX 172
- 11:30 Complete 1st Railcar
- 12:00 Complete Covering 1st  
and Lining 2nd Railcar  
CHUX 153
- 12:20 Lunch
- 13:40 Complete Loading 2nd  
Rail Car
- 14:20 Complete Bundle Rail Car  
#2 Begin Loading #3  
CHUX 274

(49) 1525 Lockwood Billings MT  
CPS/LPI SI Excavation

10/17/12



Stockpile = 105 tons

$65 \times 20 \times 1 = 70$  tons

$65 \times 30 \times 4 = 405$  tons

$35 \times 50 \times 4 = 363$  tons

$100 \times 10 \times 4 = 208$  tons / 2 = 104 tons

$100 \times 100 \times 0.5 = 260$  tons

Total Tonnage = 1300 tons

12 to 13 Rail Cars

15:30 complete Railcar #3

16:00 complete Load Rd Clean up

16:45 Complete Stockpiling Activities

~~17:00~~ Debrief and depart site

17:30 Back on site @ Hotel

*duel*  
→

1525 Lockwood  
Billings MT

(50)  
10/18/12

CPS/LPI SI Excavation

0645 Depart Hotel

0700 on-site

0715 Complete inspections  
and tailgate H&S mtg

0915 Rail car switch out

1. CHUX 237

2. CHUX 313

3. CHUX 302

10:00 Complete loader maint;  
Lining first rail car,  
begin loading first rail  
car

11:15 Complete loading #1

11:45 Completed #1 closure  
and #2 Lining. Begin  
loading #2

13:05 Complete loading/  
closing #2

13:10 Lunch

13:40 Back on-site

14:00 Complete Lining  
Car #3

15:45 Completed Loading  
& Closing Car #3

(51) 1525 Lockwood  
Billings, MT 10/18/12  
CPS/LPI SI Excavation

1600 Complete Load road  
Clean up  
1700 Debris + OFF-site  
1730 Back @ Hotel

A large, stylized squiggly line is drawn vertically down the page. Below it is a signature that appears to read "D. [unclear]". Below the signature is another squiggly line.

1525 Lockwood  
Billings, MT 10/19/12 (53)  
CPS/LPI SI Excavation

0645 Depart Hotel  
0700 On-site  
0720 Complete Inspectors /  
HHS and begin loading Trucks

Truck	Empty	Loaded	Tons
87	40660	105400	32.37
91	40760	105760	32.50
142	40200	104520	32.16
85	40340	106440	33.05
			Total = 130.08

0830 Completed Loading Trucks  
10:25 Rail Switch out complete  
1. CHUX 193  
2. CHUX 171  
3. CHUX 236  
10:50 Completed Lining begin  
loading Rail Car #1  
12:40 Complete loading  
and closing #1  
12:45 Lunch  
13:15 Back on-site  
13:30 Complete lining #2  
begin loading  
15:00 Complete loading & covering  
Car #2

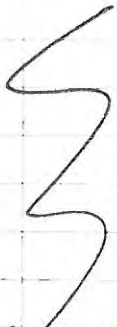
(53)

1525 Lockwood  
Billings, MT

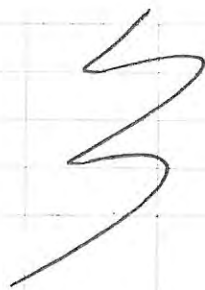
10/19/12

CPS/WPI SI Excavation

- 15:15 Complete Lining Car # 3  
and begin loading
- 16:45 Complete loading and  
covering Car # 3
- 17:00 Complete load Rd  
Clean up
- 17:30 Complete Fencing install
- 17:35 Complete Debris F + OFF-site
- 18:00 Back @ Hotel



Release



1525 Lockwood  
Billings, MT

10/24/12

(54)

CPS/WPI SI Excavation

- 0700 Depart Hotel
- 0715 on-site
- 0725 Complete Tailgate Safety  
Mty
- 0740 Comple Inspections
- 0750 Rail Car switch out
  1. CHax 141
  2. CHax 132
  3. CHax 290
- 0820 Complete Lining 1<sup>st</sup>  
Car begin loading
- 0950 completed loading and  
closing #1
- 10:00 Complete lining begin  
loading #2
- 11:30 completed loading and  
closing #2
- 11:35 Lunch
- 12:00 Back on-site
- 12:10 complete lining begin  
loading #3
- 13:30 Complete loading  
+ covering #3
- 14:25 Complete Load/Recal/Road  
Decon

1525 Lockwood  
Billings, MT

10/20/12

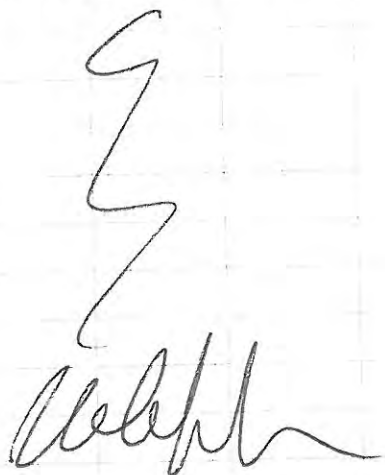
(55)

CPS/LPI SI Excavation

15:20 Completed Loader  
Accom and Loaded  
Remaining Liners/Straps  
CHUX290

16:45 Debrief + Depart

17:00 Back @ Hotel



1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/22/12 (92)

0645 Depart Hotel

0700 On-site

0710 Complete H&S intake

0730 Complete Insp / Begin loading

Trucks

Truck	Empty	Loaded	Tons
51	38280	105100	33.41
685	38780	104600	32.91
144	40460	104160	31.85
67	38880	<del>103880</del>	<del>32.17</del>
		105240	33.18
		Total	-131.35

0840 completed loading Trucks

0940 ACCOM on-site

1030 ACCOM off-site (1 Sample)

11:45 Lunch

12:30 Back on-site

13:00 Begin constructing  
Secondary Containment

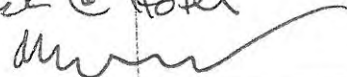
For Haz Waste

14:45 Complete 2nd Cont

16:45 Completed Waste Transfer  
(25%)

17:15 Cover Piles / OFFSITE

17:30 Back @ Hotel



57 1525 Lockwood  
Billings, MT  
CPS/LPI SE Excavation

10/23/12

- 0645 Depart Hotel  
0700 On-site  
0720 Complete Tailgate HTS  
& Inspection  
0730 Begin Loading Trucks

Truck	Empty	Loaded	Tons
85	40340	105920	32.49
87	40660	105780	32.56
91	40760	105900	32.57
142	40200	104100	31.95
			Total - 129.57

- 0900 Completed Loading Trucks  
11:30 Lunch  
12:00 Back on-site  
13:20 R. Wilkinson OFF site  
14:10 R. Wilkinson on-site  
14:30 Aecom on-site  
17:15 Aecom OFF-site, 9 samples  
collected  
1800 complete cover stockpiles  
Debruer / OFF-site  
18:15 Back @ Hotel

*[Signature]*

1525 Lockwood  
Billings MT  
CPS/LPI SE Excavation

10/24/12 58

0645 Depart Hotel  
0700 On-site  
0710 Complete Tailgate HTS  
0720 Complete Inspections  
0730 Begin Loading Trucks  
0930 Completed Loading Trucks

Truck	Empty	Loaded	Tons
51	38280	109580	33.65
65	38780	105380	33.30
144	40460	104380	31.46
67	38880	109140	33.13
			Total - 132.04

- 0930 Aecom on-site  
10:30 Completed Excavation  
pond C  
13:00 Complete Confirmation  
Sampling - Lunch  
7 Samples  
13:40 Back on site  
14:45 Completed collecting  
4 SHM Samples  
15:15 Shelly OFF-site  
17:15 OFF-site -

*[Signature]*

59

1525 Lockwood  
Billings, MT  
CPS/LPI Excavation

10/25/12

Good

CF-8	CF-6	CF-4	CF-2 OK	good
CF-7	CF-5	CF-3 OK	CF-1 OK	

Good

→ <sup>per</sup> 7700      Clean

    CF-4          CF-2

    CF-6          CF-1

                    CF-3

0645 Depart Hotel

0700 on-site

0730 Complete Insp, H&amp;S, and begin load out

Truck	Empty	loaded	Tons
85	40840	105800	32.48
87	40660	105900	32.62
91	40760	106080	32.66
142	40200	106660	32.93

Total = 130.74

0830 completed loading Trucks

0900 Complete excavation CF-6  
and CF-4

0945 Accom on-site

10:10 Accom off-site 2 Samples

1525-Lockwood  
Billings, MT  
CPS/LPI Excavation

10/25/12 (60)

13:55 Kimrock on-site

4 <sup>hr</sup> to 15 Kimrock OFF-site  
passed 2 compaction  
Tests lift 1 (50%)

4 <sup>hr</sup> to 20 Begin usual lift 2  
(50%)

16:10 Last load knife River  
26 Loads  
808.10 tons

1800 Complete Site Activities  
Relieve & off-site

19:30 Back @ Hotel

S  
S  
A  
2

(61) 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/26/12

0645 Depart Hotel

0700 On-site

0725 Complete Tailgate H+S  
and inspections

0745 Haz Tech on-site  
to install OBS-4

0810 Begin Abandoning OBS-4

0835 Rimrock OFF-site

LIFT 2 Passed 3<sup>rd</sup> compaction test

0930 First Backfill truck  
on-site

11:30 Complete install OBS-4R

14:00 Rimrock on-site

14:30 Passed 2 compaction  
tests LIFT 2, Passed  
4 compaction tests LIFT  
3, beginning LIFT 4

15:45 Last Warren Truck

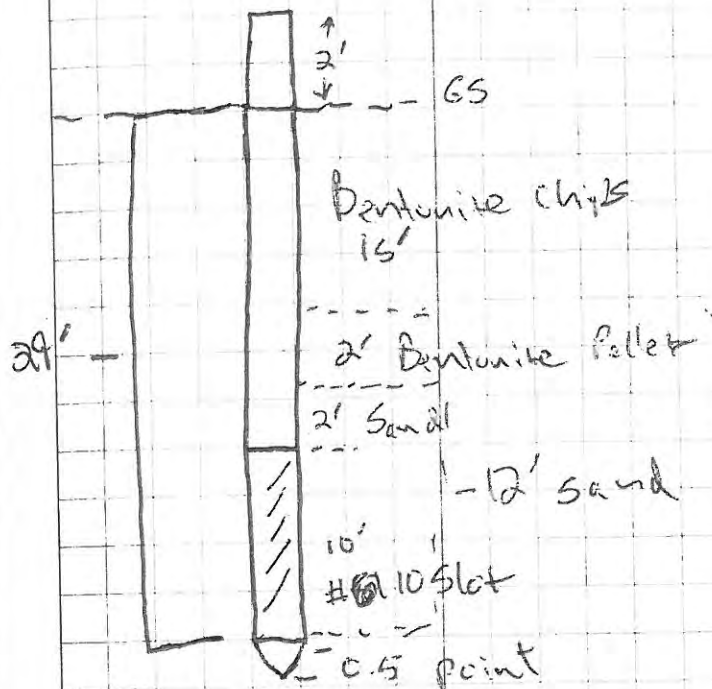
16:15 Last Knife River Truck

Company	Loads	Tons
Warren	44	934.15
Knife	32	991.63
Total		1925.78

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/26/12 (62)

OBS-4R



16:30 Debrief / OFF-site

16:45 Back @ hotel

J. J. J.

(63)

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/27/12

0645 Depart Hotel

0700 On-site

0720 Complete inspections and  
tailgate H&S. Begin lift  
H.

1145 Lunch

1225 Back on-site

14:00 Complete lift H  
debrief/OFF-site

14:30 End of Day

*Arlyson*

1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

10/29/12 (64)

0645 Depart Hotel

0700 On-site

0710 Complete Tailgate H&S

0730 Complete Inspections/Begin Loading

Truck	Empty	Loaded	Tons
85	40920	105260	32.21
87	40660	105600	32.47
93	40920	106100	32.64
142	40200	105240	32.52
			Total - 129.84

0815 Rimrock OFF-site, passed  
4' Tests lift H, Begin

Lift 5

0830 Backfill Trucks on-site

0850 Complete Loading Trucks

0925 R. Wilkinson OFF-site

For Supplies

10:50 R. Wilkinson back

on-site

11:00 15.5' - 29.5' = 14 FT

Water Column OBS&R

14' x 0.163 gal/ft = 2.3 gallons

3 well volumes = 6.9 gallons

11:15 Begin development

085-4R

1525 Lockwood  
Billings, MT

(65)

10/29/12

CPS/LPI SE Excavation

C 12:50 Complete development

C OBS-4R 75 gallons

C Note: Gary Rome

Terracon

406-696-3072

Call For Survey

13:40 call Gary Rome

Clay Swartz

Pin Point Surveying

406-373-9856

15:00 Darren w/ Rimrock onsite

15:20 Rimrock OFF-site  
passed 4 compaction  
tests Lift 5, began  
Lift 6

16:00 Last WT Truck

16:15 Last KR Truck

Company	Loads	Tons
WT	66	1,422.19
KR	55	1,774.43
Total	121	3,196.62

18:00 Stop Backfilling Lift 6 (75%)

18:10 Complete Covering Stockpiles

18:15 Debrief / OFF site

18:30 Back @ Hotel

*[Signature]*

1525 Lockwood  
Billings, MT

10/30/12

(66)

CPS/LPI Excavation

06:45 Depart Hotel

07:00 On-site

07:05 Complete target HFS

07:15 Trucks on-site

07:35 Complete Insp/Load Trucks

Truck	Empty	Loaded	Tons
51	38280	106180	33.6
65	38780	105320	33.27
144	40460	104000	31.77
67	38880	105080	33.10
Total			132.09

08:40 Completed Loading Trucks

09:20 Allied Waste on-site  
to sweep out roll-offs

10:45 R. Wilkinson OFF-site  
for Supplies

12:30 R. Wilkinson on-site

13:50 Rimrock on-site

14:00 Last KR Truck

Company	Loads	Tons
KR	15	534.04
WT	24	495.12
Total	29	1,029.16

14:15 Rimrock OFF-site passed  
4 comp tests Lift 6

(67) 1525 Lockwood  
Billings, MT  
CPS/MT SI Excavation 10/30/12

- 17:45 Complete Pond c Lift 7
- 18:00 Debrief and OFF-site
- 18:15 Back @ Hotel

*[Large handwritten scribble]*  
*[Signature]*

1525 Lockwood  
Billings, MT  
CPS/MT SI Excavation 10/31/12 (68)

- 0645 Depart Hotel
- 0700 On-site
- 0710 Complete Tailgate H&S
- 0730 Begin loading Trucks

Trucks	Empty	Loaded	Tons
85	40940	109020	32.04
87	40660	106120	32.73
91	40760	105880	32.56
142	40200	104000	31.90
			Tons - 129.23

0830 Completed Loading Trucks

11:30 Rimrock OFF-site  
passed 4 compaction tests Lift 7

12:00 Lunch

12:40 Back on-site

13:30 Loader OFF-site

16:00 Smooth Drum roller on-site, Sleeps Foot OFF-site

17:00 Debrief / OFF-site

17:15 Back @ Hotel

*[Signature]*

69 1925 Lockwood  
Billings, MT

11/11/12

CPSILPI SI Excavation

0645 Depart Hotel  
0700 On-site  
0710 Complete Tailgate H&S  
0725 Begin Loading Trucks

Truck	Empty	Loaded	Tons
51	38280	104920	33.32
93	40820	104920	32.05
144	40460	105580	32.56
67	38880	104320	32.72

Total - 130.65

0830 Truck 144 Flat Tire  
being repaired, All other  
trucks loaded

0900 Complete Loading Trucks  
11:30 Surveyor on site

Obs-4R

Ground Surface -

TOC -

Lat -

Long -

12:00 Surveyor OFF-site

12:05 Lunch

12:35 Back on-site

15:15 Debris F / OFF-site

13:30 back @ Hotel

*[Signature]*

1925 Lockwood  
Billings, MT

11/2/12

70

CPSILPI SI Excavation

0645 Depart Hotel  
0700 On-site  
0710 Complete Tailgate Safety  
Mty

Truck	Empty	Loaded	Tons
85	40840	105880	32.52
87	40660	107120	33.23
91	40760	106220	32.73
142	40220	105200	32.5

Total - 130.98

0830 Complete Loading Trucks

0900 RW & TS OFF-site For  
Vehicle Maint

0930 RW & TS back on site

12:05 Debris F / OFF-site

12:30 Back @ Hotel

*[Signature]*

*[Signature]*

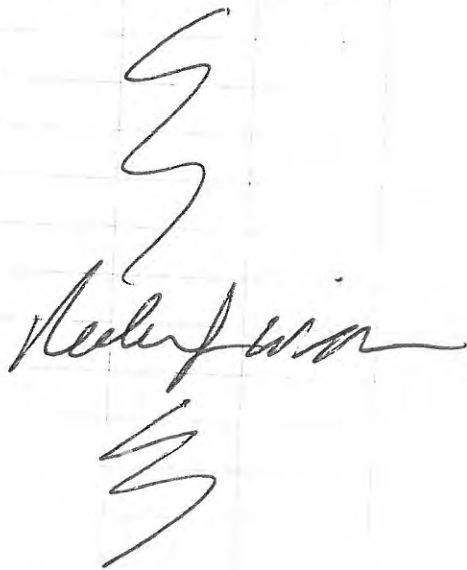
⑦① 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

11/5/12

0630 Depart Hotel  
0645 On-site  
0700 Complete Tailgate H+S  
and Equip Inspections  
0705 Begin Loading Trucks

<u>Truck</u>	<u>Empty</u>	<u>Loaded</u>	<u>Tons</u>
51	38280	105380	33.55
65	38790	104640	32.93
67	38880	104760	32.94
		Total -	99.42

0800 Completed Loading Trucks  
0830 Back @ Hotel



1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

11/6/12

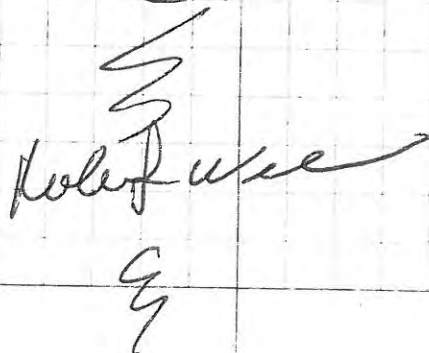
⑦②

0630 Depart Hotel  
0645 On-site  
0700 Complete tailgate Safety  
Meeting  
0705 Begin Loading Trucks

<u>Truck</u>	<u>Empty</u>	<u>Loaded</u>	<u>Tons</u>
85	40840	105860	32.51
144	40460	106100	32.82
87	40660	106280	32.81
91	40760	106140	32.68
142	40200	105660	32.73
		Total -	163.56

0850 Completed Loading Trucks  
1015 Complete Grade Stockpile  
Area

1025 Cover Stockpiles  
1030 Debrief + OFF-site  
10:50 Back @ Hotel



73 1525 Lockwood  
Dillings, MT  
SPS/LPT SI Excavation

11/7/12

0630 Depart Hotel  
0645 On-site  
0700 Complete Inspections  
& Tailgate H&S  
0715 Start Loading Trucks

Truck	Empty	Loaded	Tons
51	38280	105240	33.50
65	38780	105400	33.31
67	38880	104420	32.77
Total -			99.58

0800 Completed Loading Trucks  
0845 Depart Site  
0900 Back @ Hotel

Wolfe

Wolfe

1525 Lockwood  
Dillings, MT  
SPS/LPT SI Excavation

11/9/12

74

0630 Depart Hotel  
0645 On-site  
0655 Complete Tailgate/Inspection  
0700 Begin Loading Trucks

Truck	Empty	Loaded	Tons
509	35900	91900	28.0
545	40280	92580	26.15
<del>33529</del>	33640	854820	25.59
85	40840	106260	32.71
87	40660	104780	32.06
91	40760	106700	32.97
142	40200	105060	32.93
144	40460	104960	32.25
Total -			242.16

0900 Completed Loading Trucks  
10:05 Debrief & Off-site  
1030 Back @ Hotel

Wolfe

Wolfe

(75) 1525 Lockwood  
Billings, MT  
CPS/LPI SI Excavation

11/9/12

0635 Depart Hotel  
0700 On-site  
0705 Complete Tailgate H&S  
/ Inspections  
0710 Begin loading Trucks

Truck	Empty	Loaded	Tons
51	38280	106100	33.91
71	38900	105560	33.33
67	38880	104280	32.70
		Total	99.94

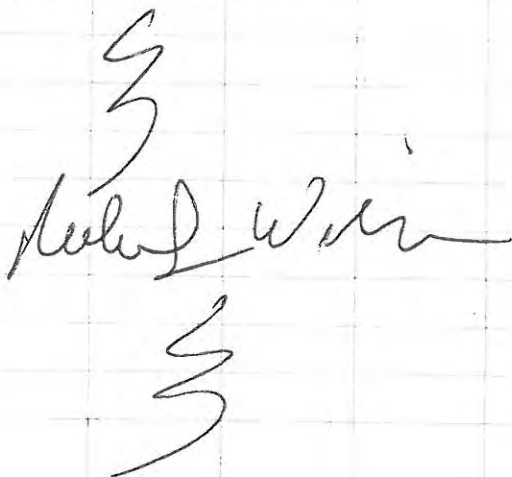
0810 Completed Loading Trucks

11:10 Lunch

11:45 Back on-site

12:45 OFF site

13:00 Back @ Hotel



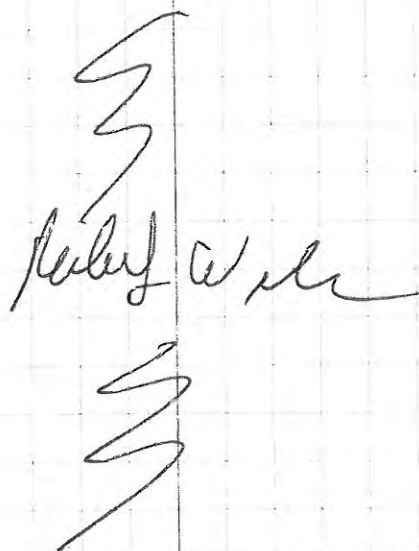
1525 Lockwood  
Billings MT  
CPS/LPI SI Excavation

11/10/12 (76)

0630 Depart Hotel  
0645 On-site  
0700 Tailgate Safety  
0720 Begin Loading Trucks

Truck	Empty	Loaded	Tons
545	40280	93640	26.68
508	35900	97260	30.68
529	33640	84120	25.24
		Total	82.60

0800 Completed Loading Trucks  
0830 Debrief and OFF-site  
0900 Back @ Hotel



(77) 1525 Lockwood  
Billings, MT  
CPS/HP SE Excavation

11/12/12

0630 Depart Hotel

0645 On-site

0655 Complete Inspection / Tailgate  
HTS

10730 Trucks on-site

10745 Begin Loading Trucks

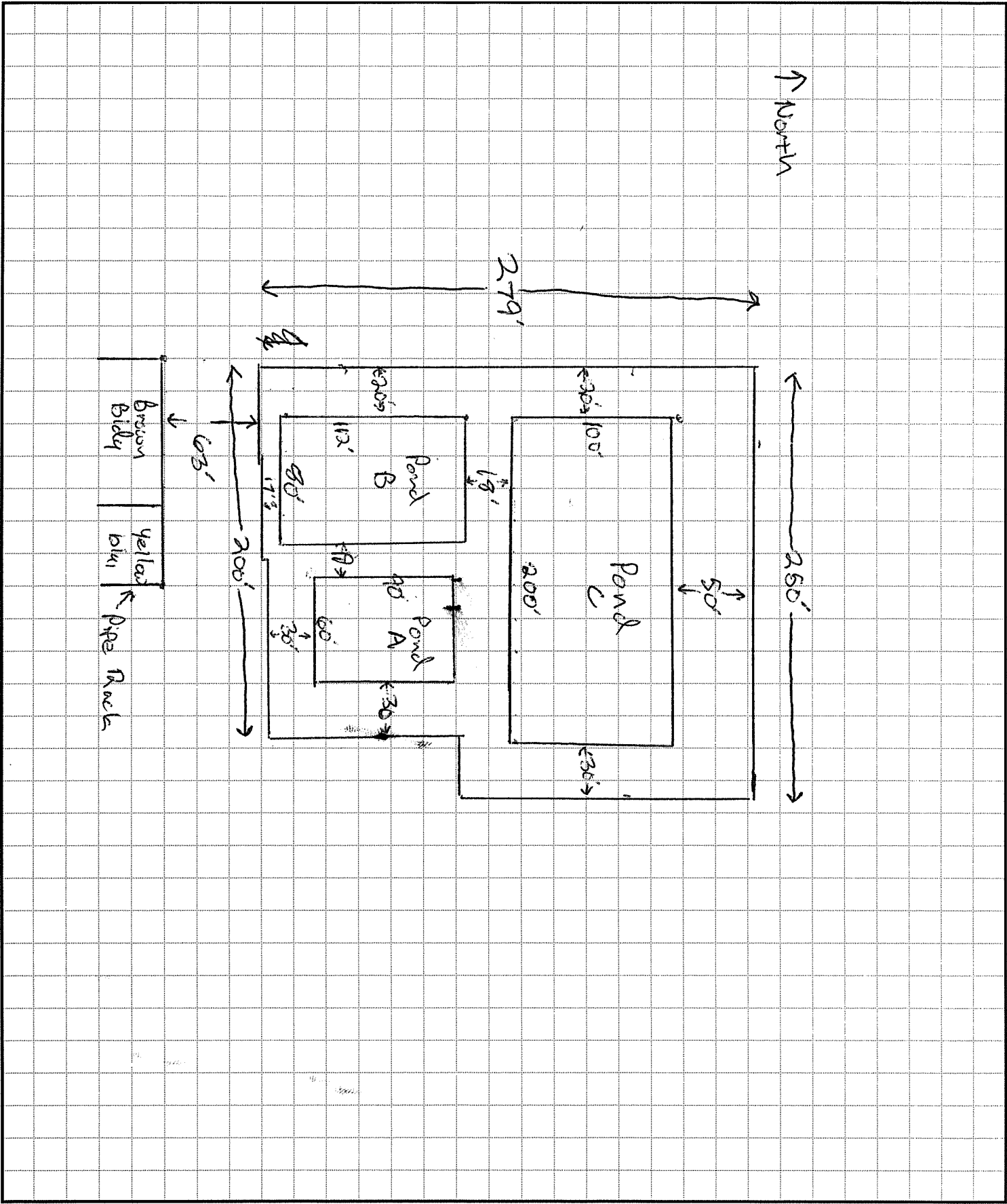
<u>Truck</u>	<u>Empty</u>	<u>Loaded</u>	<u>Tons</u>
4	35980	103760	33.94
5	35520	104800	34.49
R-55	40600	103920	31.66
(R-51	40900	104980	32.04
106	38700	95140	28.22

Total - 160.35

11930 Completed Loading Trucks

114:30 End of Day

✓  
Aulif will  
✓



**Ops Contracting Services, LLC**  
 200 North 2nd Street • Nashville, TN 37213  
 (615) 256-0165



JOB \_\_\_\_\_

SHEET NO. \_\_\_\_\_ TO \_\_\_\_\_

CALCULATED BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_

## **Appendix B**

### **Well Logs**

**MONTANA WELL LOG REPORT**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report was completed online by the driller. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

**Site Name: LOVELAND PRODUCTS**  
**GWIC Id: 267410**

**Section 1: Well Owner**

Owner Name  
 LOVELAND PRODUCTS

**Mailing Address**

1525 LOCKWOOD ROAD

<b>City</b>	<b>State</b>	<b>Zip Code</b>
BILLINGS	MT	59101

**Well Address**

N/A

<b>City</b>	<b>State</b>	<b>Zip Code</b>
N/A	N/A	N/A

**Section 2: Location**

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Quarter Sections</b>
01N	26E	26	NE¼ SE¼
<b>County</b>			<b>Geocode</b>

YELLOWSTONE

<b>Latitude</b>	<b>Longitude</b>	<b>Geomethod</b>	<b>Datum</b>
45.806861	-108.446889	NAV-GPS	WGS84
<b>Addition</b>	<b>Block</b>	<b>Lot</b>	

**Section 3: Proposed Use of Water**  
 MONITORING (1)

**Section 4: Type of Work**

Drilling Method: HOLLOWSTEM AUGER

**Section 5: Well Completion Date**

Date well completed: Wednesday, August 08, 2012

**Section 6: Well Construction Details**

**Borehole dimensions**

From	To	Diameter
0	30	11.5

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	30	4			FLUSH THREAD	PVC-SCHED 40

There are no completion records assigned to this well.

**Annular Space (Seal/Grout/Packer)**

There are no annular space records assigned to this well.

**Section 7: Well Test Data**

Total Depth: 30  
 Static Water Level: 25  
 Water Temperature:

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 8: Remarks**

M-19 WELL ABANDONMENT. FILLED CASING WITH BENTONITE CHIPS TO SURFACE. CUT CASING OFF 6FT BELOW SURFACE AND BACK FILLED TOP 3FT WITH NATIVE SOILS.

**Section 9: Well Log**

**Lithology Data**

There are no lithologic details assigned to this well.

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

**Name:** PAUL BRAY  
**Company:** HAZ TECH DRILLING INC  
**Address:** PO BOX 30622  
**City:** BILLINGS MT 59107  
**License No:** MWC-435  
**Date Certified:** 8/9/2012



**MONTANA WELL LOG REPORT**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report was completed online by the driller. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

**Site Name: LOVELAND PRODUCTS**  
**GWIC Id: 268823**

**Section 7: Well Test Data**

Total Depth: 29  
 Static Water Level:  
 Water Temperature:

**Section 1: Well Owner(s)**

- 1) LOVELAND PRODUCTS (MAIL)  
 1525 LOCKWOOD ROAD  
 BILLINGS MT 59101
- 2) LOVELAND PRODUCTS (WELL)  
 1525 LOCKWOOD ROAD  
 BILLINGS MT 59101

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 2: Location**

Township	Range	Section	Quarter Sections	Geocode
01N	26E	26	NE¼ SE¼	
YELLOWSTONE County				
Latitude	Longitude	Geomethod	Datum	
45.608778	-108.446083	NAV-GPS	WGS84	
Addition	Block		Lot	

**Section 8: Remarks**

OBS-4 WELL ABANDONMENT. FILLED CASING WITH BENTONITE CHIPS TO SURFACE. CUT CASING OFF 3FT BELOW SURFACE AND BACK FILLED BORING WITH NATIVE SOILS.

**Section 9: Well Log**

Lithology Data

There are no lithologic details assigned to this well.

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: PAUL BRAY  
 Company: HAZ TECH DRILLING INC  
 Address: PO BOX 30622  
 City: BILLINGS MT 59107  
 License No: MWC-435  
 Date Certified: 10/27/2012

**Section 3: Proposed Use of Water**  
 MONITORING (1)

**Section 4: Type of Work**

Drilling Method: HOLLOWSTEM AUGER

**Section 5: Well Completion Date**

Date well completed: Friday, October 26, 2012

**Section 6: Well Construction Details**

**Borehole dimensions**

From	To	Diameter
0	29	8

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	29	2			FLUSH THREAD	PVC-SCHED 40

There are no completion records assigned to this well.

**Annular Space (Seal/Grout/Packer)**

There are no annular space records assigned to this well.

**MONITORING WELL COORDINATES  
AT  
LOVELAND PRODUCTS, INC.  
IN  
BILLINGS, MONTANA**

November 1, 2012

WELL NUMBER	NORTH LATITUDE	WEST LONGITUDE	AVERAGE GROUND ELEVATION (FT.)	ELEVATION ON N. RIM OF PVC CASING (FT.)
MW OBS-4R	45°48'24.50058"	108°26'45.67235"	3102.97	3104.88

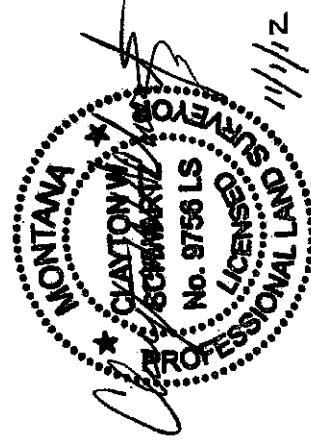
**HORIZONTAL DATUM: NAD 1983**

**VERTICAL DATUM: NAVD 88**

**HORIZONTAL AND VERTICAL CONTROL MARK: U.S. Coast and Geodetic Survey Brass Disk in concrete.**

NGS datasheet designation: D 484

NAVD 88 ELEVATION = 3113.76'



## **Appendix C**

### **Representative Photos**



Location of abandoned monitoring well M-19



Removal of asphalt cover over surface impoundments. Facing Northeast.



Fencing and signage around Pond B. Facing south.



Pond A – Removal of 2 to 4 foot bgs layer under top liner. Facing northwest.



Pond A – Preparing for sample collection following excavation. Facing southwest.



Pond A – Flagging showing sample locations. Facing north.



Pond A – Sample location of SI-A-3A. Collection depth approximately 4 to 6 feet bgs.



Pond A – Compaction testing during backfill activities. Facing north.



Pond B – Following removal of overburden above the top liner. Facing northwest.



Pond B – Waste layer from southeast corner. Facing northwest.



Pond B – West wall following excavation. Flagging shows sample locations. Facing South.



Pond B – Extent following excavation. Facing northeast.



Pond C – Test Pit C-6 in northwest corner.



Pond C – Potholing in test pit to locate depth of bottom liner.



Pond C – Potholing to locate depth of bottom liner.



Soil cuttings from Pond C test pit C-6 being dumped onto visqueen to allow sample collection.



Pond C – Excavation in process. Facing southeast.



Pond C – Extent following excavation. Facing southeast.



Loading overburden into dump truck for transport to stockpile. Facing northeast.



Stockpile. Facing east.



Stockpile. Facing northwest.



Stockpile being prepared for sample collection (liners pulled back). Facing northeast.



Waste disposal truck bed – lining prior to loading.



Loading waste into truck for disposal.



Transporting waste from Pond C to railcar for loading.



Loading waste from Pond C into lined railcar for transport to waste disposal facility.



Waste in railcar pending transport to the waste disposal facility.



Loaded railcar with covered waste.

# **Appendix D**

## **Laboratory Reports**

## ANALYTICAL SUMMARY REPORT

September 04, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12082849

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 9 samples for AECOM on 8/31/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12082849-001	A-S-S-1	08/31/12 8:28	08/31/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12082849-002	A-S-E-1	08/31/12 8:33	08/31/12	Soil	Same As Above
B12082849-003	A-S-N-1	08/31/12 8:18	08/31/12	Soil	Same As Above
B12082849-004	A-S-W-1	08/31/12 8:24	08/31/12	Soil	Same As Above
B12082849-005	A-F-1	08/31/12 8:40	08/31/12	Soil	Same As Above
B12082849-006	A-F-2	08/31/12 8:44	08/31/12	Soil	Same As Above
B12082849-007	A-F-3	08/31/12 8:48	08/31/12	Soil	Same As Above
B12082849-008	A-F-4	08/31/12 8:51	08/31/12	Soil	Same As Above
B12082849-009	A-F-4-D	08/31/12 8:55	08/31/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-001  
**Client Sample ID** A-S-S-1

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:28  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	08/31/12 09:51 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1480	mg/kg		200		SW8151A	08/31/12 19:36 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 19:36 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-002  
**Client Sample ID** A-S-E-1

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:33  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	13	wt%		0.2		SW3550A	08/31/12 09:51 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	2700	mg/kg		200		SW8151A	08/31/12 19:47 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 19:47 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-003  
**Client Sample ID** A-S-N-1

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:18  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	08/31/12 09:55 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	5980	mg/kg		200		SW8151A	08/31/12 18:28 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 18:28 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-004  
**Client Sample ID** A-S-W-1

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:24  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.0	wt%		0.2		SW3550A	08/31/12 09:58 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	3160	mg/kg		200		SW8151A	08/31/12 18:40 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 18:40 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-005  
**Client Sample ID** A-F-1

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:40  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.0	wt%		0.2		SW3550A	08/31/12 10:05 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1730	mg/kg		200		SW8151A	08/31/12 18:51 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 18:51 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-006  
**Client Sample ID** A-F-2

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:44  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	10	wt%		0.2		SW3550A	08/31/12 10:08 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1210	mg/kg		200		SW8151A	08/31/12 19:02 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 19:02 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-007  
**Client Sample ID** A-F-3

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:48  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.0	wt%		0.2		SW3550A	08/31/12 10:11 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	2200	mg/kg		200		SW8151A	08/31/12 21:17 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 21:17 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-008  
**Client Sample ID** A-F-4

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:51  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.2	wt%		0.2		SW3550A	08/31/12 10:12 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	3960	mg/kg		200		SW8151A	08/31/12 19:25 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 19:25 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082849-009  
**Client Sample ID** A-F-4-D

**Report Date:** 09/04/12  
**Collection Date:** 08/31/12 08:55  
**DateReceived:** 08/31/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.0	wt%		0.2		SW3550A	08/31/12 10:15 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	2300	mg/kg		200		SW8151A	08/31/12 20:10 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	08/31/12 20:10 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 09/04/12  
**Work Order:** B12082849

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b> <span style="float: right;">Batch: 65116</span>									
<b>Sample ID: B12082849-009AMS</b> <span style="float: right;">Run: HECD.I_120831A</span> <span style="float: right;">08/31/12 20:21</span>									
2,4-D	1760	mg/kg	200				27	40	
Surr: DCAA			20		45	130	0.0	40	O
-The spike amount was insignificant to the amount found in the sample therefore the Matrix Spike samples were calculated as Duplicate samples.									
<b>Sample ID: B12082849-009AMSD</b> <span style="float: right;">Run: HECD.I_120831A</span> <span style="float: right;">08/31/12 20:32</span>									
2,4-D	3140	mg/kg	200				31	40	
Surr: DCAA			20		45	130	0.0	40	O
-The spike amount was insignificant to the amount found in the sample therefore the Matrix Spike samples were calculated as Duplicate samples.									
<b>Sample ID: MB-65116</b> <span style="float: right;">Run: HECD.I_120831A</span> <span style="float: right;">08/31/12 20:55</span>									
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	67	53	114			
<b>Sample ID: LCS-65116</b> <span style="float: right;">Run: HECD.I_120831A</span> <span style="float: right;">08/31/12 21:28</span>									
2,4-D	17.5	mg/kg	2.0	88	25	117			
Surr: DCAA			0.20	72	53	114			

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12082849

Login completed by: Jill M. Lippard

Date Received: 8/31/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 8/31/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	8.6°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>AECOM</b>		Project Name, PWS, Permit, Etc. <b>CPS-LPI Billings</b>		Sample Origin State: <b>MT</b>		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Report Mail Address: <b>207 N Broadway, Suite 315 Billings, MT 59101</b>		Contact Name: <b>Shelly Young</b>		Email: <b>shelly.young@aecom.com</b>		Sampler: (Please Print) <b>S. Young</b>	
Invoice Address: <b>SAA</b>		Phone/Fax: <b>406-896-4582</b>		Purchase Order: <b>40371</b>		Quote/Bottle Order:	
Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POTW/WTP <input type="checkbox"/> State: <input type="checkbox"/> Other:		EDD/EDIT (Electronic Data) Format: <b>ELU12</b> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC		ANALYSIS REQUESTED <b>SEE ATTACHED</b>		Shipped by: <b>HANA</b>	
Number of Containers Sample Type: A W S V B O DW Air Water Solids Vegetation Bioassay Other DW - Drinking Water		MATRIX <b>S</b>		Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page <b>Comments: 24-hr rush per agreement</b>		Receipt Temp <b>TD</b> Cooler ID(s): On Ice: <b>Y N</b> Custody Seal On Bottle On Cooler Intact Signature Match <b>82082849-01</b> <b>TD2</b> <b>TD3</b> <b>TD4</b> <b>TD5</b> <b>TD6</b> <b>TD7</b> <b>TD8</b> <b>TD9</b>	
Standard Turnaround (TAT)		Standard Turnaround (TAT)		Standard Turnaround (TAT)		LABORATORY USE ONLY	
Sample ID		Collection Date		Collection Time		Received by (print)	
1 A-S-S-1		8/21/12		8:28		Diana Grassel	
2 A-S-E-1				8:33		Date/Time: 8/31/12 8:58	
3 A-S-N-1				8:18		Received by (print):	
4 A-S-W-1				8:24		Date/Time:	
5 A-F-1				8:40		Received by Laboratory: <b>DIANE GRASSEL</b>	
6 A-F-2				8:44		Date/Time: 8/31/12 9:30	
7 A-F-3				8:46		Signature: <b>Diana Grassel</b>	
8 A-F-4				8:51		Date/Time: 8/31/12 9:30 AM	
9 A-F-4-D				8:55		Signature: <b>Diana Grassel</b>	
10						Date/Time:	

**Custody Record MUST be Signed**

Relinquished by (print): **Shelly Young** Date/Time: **8/31/12 8:58**  
 Relinquished by (print): **Diana Grassel** Date/Time: **8/31/12 9:30**  
 Signature: **Diana Grassel**  
 Signature: **Diana Grassel**

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.enervulsh.com](http://www.enervulsh.com) for additional information downloadable fee schedule forms and links.



# ANALYTICAL SUMMARY REPORT

August 25, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12082217

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 1 sample for AECOM on 8/24/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12082217-001	A-L1-C1	08/24/12 8:45	08/24/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12082217

**Report Date:** 08/25/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12082217-001  
**Client Sample ID** A-L1-C1

**Report Date:** 08/25/12  
**Collection Date:** 08/24/12 08:45  
**DateReceived:** 08/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.9	wt%		0.2		SW3550A	08/24/12 11:27 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	ND	mg/kg		2.0		SW8151A	08/24/12 16:34 / jem
Surr: DCAA	80.0	%REC		53-114		SW8151A	08/24/12 16:34 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 08/25/12  
**Work Order:** B12082217

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 64900		
<b>Sample ID: MB-64900</b>	Method Blank					Run: GECD.I_120824A			08/24/12 16:00
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	78	53	114			
<b>Sample ID: LCS-64900</b>	Laboratory Control Sample					Run: GECD.I_120824A			08/24/12 16:12
2,4-D	17.8	mg/kg	2.0	89	25	117			
Surr: DCAA			0.20	70	53	114			
<b>Sample ID: B12082217-001AMS</b>	Sample Matrix Spike					Run: GECD.I_120824A			08/24/12 16:45
2,4-D	18.4	mg/kg	2.0	92	25	117			
Surr: DCAA			0.20	85	53	114			
<b>Sample ID: B12082217-001AMSD</b>	Sample Matrix Spike Duplicate					Run: GECD.I_120824A			08/24/12 16:57
2,4-D	19.3	mg/kg	2.0	97	25	117	5.0	40	
Surr: DCAA			0.20	83	53	114			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12082217

Login completed by: Judy Klier

Date Received: 8/24/2012

Reviewed by: BL2000\gmccartney

Received by: jrj

Reviewed Date: 8/24/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 18.6°C On Ice                           |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM** Project Name, PWS, Permit, Etc.: **CPS-LPI BILLINGS** EPA/State Compliance: Yes  No

Report Mail Address: **207 N BROADWAY, STE 305 BILLINGS, MT 59101** Contact Name: **STHELLY YOUNG** Phone/Fax: **406.896.4582** Email: **shelly.young@aecom.com** State: **MT** Sampler: (Please Print) **J. BOGARD**

Invoice Address: **SAME AS ABOVE** Invoice Contact & Phone: **SAME AS ABOVE** Purchase Order: **Quote/Bottle Order:**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B O DW			
1 A-LI-CI	08/11/12	0845	S	1	SEE ATTACHED	↑ R U S H X	Comments: 24-HR TURN REQUEST	Shipped by: <b>HAND</b> Cooler ID(s): Receipt Temp: <b>13.6 °C</b> On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal: On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Intact <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Signature Match <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>13082617-001</b>
2								
3								
4								
5								
6								
7								
8								
9								
10								

Relinquished by (print): **Janifer Bogardi** Date/Time: **08/14/12 0938** Signature: *[Signature]*

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by Laboratory: **LABORATORIES** Date/Time: **8/24/12 938** Signature: *[Signature]*

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at [www.enerylab.com](http://www.enerylab.com) for additional information, downloadable fee schedule forms, and links.



# ANALYTICAL SUMMARY REPORT

August 28, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12082351

Project Name: CPS-LP1 Billings

Energy Laboratories Inc Billings MT received the following 2 samples for AECOM on 8/27/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12082351-001	A-L2-C1	08/27/12 9:05	08/27/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12082351-002	A-L3-C1	08/27/12 9:30	08/27/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LP1 Billings  
**Sample Delivery Group:** B12082351

**Report Date:** 08/28/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LP1 Billings  
**Lab ID:** B12082351-001  
**Client Sample ID:** A-L2-C1

**Report Date:** 08/28/12  
**Collection Date:** 08/27/12 09:05  
**Date Received:** 08/27/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	4.1	wt%		0.2		SW3550A	08/27/12 10:54 / jn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	159	mg/kg		20		SW8151A	08/27/12 16:17 / jem
Surr: DCAA	50.0	%REC	S J	53-114		SW8151A	08/27/12 16:17 / jem

**Report Definitions:**

RL - Analyte reporting limit.  
QCL - Quality control limit.  
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
S - Spike recovery outside of advisory limits.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LP1 Billings  
**Lab ID:** B12082351-002  
**Client Sample ID** A-L3-C1

**Report Date:** 08/28/12  
**Collection Date:** 08/27/12 09:30  
**DateReceived:** 08/27/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	5.6	wt%		0.2		SW3550A	08/27/12 10:57 / jn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	280	mg/kg		20		SW8151A	08/27/12 16:29 / jem
Surr: DCAA	50.0	%REC	S J	53-114		SW8151A	08/27/12 16:29 / jem

**Report Definitions:**

RL - Analyte reporting limit.  
QCL - Quality control limit.  
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LP1 Billings

**Report Date:** 08/28/12  
**Work Order:** B12082351

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b> <span style="float: right;">Batch: 64953</span>									
<b>Sample ID: MB-64953</b>	Method Blank								
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	59	53	114			
Run: HECD.I_120827A <span style="float: right;">08/27/12 15:32</span>									
<b>Sample ID: LCS-64953</b>	Laboratory Control Sample								
2,4-D	17.9	mg/kg	2.0	90	25	117			
Surr: DCAA			0.20	72	53	114			
Run: HECD.I_120827A <span style="float: right;">08/27/12 15:43</span>									
<b>Sample ID: B12082351-002AMS</b>	Sample Duplicate								
2,4-D	364	mg/kg	20				19	40	
Surr: DCAA			2.0	65	45	130	0.0	40	J
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12082351-002AMSD</b>	Sample Duplicate								
2,4-D	370	mg/kg	20				21	40	
Surr: DCAA			2.0	67	45	130	0.0	40	J
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12082351

Login completed by: Randa Nees

Date Received: 8/27/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 8/27/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 11.2°C On Ice                           |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM** Project Name, PWS, Permit, Etc.: **CPS - LPI BILLINGS** EPA/State Compliance: Yes  No

Report Mail Address: **207 N. BROADWAY, STE 315 BILLINGS, MT 59101** State: **MT** Sampler: (Please Print) **J. BOGADI**

Contact Name: **SHELLEY YOUNG** Phone/Fax: **406-896-4582** Email: **shelly.young@aecom.com**

Invoice Contact & Phone: **SAME AS ABOVE** Purchase Order: **Quote/Bottle Order:**

Special Report/Formats:  EDD/EDT (Electronic Data) Format: **EDMS**  POTW/WWTP  LEVEL IV  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Number of Containers		Sample Type: A W S V B O DW	Air Water Bioassay Other	DW - Drinking Water	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	Receipt Temp	Shipped by: Cooler ID(s):	
				Sample Type: A W S V B O DW	Air Water Bioassay Other										
1 A-L2-C1	08/27/12	0905	S	✓					SEE ATTACHED	R					
2 A-L3-C1	08/27/12	0930	S	✓						X	24-HR RUSH PER AGREEMENT		112 °C	On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal: On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler <input type="checkbox"/> Y <input type="checkbox"/> N Intact: <input type="checkbox"/> Y <input type="checkbox"/> N Signature Match: <input type="checkbox"/> Y <input type="checkbox"/> N	LABORATORY USE ONLY S12082351-001 L 002
3															
4															
5															
6															
7															
8															
9															
10															

Relinquished by (print): **J. BOGADI** Date/Time: **08/27/12 1019** Signature: *[Signature]*

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

Received by Laboratory: **BOGADI** Date/Time: **08/27/12 1019A** Signature: *[Signature]*

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly noted on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.

## ANALYTICAL SUMMARY REPORT

September 26, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12092004

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 9 samples for AECOM on 9/25/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12092004-001	B-F-1	09/25/12 10:01	09/25/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12092004-002	B-F-2	09/25/12 10:05	09/25/12	Soil	Same As Above
B12092004-003	B-F-3	09/25/12 9:50	09/25/12	Soil	Same As Above
B12092004-004	B-F-4	09/25/12 9:54	09/25/12	Soil	Same As Above
B12092004-005	B-F-4D	09/25/12 9:58	09/25/12	Soil	Same As Above
B12092004-006	B-S-S-1	09/25/12 9:44	09/25/12	Soil	Same As Above
B12092004-007	B-S-E-1	09/25/12 9:40	09/25/12	Soil	Same As Above
B12092004-008	B-S-N-1	09/25/12 9:35	09/25/12	Soil	Same As Above
B12092004-009	B-S-W-1	09/25/12 9:47	09/25/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12092004

**Report Date:** 09/26/12

## CASE NARRATIVE

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-001  
**Client Sample ID** B-F-1

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 10:01  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.3	wt%		0.2		SW3550A	09/25/12 11:41 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	216	mg/kg		20		SW8151A	09/25/12 17:47 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 17:47 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-002  
**Client Sample ID** B-F-2

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 10:05  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	09/25/12 11:37 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	2720	mg/kg		200		SW8151A	09/25/12 18:30 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 18:30 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-003  
**Client Sample ID:** B-F-3

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:50  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.2	wt%		0.2		SW3550A	09/25/12 11:42 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	490	mg/kg		20		SW8151A	09/25/12 18:41 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 18:41 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-004  
**Client Sample ID** B-F-4

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:54  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.7	wt%		0.2		SW3550A	09/25/12 11:58 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	338	mg/kg		20		SW8151A	09/25/12 18:52 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 18:52 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-005  
**Client Sample ID** B-F-4D

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:58  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.2	wt%		0.2		SW3550A	09/25/12 11:58 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	304	mg/kg		20		SW8151A	09/25/12 19:04 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 19:04 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-006  
**Client Sample ID** B-S-S-1

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:44  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.3	wt%		0.2		SW3550A	09/25/12 12:06 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	66	mg/kg		20		SW8151A	09/25/12 19:15 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 19:15 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-007  
**Client Sample ID** B-S-E-1

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:40  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	7.6	wt%		0.2		SW3550A	09/25/12 12:11 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	127	mg/kg		20		SW8151A	09/25/12 19:26 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 19:26 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-008  
**Client Sample ID** B-S-N-1

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:35  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.5	wt%		0.2		SW3550A	09/25/12 12:11 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	968	mg/kg		40		SW8151A	09/25/12 19:52 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 19:52 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092004-009  
**Client Sample ID** B-S-W-1

**Report Date:** 09/26/12  
**Collection Date:** 09/25/12 09:47  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	09/25/12 12:16 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	29	mg/kg		20		SW8151A	09/25/12 20:03 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/25/12 20:03 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 09/26/12  
**Work Order:** B12092004

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 65694		
<b>Sample ID: MB-65694</b>	Method Blank					Run: GECD.I_120925A		09/25/12 17:14	
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	74	53	114			
<b>Sample ID: LCS-65694</b>	Laboratory Control Sample					Run: GECD.I_120925A		09/25/12 17:25	
2,4-D	18.1	mg/kg	2.0	91	25	117			
Surr: DCAA			0.20	81	53	114			
<b>Sample ID: B12092004-001ADUP</b>	Sample Duplicate					Run: GECD.I_120925A		09/25/12 18:01	
2,4-D	198	mg/kg	20				8.5	40	
Surr: DCAA			2.0		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12092004

Login completed by: Leslie S. Cadreau

Date Received: 9/25/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 9/25/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	15.4°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: AECOM Project Name, PWS, Permit, Etc.: CPS - LPI Billings EPA/State Compliance: Yes  No

Report Mail Address: 207 N. Broadway, Suite 315 Billings, MT 59101 Contact Name: Shelly Young State: MT Sampler: (Please Print) Shelly Young

Invoice Address: Same As Above Invoice Contact & Phone: Same as above Phone/Fax: (406) 896-4582 Purchase Order: 40371 Quote/Bottle Order: 61599

Special Report/Formats:  EDD/EDI (Electronic Data) Format: Eg n15  POT/WWTP  State: LEVEL IV  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B O DW Air Water Soils Solids Vegetation Bioassay Other DW - Drinking Water			
1 B-F-1	9/25/12	1001	S	X	2,4-D Modif. fuel	X	↑	15.4 °C
2 B-F-2	1005	1005		X		X	Comments: 24 hour Rush	On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
3 B-F-3	0950	0950		X		X		Custody Seal On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input type="checkbox"/> N
4 B-F-4	0954	0954		X		X		Intact: <input type="checkbox"/> Y <input type="checkbox"/> N
5 B-F-4D	0958	0958		X		X		Signature Match: <input type="checkbox"/> Y <input type="checkbox"/> N
6 B-S-S-1	0944	0944		X		X		Signature: <u>1512097004001</u>
7 B-S-E-1	0940	0940		X		X		-002
8 B-S-N-1	0935	0935		X		X		-003
9 B-S-W-1	0947	0947		X		X		-004
				X		X		-005
				X		X		-000
				X		X		-007
				X		X		-008
				X		X		-009

Received by (print): Derek Haep Date/Time: 9-25-12/1040 Signature: [Signature]

Received by Laboratory: SEBEMER Date/Time: 9/25/12 1040A Signature: [Signature]

Relinquished by (print): Shelly Young Date/Time: 9/25/12 1040 Signature: [Signature]

Relinquished by (print): Derek Haep Date/Time: 9-25-12/1040 Signature: [Signature]

Sample Disposal: Return to Client Lab Disposal: Return to Client

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

September 27, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12092101

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 1 sample for AECOM on 9/26/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12092101-001	B-F-2R	09/26/12 9:15	09/26/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12092101

**Report Date:** 09/27/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092101-001  
**Client Sample ID** B-F-2R

**Report Date:** 09/27/12  
**Collection Date:** 09/26/12 09:15  
**DateReceived:** 09/26/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	09/26/12 10:29 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	123	mg/kg		20		SW8151A	09/27/12 08:24 / ejh
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/27/12 08:24 / ejh

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 09/27/12  
**Work Order:** B12092101

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8151A									Batch: 65694
<b>Sample ID:</b> MB-65694	Method Blank								Run: GECD.I_120925A 09/25/12 17:14
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	74	53	114			
<b>Sample ID:</b> LCS-65694	Laboratory Control Sample								Run: GECD.I_120925A 09/25/12 17:25
2,4-D	18.1	mg/kg	2.0	91	25	117			
Surr: DCAA			0.20	81	53	114			
<b>Sample ID:</b> B12092101-001ADUP	Sample Duplicate								Run: GECD.I_120925A 09/27/12 08:35
2,4-D	120	mg/kg	20				2.1	40	
Surr: DCAA			2.0		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12092101

Login completed by: Leslie S. Cadreau

Date Received: 9/26/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 9/26/2012

Carrier Hand Del  
name:

- |   |   |                             |  |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temp Blank received?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 12.0°C On Ice                           |                             |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM** Project Name, PWS, Permit, Etc.: **CPS-LPI Billings** EPA/State Compliance: Yes  No

Report Mail Address: **207 N Broadway, Suite 315 Billings, MT 59102** State: **MT** Sampler: (Please Print) **Shelly Young**

Contact Name: **Shelly Young** Phone/Fax: **(406) 896-4582** Email: **shelly.young@aecom.com** Quote/Bottle Order: **61599**

Invoice Address: **Same As Above** Invoice Contact & Phone: **Same As Above** Purchase Order: **40371**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Comments:	Shipped by:	Cooler ID(s):	Receipt Temp	On Ice:	Custody Seal On Bottle On Cooler	Intact	Signature Match
				Number of Containers	Sample Type: A W S V B O DW									
1 <b>BF B-F-2R</b>	<b>9/26/12</b>	<b>0915</b>	<b>S</b>	<input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <b>Egis</b>	<input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC	<b>SEE ATTACHED</b>	<b>24 hr TAT</b>	<b>HAND</b>		<b>12.0 °C</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>
2														
3														
4														
5														
6														
7														
8														
9														
10														

Special Report/Formats: **None**

Relinquished by (print): **Shelly Young** Date/Time: **9/26/12 0942** Signature: *[Signature]*

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

Signature: **DR. ZORNER** Date/Time: **9/26/12 942**

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

August 20, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12081498                      Quote ID: B61599

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 2 samples for AECOM on 8/16/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12081498-001	B-L1-C1	08/16/12 8:55	08/16/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12081498-002	B-L1-C2	08/16/12 9:00	08/16/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12081498

**Report Date:** 08/20/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and reported on an as-received basis.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081498-001  
**Client Sample ID** B-L1-C1

**Report Date:** 08/20/12  
**Collection Date:** 08/16/12 08:55  
**DateReceived:** 08/16/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	7.0	wt%		0.2		SW3550A	08/17/12 07:00 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	ND	mg/kg		2.0		SW8151A	08/16/12 15:33 / jem
Surr: DCAA	77.0	%REC		53-114		SW8151A	08/16/12 15:33 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081498-002  
**Client Sample ID** B-L1-C2

**Report Date:** 08/20/12  
**Collection Date:** 08/16/12 09:00  
**DateReceived:** 08/16/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	7.5	wt%		0.2		SW3550A	08/17/12 07:00 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	ND	mg/kg		2.0		SW8151A	08/16/12 15:44 / jem
Surr: DCAA	64.0	%REC		53-114		SW8151A	08/16/12 15:44 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 08/20/12  
**Work Order:** B12081498

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 64684		
<b>Sample ID: MB-64684</b>	Method Blank					Run: GECD.I_120816A			08/16/12 14:59
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	68	53	114			
<b>Sample ID: LCS-64684</b>	Laboratory Control Sample					Run: GECD.I_120816A			08/16/12 15:10
2,4-D	13.5	mg/kg	2.0	68	25	117			
Surr: DCAA			0.20	71	53	114			
<b>Sample ID: B12081498-002AMS</b>	Sample Matrix Spike					Run: GECD.I_120816A			08/16/12 15:55
2,4-D	13.8	mg/kg	2.0	69	25	117			
Surr: DCAA			0.20	71	53	114			
<b>Sample ID: B12081498-002AMSD</b>	Sample Matrix Spike Duplicate					Run: GECD.I_120816A			08/16/12 16:06
2,4-D	14.9	mg/kg	2.0	74	25	117	7.5	40	
Surr: DCAA			0.20	70	53	114			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12081498

Login completed by: Leslie S. Cadreau

Date Received: 8/16/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 8/16/2012

Carrier Hand Del  
name:

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time?  
(Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) Yes  No
- Temp Blank received? Yes  No  Not Applicable
- Container/Temp Blank temperature: 12.4°C On Ice
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH acceptable upon receipt? Yes  No  Not Applicable

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>AECOM</b>		Project Name, PWS, Permit, Etc. <b>CPS - LPI Billing</b>		Sample Origin State: <b>MT</b>		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Report Mail Address: <b>207 N. BROADWAY, STE 315 BILLINGS, MT 59101</b>		Contact Name: <b>SHELLY YOUNG</b>		Email: <b>shelly.young@aecom.com</b>		Sampler: (Please Print) <b>JENNIFER BOGARDI</b>	
Invoice Address: <b>SAME AS ABOVE</b>		Phone/Fax: <b>406.896.4582</b>		Purchase Order:		Quote/Bottle Order: <b>61599</b>	
Special Report/Formats: <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTW/WWTP State: <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC		ANALYSIS REQUESTED		Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page		Shipped by: <b>HAND</b>	
Number of Containers		Sample Type: <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids <input type="checkbox"/> DW		Standard Turnaround (TAT)		Receipt Temp <b>124 °C</b>	
Vegetation <input type="checkbox"/> Biossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water		Matrix		Comments: <b>24 HR TURN PER AGREEMENT</b>		Cooler ID(s):	
Collection Time		Collection Date		Custody Seal		On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
1 <b>6-11-C1</b>		<b>08/16/12</b>		<b>S</b>		On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
2 <b>B-11-C2</b>		<b>08/16/12</b>		<b>S</b>		On Cooler <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
3						Intact <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
4						Signature <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
5						Match <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
6						LABORATORY USE ONLY	
7						<b>12081498-01</b>	
8						<b>-002</b>	
9							
10							

**Custody Record MUST be Signed**

Relinquished by (print): **Boyd** Date/Time: **08/16/12 1000**  
 Received by (print): **Boyd** Date/Time: **08/16/12 1000**  
 Signature: *[Signature]*  
 Signature: *[Signature]*

Received by Laboratory: **Boyd** Date/Time: **08/16/12 10 AM**  
 Signature: *[Signature]*

Lab Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_  
 in certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

August 21, 2012

AECOM  
207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12081789  
Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 5 samples for AECOM on 8/20/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12081789-001	B-L2-C1	08/20/12 10:30	08/20/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12081789-002	B-L2-C2	08/20/12 10:55	08/20/12	Soil	Same As Above
B12081789-003	B-L3-C1	08/20/12 11:05	08/20/12	Soil	Same As Above
B12081789-004	B-L4-C1	08/20/12 11:20	08/20/12	Soil	Same As Above
B12081789-005	B-L2-C2-D	08/20/12 10:55	08/20/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12081789

**Report Date:** 08/21/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081789-001  
**Client Sample ID** B-L2-C1

**Report Date:** 08/21/12  
**Collection Date:** 08/20/12 10:30  
**DateReceived:** 08/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	5.0	wt%		0.2		SW3550A	08/20/12 13:18 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	101	mg/kg		20		SW8151A	08/20/12 18:53 / jem
Surr: DCAA	57.0	%REC	J	53-114		SW8151A	08/20/12 18:53 / jem

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081789-002  
**Client Sample ID** B-L2-C2

**Report Date:** 08/21/12  
**Collection Date:** 08/20/12 10:55  
**DateReceived:** 08/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.0	wt%		0.2		SW3550A	08/20/12 13:36 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	164	mg/kg		20		SW8151A	08/20/12 19:18 / jem
Surr: DCAA	55.0	%REC	J	53-114		SW8151A	08/20/12 19:18 / jem

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081789-003  
**Client Sample ID** B-L3-C1

**Report Date:** 08/21/12  
**Collection Date:** 08/20/12 11:05  
**DateReceived:** 08/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	8.5	wt%		0.2		SW3550A	08/20/12 13:43 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	60	mg/kg		20		SW8151A	08/20/12 19:29 / jem
Surr: DCAA	47.0	%REC	J	53-114		SW8151A	08/20/12 19:29 / jem

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081789-004  
**Client Sample ID** B-L4-C1

**Report Date:** 08/21/12  
**Collection Date:** 08/20/12 11:20  
**DateReceived:** 08/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	08/20/12 13:47 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	64	mg/kg		20		SW8151A	08/20/12 19:41 / jem
Surr: DCAA	51.0	%REC	J	53-114		SW8151A	08/20/12 19:41 / jem

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12081789-005  
**Client Sample ID** B-L2-C2-D

**Report Date:** 08/21/12  
**Collection Date:** 08/20/12 10:55  
**DateReceived:** 08/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	7.0	wt%		0.2		SW3550A	08/20/12 13:47 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	100	mg/kg		20		SW8151A	08/20/12 19:52 / jem
Surr: DCAA	51.0	%REC	J	53-114		SW8151A	08/20/12 19:52 / jem

**Report Definitions:**

RL - Analyte reporting limit.  
QCL - Quality control limit.  
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 08/21/12  
**Work Order:** B12081789

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 64764		
<b>Sample ID: B12081789-005AMS</b>	Sample Duplicate				Run: HECD.I_120820A		08/20/12 20:03		
2,4-D	112	mg/kg	20				11	40	
Surr: DCAA			2.0	56	45	130	0.0	40	J
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12081789-005AMSD</b>	Sample Duplicate				Run: HECD.I_120820A		08/20/12 20:15		
2,4-D	126	mg/kg	20				22	40	
Surr: DCAA			2.0	63	45	130	0.0	40	J
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: MB-64764</b>	Method Blank				Run: HECD.I_120820A		08/20/12 20:37		
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	67	53	114			
<b>Sample ID: LCS-64764</b>	Laboratory Control Sample				Run: HECD.I_120820A		08/20/12 20:48		
2,4-D	18.4	mg/kg	2.0	92	25	117			
Surr: DCAA			0.20	78	53	114			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12081789

Login completed by: Randa Nees

Date Received: 8/20/2012

Reviewed by: BL2000\kmcDonald

Received by: Ig

Reviewed Date: 8/21/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 5.8°C On Ice                            |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

**PLEASE PRINT (Provide as much information as possible.)**

<b>Company Name:</b> <u>AECOM</u> <b>Report Mail Address:</b> <u>207 W BROADWAY, STE 315</u> <u>BILLINGS, MT 59101</u> <b>Invoice Address:</b> <u>SAME AS ABOVE</u>		<b>Project Name, PWS, Permit, Etc.:</b> <u>CPS - BILLINGS</u> <b>Contact Name:</b> <u>SHELLEY YOUNG</u> <u>406.896.4582</u> <b>Invoice Contact &amp; Phone:</b> <u>SAME AS ABOVE</u>	<b>Sample Origin:</b> <b>State:</b> <u>MT</u> <b>Email:</b> <b>Purchase Order:</b> <u>61599</u>	<b>EPA/State Compliance:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> <b>Sampler: (Please Print)</b> <u>Jennifer Bogardi</u>																																																																										
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____	<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Standard Turnaround (TAT):</b> _____ <b>Comments:</b> <u>24-HR TURNAROUND PER AGREEMENT</u>	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																				
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____		<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																				
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____		<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																				
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____		<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																				
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____		<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																				
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											
<b>Special Report/Formats:</b> <input type="checkbox"/> DW <input type="checkbox"/> POTWW/WTP <input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <u>EQULS</u> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC <input type="checkbox"/> Other: _____		<b>Number of Containers:</b> _____ <b>Sample Type:</b> <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/ <input type="checkbox"/> Vegetation <input type="checkbox"/> Blossay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	<b>Shipped by:</b> <u>Normal</u> <b>Cooler ID(s):</b> _____ <b>Receipt Temp:</b> <u>5.8 °C</u> <b>On Ice:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>Custody Seal:</b> On Bottle: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Intact:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <b>Signature Match:</b> <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>LABORATORY USE ONLY</b>  <u>8/20/12 1789-001</u>  <u>002</u>  <u>003</u>  <u>004</u>  <u>005</u> </div>																																																																										
<b>Matrix Table:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Standard Turnaround (TAT)</th> <th>Matrix</th> <th>Collection Date</th> <th>Collection Time</th> </tr> </thead> <tbody> <tr> <td>↑ R U S H</td> <td>S</td> <td>08/20/12</td> <td>1030</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1105</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1120</td> </tr> <tr> <td>X</td> <td>S</td> <td>08/20/12</td> <td>1055</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Standard Turnaround (TAT)	Matrix		Collection Date	Collection Time	↑ R U S H	S	08/20/12	1030	X	S	08/20/12	1055	X	S	08/20/12	1105	X	S	08/20/12	1120	X	S	08/20/12	1055																																																	<b>Signature:</b> _____ <b>Date/Time:</b> _____ <b>Received by (print):</b> _____ <b>Received by (print):</b> _____ <b>Received by Laboratory:</b> <u>8-20-12 12:30 Jennifer Bogardi</u>			
Standard Turnaround (TAT)	Matrix	Collection Date	Collection Time																																																																											
↑ R U S H	S	08/20/12	1030																																																																											
X	S	08/20/12	1055																																																																											
X	S	08/20/12	1105																																																																											
X	S	08/20/12	1120																																																																											
X	S	08/20/12	1055																																																																											

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

September 20, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12091458

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 3 samples for AECOM on 9/19/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12091458-001	C-1TP	09/18/12 11:45	09/19/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12091458-002	C-2TP	09/19/12 6:50	09/19/12	Soil	Same As Above
B12091458-003	C-3TP	09/19/12 10:30	09/19/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12091458

**Report Date:** 09/20/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091458-001  
**Client Sample ID:** C-1TP

**Report Date:** 09/20/12  
**Collection Date:** 09/18/12 11:45  
**Date Received:** 09/19/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	24	wt%		0.2		SW3550A	09/19/12 12:44 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	118	mg/kg		20		SW8151A	09/19/12 17:26 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/19/12 17:26 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091458-002  
**Client Sample ID:** C-2TP

**Report Date:** 09/20/12  
**Collection Date:** 09/19/12 06:50  
**Date Received:** 09/19/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	18	wt%		0.2		SW3550A	09/20/12 12:44 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	308	mg/kg		20		SW8151A	09/19/12 17:49 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/19/12 17:49 / jem

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 O - Diluted out.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091458-003  
**Client Sample ID:** C-3TP

**Report Date:** 09/20/12  
**Collection Date:** 09/19/12 10:30  
**Date Received:** 09/19/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	20	wt%		0.2		SW3550A	09/21/12 12:44 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	852	mg/kg		40		SW8151A	09/19/12 18:00 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/19/12 18:00 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 09/20/12  
**Work Order:** B12091458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b> <span style="float: right;">Batch: 65540</span>									
<b>Sample ID: MB-65540</b>	Method Blank								
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	74	53	114			
Run: HECD.I_120919A <span style="float: right;">09/19/12 16:41</span>									
<b>Sample ID: LCS-65540</b>	Laboratory Control Sample								
2,4-D	15.9	mg/kg	2.0	79	25	117			
Surr: DCAA			0.20	59	53	114			
Run: HECD.I_120919A <span style="float: right;">09/19/12 16:53</span>									
<b>Sample ID: B12091458-002AMS</b>	Sample Duplicate								
2,4-D	314	mg/kg	20				4.4	40	
Surr: DCAA			2.0		45	130	0.0	40	O
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12091458-002AMSD</b>	Sample Duplicate								
2,4-D	328	mg/kg	20				0.0	40	
Surr: DCAA			2.0		45	130	0.0	40	O
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12091458

Login completed by: Leslie S. Cadreau

Date Received: 9/19/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 9/19/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	3.3°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

Company Name: **AECOM** EPA/State Compliance: Yes  No

Report Mail Address: **207 N Broadway, Suite 315** State: **MT** Sampler: (Please Print) **S. Young**

**Billing, MT 59701** Invoice Address: **SAA** Purchase Order: **40371** Quote/Bottle Order:

Project Name, PWS, Permit, Etc.: **CPS - LPI Billing** Sample Origin: **MT**

Contact Name: **Shelly Young** Phone/Fax: **406-896-4582** Email: **Shelly.Young@aecom.com**

Invoice Contact & Phone: **SAA**

Special Report/Formats:

EDD/EDT (Electronic Data) Format: **Level IV**

DW  POT/WWTP  State:  Other:

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Number of Containers Air Water Solids Vegetation Bioassay Other DW - Drinking Water	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	Shipped by: Cooler ID(s):
					SEE ATTACHED	SEE ATTACHED				
1 <b>C-1TP</b>	9/18/12	1145	S		X		R		24-hr rush per agreement	Hand
2 <b>C-2TP</b>	9/19/12	0650	S		X		U			3.3 °C
3 <b>C-3TP</b>	9/19/12	1030	S		X		S			On Ice: <input checked="" type="radio"/> N
4							H			Custody Seal On Bottle: <input checked="" type="radio"/> Y <input checked="" type="radio"/> N
5										Intact: <input checked="" type="radio"/> Y <input checked="" type="radio"/> N
6										Signature Match: <input checked="" type="radio"/> Y <input checked="" type="radio"/> N
7										
8										
9										
10										

**Custody Record MUST be Signed**

Relinquished by (print): *[Signature]* Date/Time: **9/19/12 1105** Signature: *[Signature]*

Received by (print): *[Signature]* Date/Time: **9/19/12 1105** Signature: *[Signature]*

Received by Laboratory: **PERKINS** Date/Time: **9/19/12 1105** Signature: *[Signature]*

Sample Disposal: **Return to Client** Lab Disposal:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

September 21, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12091593

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 3 samples for AECOM on 9/20/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12091593-001	C-4 TP	09/19/12 11:35	09/20/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12091593-002	C-6 TP	09/20/12 8:10	09/20/12	Soil	Same As Above
B12091593-003	C-6TPD	09/20/12 8:15	09/20/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12091593

**Report Date:** 09/21/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091593-001  
**Client Sample ID:** C-4 TP

**Report Date:** 09/21/12  
**Collection Date:** 09/19/12 11:35  
**Date Received:** 09/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	16	wt%		0.2		SW3550A	09/20/12 09:57 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	420	mg/kg		20		SW8151A	09/20/12 14:18 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/20/12 14:18 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091593-002  
**Client Sample ID:** C-6 TP

**Report Date:** 09/21/12  
**Collection Date:** 09/20/12 08:10  
**Date Received:** 09/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	17	wt%		0.2		SW3550A	09/20/12 10:02 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	138	mg/kg		20		SW8151A	09/20/12 14:29 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/20/12 14:29 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12091593-003  
**Client Sample ID:** C-6TPD

**Report Date:** 09/21/12  
**Collection Date:** 09/20/12 08:15  
**Date Received:** 09/20/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	17	wt%		0.2		SW3550A	09/20/12 10:06 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	166	mg/kg		20		SW8151A	09/20/12 14:40 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/20/12 14:40 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 09/21/12  
**Work Order:** B12091593

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 65540		
<b>Sample ID: MB-65540</b>	Method Blank				Run: HECD.I_120919A		09/19/12 16:41		
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	74	53	114			
<b>Sample ID: LCS-65540</b>	Laboratory Control Sample				Run: HECD.I_120919A		09/19/12 16:53		
2,4-D	15.9	mg/kg	2.0	79	25	117			
Surr: DCAA			0.20	59	53	114			
<b>Sample ID: B12091458-002AMS</b>	Sample Duplicate				Run: HECD.I_120919A		09/19/12 18:11		
2,4-D	314	mg/kg	20				4.4	40	
Surr: DCAA			2.0		45	130	0.0	40	O
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12091458-002AMSD</b>	Sample Duplicate				Run: HECD.I_120919A		09/19/12 18:22		
2,4-D	328	mg/kg	20				0.0	40	
Surr: DCAA			2.0		45	130	0.0	40	O
-The sample amount was significantly higher than the spike amount, therefore the Matrix Spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Method: SW8151A</b>							Analytical Run: R192083		
<b>Sample ID: 24Dck3</b>	Continuing Calibration Verification Standard						09/20/12 13:44		
2,4-D	0.461	mg/kg	0.020	92	85	115			
Surr: DCAA			0.0020	114	85	115			
<b>Sample ID: 24Dck6</b>	Continuing Calibration Verification Standard						09/20/12 13:55		
2,4-D	1.91	mg/kg	0.020	96	85	115			
Surr: DCAA			0.0020	116	85	115			S
<b>Sample ID: 24Dck6</b>	Continuing Calibration Verification Standard						09/20/12 15:02		
2,4-D	1.96	mg/kg	0.020	98	85	115			
Surr: DCAA			0.0020	115	85	115			

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.  
S - Spike recovery outside of advisory limits.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12091593

Login completed by: Leslie S. Cadreau

Date Received: 9/20/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 9/20/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	1.4°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM**  
 Report Mail Address: **207 N Broadway, Suite #315**  
**Billings, MT 59101**  
 Invoice Address: **SAA**

Project Name, PWS, Permit, Etc.: **CPS - CPI Billings**  
 State: **MT**  
 EPA/State Compliance: Yes  No

Contact Name: **Shelly Young** Phone/Fax: **406 896 4582**  
 Email: **Shelly.Young@aecom.com**  
 Purchase Order: **40371**  
 Sampler: (Please Print) **S. Young**  
 Quote/Bottle Order:

Special Report/Formats:  
 DW  EDD/EDT (Electronic Data)  
 POT/MW/TP  Format:  
 State:  LEVEL IV  
 Other:  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact EI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers Sample Type: A W S V B O DW Vegetation Bioassay Other Air Water Soils/Solids DW - Drinking Water	SEE ATTACHED			
1 C-4 TP	9/19/12	1135	S	X			Comments: 24-hour Rush per Agreement	Receipt Temp: <b>17.4 °C</b> On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal: On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler <input type="checkbox"/> Y <input type="checkbox"/> N Intact: <input type="checkbox"/> Y <input type="checkbox"/> N Signature Match: <input type="checkbox"/> Y <input type="checkbox"/> N
2 C-6 TP	9/20/12	0810	S	X				<b>LABORATORY USE ONLY</b> Signature: <b>172091593-001</b> Match: <b>-002</b>
3 C-6 TPD	9/20/12	0815	S	X				<b>LABORATORY USE ONLY</b> Signature: <b>-003</b> Match: <b>-003</b>
4								
5								
6								
7								
8								
9								
10								

Relinquished by (print): **Shelly Young** Date/Time: **9/20/12 0935**  
 Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Received by Laboratory: **BRONNER** Date/Time: **9/20/12 935A**  
 Signature: \_\_\_\_\_  
 Lab Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.

# ANALYTICAL SUMMARY REPORT

October 25, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12102090

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 9 samples for AECOM on 10/24/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12102090-001	C-F-1	10/23/12 16:45	10/24/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12102090-002	C-F-2	10/23/12 15:45	10/24/12	Soil	Same As Above
B12102090-003	C-F-3	10/23/12 16:48	10/24/12	Soil	Same As Above
B12102090-004	C-F-3D	10/23/12 16:52	10/24/12	Soil	Same As Above
B12102090-005	C-F-4	10/23/12 15:51	10/24/12	Soil	Same As Above
B12102090-006	C-S-N-2D	10/23/12 15:40	10/24/12	Soil	Same As Above
B12102090-007	C-F-6	10/23/12 16:37	10/24/12	Soil	Same As Above
B12102090-008	C-S-E-1	10/23/12 15:36	10/24/12	Soil	Same As Above
B12102090-009	C-S-N-2	10/23/12 15:43	10/24/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12102090

**Report Date:** 10/25/12

## CASE NARRATIVE

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-001  
**Client Sample ID** C-F-1

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 16:45  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	10/24/12 07:07 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	390	mg/kg		20		SW8151A	10/24/12 15:10 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 15:10 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-002  
**Client Sample ID** C-F-2

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 15:45  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	10/24/12 07:26 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1380	mg/kg		200		SW8151A	10/24/12 15:55 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 15:55 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-003  
**Client Sample ID:** C-F-3

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 16:48  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.9	wt%		0.2		SW3550A	10/24/12 07:39 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	720	mg/kg		20		SW8151A	10/24/12 15:44 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 15:44 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-004  
**Client Sample ID:** C-F-3D

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 16:52  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/24/12 07:52 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	864	mg/kg		40		SW8151A	10/24/12 17:35 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 17:35 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-005  
**Client Sample ID:** C-F-4

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 15:51  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.2	wt%		0.2		SW3550A	10/24/12 08:04 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	6560	mg/kg		400		SW8151A	10/24/12 17:24 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 17:24 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-006  
**Client Sample ID:** C-S-N-2D

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 15:40  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	10	wt%		0.2		SW3550A	10/24/12 08:15 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	574	mg/kg		20		SW8151A	10/24/12 16:39 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 16:39 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-007  
**Client Sample ID:** C-F-6

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 16:37  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/24/12 08:34 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	9280	mg/kg		800		SW8151A	10/24/12 17:47 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 17:47 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-008  
**Client Sample ID:** C-S-E-1

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 15:36  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	10/24/12 08:49 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1910	mg/kg		200		SW8151A	10/24/12 17:58 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 17:58 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102090-009  
**Client Sample ID:** C-S-N-2

**Report Date:** 10/25/12  
**Collection Date:** 10/23/12 15:43  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/24/12 08:59 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	706	mg/kg		20		SW8151A	10/24/12 17:13 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/24/12 17:13 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/25/12  
**Work Order:** B12102090

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW3550A									Batch: 66485
<b>Sample ID:</b> B12102090-001ADUP	Sample Duplicate								Run: BAL-ARS-120_121025A
Moisture	11	wt%	0.20						10/24/12 07:09

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/25/12  
**Work Order:** B12102090

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 66486		
<b>Sample ID: MB-66486</b>	Method Blank								
2,4-D	ND	mg/kg	2.0						Run: GECD.I_121024A 10/24/12 14:37
Surr: DCAA			0.20	57	53	114			
<b>Sample ID: LCS-66486</b>	Laboratory Control Sample								
2,4-D	14.9	mg/kg	2.0	74	25	117			Run: GECD.I_121024A 10/24/12 14:48
Surr: DCAA			0.20	64	53	114			
<b>Sample ID: B12102090-001ADUP</b>	Sample Duplicate								
2,4-D	420	mg/kg	20				7.4	40	Run: GECD.I_121024A 10/24/12 15:21
Surr: DCAA			2.0		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12102090

Login completed by: Lisa Gancze

Date Received: 10/24/2012

Reviewed by: BL2000\kmcDonald

Received by: Ig

Reviewed Date: 10/24/2012

Carrier Hand Del  
name:

- |   |   |                             |  |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temp Blank received?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 1.3°C On Ice                            |                             |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM**  
 Project Name, PWS, Permit, Etc.: **CPS-LPI Billings**  
 State: **MT**  
 Report Mail Address: **207 N. Broadway, Suite 315 Billings, MT 59101**  
 Contact Name: **Shelly Young** Phone/Fax: **(406)896-4582** Email: **shelly.young@aecom.com**  
 Invoice Address: **Same as Above**  
 Purchase Order: **40371**  
 Quote/Bottle Order: **601599**

Special Report/Formats:  DW  POTW/WWT  State:  Other:   
 EDD/EDT (Electronic Data) Format: **EQUIS**  
 LEVEL IV  NELAC

Number of Containers:  Air Water/Solids  Vegetation Bioassay Other  DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	Receipt Temp	On Ice	Custody Seal	Intact	Signature Match
1 C-F-1	10/23/12	1645	S	X	X	SEE ATTACHED	24-HOUR RUSH	1.3 °C	Y	Y	Y	Y
2 C-F-2		1545		X	X		"F" Sample			Y	Y	Y
3 C-F-3		1648		X	X		have priority			Y	Y	Y
4 C-F-3D		1652		X	X					Y	Y	Y
5 C-F-4		1551		X	X					Y	Y	Y
6 C-F-5 C-S-N-2D		1540		X	X					Y	Y	Y
7 C-F-6		1637		X	X					Y	Y	Y
8 C-F-7 C-S-E-1		1536		X	X					Y	Y	Y
9 C-F-8 C-S-N-2		1543		X	X					Y	Y	Y

Shipped by: **Hand**  
 Cooler ID(s): **113 °C**  
 On Ice:  Y  N  
 Custody Seal: On Bottle  Y  N  
 Intact:  Y  N  
 Signature Match:  Y  N

Relinquished by (print)	Relinquished by (sig)	Date/Time	Signature	Received by (print)	Received by (sig)	Date/Time	Signature
	Shelly Young	10/23/12		Drop off in Evening delivery Area			

Received by Laboratory: **10-24-12 Bill Dillinger**  
 Date/Time: **10-24-12**  
 Signature: **Bill Dillinger**

**Custody Record MUST be Signed**

Sample Disposal:  Return to Client  Lab Disposal:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This notice is not a limitation of this contract. All such contract data will be clearly notated on your analytical report.



# ANALYTICAL SUMMARY REPORT

October 26, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12102244

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 2 samples for AECOM on 10/25/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12102244-001	C-F-6R	10/25/12 10:01	10/25/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12102244-002	C-F-4R	10/25/12 9:56	10/25/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102244-001  
**Client Sample ID** C-F-6R

**Report Date:** 10/26/12  
**Collection Date:** 10/25/12 10:01  
**DateReceived:** 10/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/25/12 11:32 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	185	mg/kg		20		SW8151A	10/25/12 21:31 / jem
Surr: DCAA	61.0	%REC		53-114		SW8151A	10/25/12 22:04 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102244-002  
**Client Sample ID:** C-F-4R

**Report Date:** 10/26/12  
**Collection Date:** 10/25/12 09:56  
**Date Received:** 10/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	10	wt%		0.2		SW3550A	10/25/12 11:35 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	364	mg/kg		20		SW8151A	10/25/12 21:53 / jem
Surr: DCAA	68.0	%REC		53-114		SW8151A	10/25/12 22:26 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/26/12  
**Work Order:** B12102244

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 66537		
<b>Sample ID: MB-66537</b>	Method Blank					Run: GECD.I_121025B			10/25/12 20:58
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	56	53	114			
<b>Sample ID: LCS-66537</b>	Laboratory Control Sample					Run: GECD.I_121025B			10/25/12 21:09
2,4-D	18.8	mg/kg	2.0	94	25	117			
Surr: DCAA			0.20	51	53	114			S
<b>Sample ID: B12102244-001ADUP</b>	Sample Duplicate					Run: GECD.I_121025B			10/25/12 21:42
2,4-D	210	mg/kg	20				12	40	

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12102244

Login completed by: Leslie S. Cadreau

Date Received: 10/25/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 10/25/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 4.4°C On Ice                            |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: AECOM Project Name, PWS, Permit, Etc.: CPS-CPI Billings EPA/State Compliance: Yes  No

Report Mail Address: 307 N Broadway Suite 315 Billings, MT 59101 Sample Origin: MT State: MT Sampler: (Please Print) Shelly Young

Contact Name: Shelly Young Phone/Fax: 406896-4582 Email: shelly.young@aecom.com Purchase Order: 601

Invoice Address: JAA Invoice Contact & Phone: 24-D Mod/hack Standard Turnaround (TAT): RUSH Comments: 24-hr RUSH

Special Report/Formats:  EDD/EDT (Electronic Data)  POTW/WWTP  State: MT  Other: LEVEL IV  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED				Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See instruction Page	Shipped by: Cooler ID(s):	Receipt Temp	On Ice: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Custody Seal On Bottle <input type="checkbox"/> Y <input checked="" type="checkbox"/> N On Cooler <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Intact <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Signature Match <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
				Number of Containers	Air Water Solids/Other	Vegetation Bioassay	DW - Drinking Water								
<del>C-F-4R</del>	<del>10/25/12</del>	<del>1001</del>	<del>S</del>	<del>SEE ATTACHED</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>9120224</del>	<del>4.4 °C</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	
<del>C-F-4R</del>	<del>10/25/12</del>	<del>1001</del>	<del>S</del>	<del>SEE ATTACHED</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>9120224</del>	<del>4.4 °C</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	
<del>C-F-6R</del>	<del>10/25/12</del>	<del>0956</del>	<del>S</del>	<del>SEE ATTACHED</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>9120224</del>	<del>4.4 °C</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	
<del>C-F-4R</del>	<del>10/25/12</del>	<del>0956</del>	<del>S</del>	<del>SEE ATTACHED</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>9120224</del>	<del>4.4 °C</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	

Signature: [Signature] Date/Time: 10/25/12 10:25

Received by (print): [Signature] Date/Time: 10/25/12 10:25

Received by Laboratory: [Signature] Date/Time: 10/25/12 10:25

Signature: [Signature] Date/Time: 10/25/12 10:25

Received by Laboratory: [Signature] Date/Time: 10/25/12 10:25

Lab Disposal: [Signature] Return to Client: [Signature]

**Custody Record MUST be Signed**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.

## ANALYTICAL SUMMARY REPORT

October 25, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12102180

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 7 samples for AECOM on 10/24/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12102180-001	C-S-N-1	10/24/12 11:12	10/24/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12102180-002	C-F-7	10/24/12 11:03	10/24/12	Soil	Same As Above
B12102180-003	C-F-8	10/24/12 12:18	10/24/12	Soil	Same As Above
B12102180-004	C-F-5	10/24/12 12:43	10/24/12	Soil	Same As Above
B12102180-005	C-S-W-1	10/24/12 12:06	10/24/12	Soil	Same As Above
B12102180-006	C-S-S-1	10/24/12 12:33	10/24/12	Soil	Same As Above
B12102180-007	C-S-S-2	10/24/12 12:25	10/24/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12102180

**Report Date:** 10/25/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-001  
**Client Sample ID:** C-S-N-1

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 11:12  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	10/24/12 14:28 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	338	mg/kg		20		SW8151A	10/25/12 12:41 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 12:41 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-002  
**Client Sample ID:** C-F-7

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 11:03  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/24/12 14:30 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	660	mg/kg		20		SW8151A	10/25/12 12:52 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 12:52 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-003  
**Client Sample ID:** C-F-8

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 12:18  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	13	wt%		0.2		SW3550A	10/24/12 14:33 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	232	mg/kg		20		SW8151A	10/25/12 13:03 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 13:03 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-004  
**Client Sample ID:** C-F-5

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 12:43  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/24/12 14:40 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1010	mg/kg		200		SW8151A	10/25/12 13:58 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 13:58 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-005  
**Client Sample ID:** C-S-W-1

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 12:06  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	14	wt%		0.2		SW3550A	10/24/12 14:42 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	152	mg/kg		20		SW8151A	10/25/12 13:25 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 13:25 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-006  
**Client Sample ID:** C-S-S-1

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 12:33  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12	wt%		0.2		SW3550A	10/24/12 14:49 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1510	mg/kg		200		SW8151A	10/25/12 14:09 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 14:09 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12102180-007  
**Client Sample ID:** C-S-S-2

**Report Date:** 10/25/12  
**Collection Date:** 10/24/12 12:25  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	14	wt%		0.2		SW3550A	10/24/12 14:52 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	980	mg/kg		200		SW8151A	10/25/12 14:20 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/25/12 14:20 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/25/12  
**Work Order:** B12102180

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8151A									Batch: 66486
<b>Sample ID:</b> MB-66486	Method Blank								Run: GECD.I_121024A 10/24/12 14:37
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	57	53	114			
<b>Sample ID:</b> LCS-66486	Laboratory Control Sample								Run: GECD.I_121024A 10/24/12 14:48
2,4-D	14.9	mg/kg	2.0	74	25	117			
Surr: DCAA			0.20	64	53	114			
<b>Sample ID:</b> B12102090-001ADUP	Sample Duplicate								Run: GECD.I_121024A 10/24/12 15:21
2,4-D	420	mg/kg	20				7.4	40	
Surr: DCAA			2.0		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12102180

Login completed by: Jill M. Lippard

Date Received: 10/24/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 10/24/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	3.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

Sample listed as C-S-5 on the Chain of Custody is marked as C-F-5 on the container label. Used C-F-5 for sample identification per container label per Shelly Young.

Sample collection time for C-S-S-1 is listed as 12:25 on the Chain of Custody but as 12:33 on the container label. Sample collection time for C-S-S-2 is listed as 12:33 on the Chain of Custody but as 12:25 on the container label. Per Shelly Young, use sample times provided on the container labels for analysis.



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM** Project Name, PWS, Permit, Etc.: **CPS - LEI - Billings** Sample Origin: **MT** EPA/State Compliance: Yes  No

Report Mail Address: **207 N. Broadway, Suite 315 Billings, MT 59101** Contact Name: **Shelly Young (406) 896-4582** shelly.young@aecom.com Email: **Shelly Young** Sampler: (Please Print) **Shelly Young**

Invoice Address: **Same as Above** Invoice Contact & Phone: **Same as Above** Purchase Order: **61599** Quote/Bottle Order:

Special Report/Formats:  DW  POTW/WWTP  State:  LEVEL IV  NELAC  EDD/EDT (Electronic Data)  Format:  LEVEL IV  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH samples and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B D W			
1 C-S-N-1	10/24/12	1112	S	2, 4-D modified	SEE ATTACHED	R	Comments: 24-NOW RUSH	Shipped by: <b>David</b>
2 C-S-N-2 C-F-7 <sup>99</sup>		1103		X		X		Receipt Temp: <b>3.8 °C</b>
3 C-S-N-2 C-F-8		1218		X		X		On Ice: <input checked="" type="checkbox"/>
4 C-S-N-2 C-S-5		1343		X		X		Custody Seal On Bottle: <b>Y N</b>
5 C-S-W-1		1206		X		X		On Cooler: <b>Y N</b>
6 C-S-S-1		1225		X		X		Intact: <b>Y N</b>
7 C-S-S-2		1233		X		X		Signature Match: <b>Y N</b>
8								Signature: <b>BIZ102180-001</b>
9								Signature: <b>-002</b>
10								Signature: <b>-003</b>

**Custody Record MUST be Signed**

Relinquished by (print): **Shelly Young** Date/Time: **10/24/12 1252** Signature: *[Signature]*

Relinquished by (print): **Derek Haep** Date/Time: **10-24-12 1:38** Signature: *[Signature]*

Received by (print): **Derek Haep** Date/Time: **10-24-12 1252** Signature: *[Signature]*

Received by (print): **Derek Haep** Date/Time: **10-24-12 138** Signature: *[Signature]*

Lab Disposal: **10-24-12 138**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.enervia.com](http://www.enervia.com) for additional information.



# ANALYTICAL SUMMARY REPORT

October 01, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12092390

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 3 samples for AECOM on 9/28/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12092390-001	C-L1-C1	09/28/12 9:30	09/28/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12092390-002	C-L1-C1-D	09/28/12 9:30	09/28/12	Soil	Same As Above
B12092390-003	C-L2-C1	09/28/12 10:00	09/28/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12092390

**Report Date:** 10/01/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092390-001  
**Client Sample ID:** C-L1-C1

**Report Date:** 10/01/12  
**Collection Date:** 09/28/12 09:30  
**Date Received:** 09/28/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	4.1	wt%		0.2		SW3550A	09/28/12 12:01 / cmb
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	17	mg/kg		2.0		SW8151A	09/28/12 19:15 / ldw
Surr: DCAA	98.0	%REC		53-114		SW8151A	09/28/12 19:15 / ldw

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092390-002  
**Client Sample ID:** C-L1-C1-D

**Report Date:** 10/01/12  
**Collection Date:** 09/28/12 09:30  
**Date Received:** 09/28/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	4.6	wt%		0.2		SW3550A	09/28/12 12:01 / cmb
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	18	mg/kg		2.0		SW8151A	09/28/12 19:27 / ldw
Surr: DCAA	86.0	%REC		53-114		SW8151A	09/28/12 19:27 / ldw

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092390-003  
**Client Sample ID:** C-L2-C1

**Report Date:** 10/01/12  
**Collection Date:** 09/28/12 10:00  
**Date Received:** 09/28/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	09/28/12 12:01 / cmb
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1330	mg/kg		100		SW8151A	09/28/12 18:19 / ldw
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/28/12 18:19 / ldw

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/01/12  
**Work Order:** B12092390

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 65819		
<b>Sample ID: MB-65819</b>	Method Blank					Run: GECD.I_120925C			09/28/12 17:00
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	56	53	114			
<b>Sample ID: LCS-65819</b>	Laboratory Control Sample					Run: GECD.I_120925C			09/28/12 17:11
2,4-D	12.4	mg/kg	2.0	62	25	117			
Surr: DCAA			0.20	55	53	114			
<b>Sample ID: B12092390-003ADUP</b>	Sample Duplicate					Run: GECD.I_120925C			09/28/12 18:30
2,4-D	1810	mg/kg	100				31	40	
Surr: DCAA			10		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12092390

Login completed by: Gina McCartney

Date Received: 9/28/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 9/28/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	11.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: AE COM Project Name, PWS, Permit, Etc. CPS- LPI Billings EPA/State Compliance: Yes  No

Report Mail Address: 207 N Broadway, Suite 315 Sample Origin MT State: MT Sampler: (Please Print)

Billings, MT 59102 Contact Name: Shelly Youne Phone/Fax: (406) 896-4582 Email: Shelly.Young@ae.com

Invoice Address: SAA Invoice Contact & Phone: SAA Purchase Order: 40371 Quote/Bottle Order: 61599

Special Report/Formats:  DW  EDD/EDI (Electronic Data)  POT/WWTP  State: MT  Other: LEVEL IV  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B O DW			
1 C-L1-C1	9/28/12	0930	S	2, 4-D Modified	SEE ATTACHED	R U S H	24-hr RUSH	11.8 °C
2 C-L1-C1-D	9/28/12	0930	S					On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
3 C-L2-C1	9/28/12	1000	S					Custody Seal: On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler <input type="checkbox"/> Y <input type="checkbox"/> N Intact <input type="checkbox"/> Y <input type="checkbox"/> N Signature Match <input type="checkbox"/> Y <input type="checkbox"/> N
4								Receipt Temp: <u>11.8 °C</u>
5								Signature: <u>B</u>
6								LABORATORY USE ONLY
7								
8								
9								
10								

Relinquished by (print): Jake Howe Date/Time: 9/28/12 11:08A Signature: [Signature]

Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

Received by Laboratory: DEBORAH Date/Time: 9/28/12 11:08A Signature: [Signature]

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule forms and links.



# ANALYTICAL SUMMARY REPORT

October 11, 2012

AECOM  
207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12100760  
Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 2 samples for AECOM on 10/9/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12100760-001	C-L1-S3	10/09/12 8:45	10/09/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12100760-002	C-L2-S3	10/09/12 9:00	10/09/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12100760

**Report Date:** 10/11/12

## **CASE NARRATIVE**

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture content and are reported on an as-received basis.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12100760-001  
**Client Sample ID:** C-L1-S3

**Report Date:** 10/11/12  
**Collection Date:** 10/09/12 08:45  
**Date Received:** 10/09/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	6.0	wt%		0.2		SW3550A	10/09/12 10:45 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	27	mg/kg		2.0		SW8151A	10/09/12 16:18 / jem
Surr: DCAA	70.0	%REC		53-114		SW8151A	10/09/12 16:18 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12100760-002  
**Client Sample ID** C-L2-S3

**Report Date:** 10/11/12  
**Collection Date:** 10/09/12 09:00  
**DateReceived:** 10/09/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/09/12 10:48 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	1370	mg/kg		200		SW8151A	10/09/12 16:54 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/09/12 16:54 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/11/12  
**Work Order:** B12100760

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 66064		
<b>Sample ID: MB-66064</b>	Method Blank					Run: GECD.I_121009A			10/09/12 15:33
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	59	53	114			
<b>Sample ID: LCS-66064</b>	Laboratory Control Sample					Run: GECD.I_121009A			10/09/12 15:44
2,4-D	14.0	mg/kg	2.0	70	25	117			
Surr: DCAA			0.20	62	53	114			
<b>Sample ID: B12100760-001ADUP</b>	Sample Duplicate					Run: GECD.I_121009A			10/09/12 16:29
2,4-D	16.2	mg/kg	2.0				51	40	R
Surr: DCAA			0.20	60	45	130	0.0	40	

**Qualifiers:**

RL - Analyte reporting limit.

R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12100760

Login completed by: Judy Klier

Date Received: 10/9/2012

Reviewed by: BL2000\kmcDonald

Received by: gmm

Reviewed Date: 10/9/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 2.2°C On Ice                            |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AE COM** Project Name, PWS, Permit, Etc.: **CPS - LPI BILLINGS** Sample Origin: **MT** EPA/State Compliance: Yes  No

Report Mail Address: **207 N. BROADWAY, STE 315 BILLINGS, MT 59101** Contact Name: **Stelly Young** Phone/Fax: **406.896.4582** Email: **stelly.young@ae.com** Sampler: (Please Print) **Stelly Young**

Invoice Address: **SAME AS ABOVE** Invoice Contact & Phone: **SAME AS ABOVE** Purchase Order: **ROSGDI**

Special Report/Formats:  DW  POTW/WWTTP  State:  Other:

EDD/EDT (Electronic Data) Format: **AELCOM**  
 LEVEL IV  NELAC

Number of Containers: **2-4 D MODIFIED** Matrix: **S I**

Sample Type: **AW S V B Q DW** Matrix: **S I**

Air Water: **Solids** Matrix: **S I**

Vegetation: **Bioassay** Matrix: **S I**

Other: **DW - Drinking Water** Matrix: **S I**

Standard Turnaround (TAT): **R U S H**

Comments: **Per quote**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX
<b>C-11-S3</b>	<b>10/9/12</b>	<b>0845</b>	<b>S I</b>
<b>C-12-S3</b>	<b>10/9/12</b>	<b>0900</b>	<b>S I</b>

Shipped by: **HAMCDD** Receipt Temp: **2.2 °C**

On Ice: **Y N** Custody Seal Intact: **Y N** Signature Match: **Y N**

Shipped by: **HAMCDD** Cooler ID(s): **BY 2100760-001**

Signature: **[Signature]** Date: **10-9-12**

Signature: **[Signature]** Date: **10-9-12**

Signature: **[Signature]** Date: **10-9-12**

Signature: **[Signature]** Date: **10-9-12**

**Custody Record MUST be Signed**

Return to Client: **[Signature]** Date: **10/9/12** Time: **1010**

Return to Client: **[Signature]** Date: **10/9/12** Time: **1010**

Return to Client: **[Signature]** Date: **10/9/12** Time: **1010**

Return to Client: **[Signature]** Date: **10/9/12** Time: **1010**

In certain circumstances samples submitted to Energy Laboratories, Inc. may be sub-contracted to other laboratories. All sub-contract data will be clearly marked with our analytical record. This serves as notice of this possibility.



# ANALYTICAL SUMMARY REPORT

October 03, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12100140

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 2 samples for AECOM on 10/2/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12100140-001	C-L2-C2	10/02/12 8:55	10/02/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction
B12100140-002	C-L1-C2	10/02/12 9:25	10/02/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12100140-001  
**Client Sample ID:** C-L2-C2

**Report Date:** 10/03/12  
**Collection Date:** 10/02/12 08:55  
**Date Received:** 10/02/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.8	wt%		0.2		SW3550A	10/02/12 10:43 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	326	mg/kg		20		SW8151A	10/02/12 17:20 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/02/12 17:20 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12100140-002  
**Client Sample ID:** C-L1-C2

**Report Date:** 10/03/12  
**Collection Date:** 10/02/12 09:25  
**Date Received:** 10/02/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/02/12 10:55 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	312	mg/kg		20		SW8151A	10/02/12 17:43 / jem
Surr: DCAA	0	%REC	O	53-114		SW8151A	10/02/12 17:43 / jem

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/03/12  
**Work Order:** B12100140

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8151A									Batch: 65902
<b>Sample ID:</b> MB-65902	Method Blank								Run: GECD.I_121002A 10/02/12 16:47
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	69	53	114			
<b>Sample ID:</b> LCS-65902	Laboratory Control Sample								Run: GECD.I_121002A 10/02/12 16:58
2,4-D	15.9	mg/kg	2.0	79	25	117			
Surr: DCAA			0.20	74	53	114			
<b>Sample ID:</b> B12100140-001ADUP	Sample Duplicate								Run: GECD.I_121002A 10/02/12 17:32
2,4-D	352	mg/kg	20				7.7	40	
Surr: DCAA			2.0		45	130	0.0	40	O

**Qualifiers:**

RL - Analyte reporting limit.  
O - Diluted out.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12100140

Login completed by: Randa Nees

Date Received: 10/2/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 10/2/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	11.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>AECOM</b>		Project Name, PWS, Permit, Etc. <b>CRS - LPI BILLINGS</b>		Sample Origin State: <b>MT</b>		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Report Mail Address: <b>207 N BROADWAY, SUITE 315 BILLINGS, MT 59102</b>		Contact Name: <b>SHELLY YOUNG</b>		Email: <b>shelly.young@aecom.com</b>		Sampler: (Please Print) <b>JEM BOGARDI</b>	
Invoice Address: <b>SAA</b>		Invoice Contact & Phone: <b>SAA</b>		Purchase Order: <b>40371</b>		Quote/Bottle Order: <b>61599</b>	
Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> State: <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <b>EQUS</b> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC		ANALYSIS REQUESTED <b>SEE ATTACHED</b>		Shipped by: <b>HAND</b>	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date		Collection Time		Cooler ID(s):	
1 <b>C-L2-CZ</b>		<b>10/2/12</b>		<b>0855</b>		<b>11.8 °C</b>	
2 <b>C-L1-CZ</b>		<b>10/2/12</b>		<b>0915</b>		On Ice: <b>DW</b>	
3						Custody Seal On Bottle: <b>YN</b> On Cooler: <b>YN</b>	
4						Intact: <b>YN</b>	
5						Signature Match: <b>YN</b>	
6						Receipt Temp: <b>11.8 °C</b>	
7						LABORATORY USE ONLY <b>612100140-2011</b>	
8						<b>L 002</b>	
9							
10							
Standard Turnaround (TAT)		↑		Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page		Comments: <b>RUSH PLUSH</b>	

**Custody Record MUST be Signed**

Relinquished by (print): **J. BOGARDI** Date/Time: **10/2/12 1005**  
 Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_

Signature: *[Signature]* Date/Time: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by Laboratory: **BOGARDI** Date/Time: **10/2/12 1005**  
 Signature: *[Signature]*

Company Name: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at [www.enerlab.com](http://www.enerlab.com) for additional information, downloadable fee schedule, forms, and links.



# ANALYTICAL SUMMARY REPORT

October 23, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12101942

Project Name: CPS-LPI Billings SI Excavation

Energy Laboratories Inc Billings MT received the following 1 sample for AECOM on 10/22/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12101942-001	C-L3-S1	10/22/12 10:10	10/22/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture Sonication Extraction

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:



**CLIENT:** AECOM  
**Project:** CPS-LPI Billings SI Excavation  
**Sample Delivery Group:** B12101942

**Report Date:** 10/23/12

## CASE NARRATIVE

---

Samples analyzed per rapid turnaround time method for 2,4-D. Results are uncorrected for moisture and are reported on an as-received basis.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings SI Excavation  
**Lab ID:** B12101942-001  
**Client Sample ID:** C-L3-S1

**Report Date:** 10/23/12  
**Collection Date:** 10/22/12 10:10  
**Date Received:** 10/22/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	10	wt%		0.2		SW3550A	10/22/12 11:18 / amn
<b>HERBICIDES, CHLORINATED</b>							
2,4-D	384	mg/kg		200		SW8151A	10/22/12 16:24 / jem
Surr: DCAA	72.0	%REC		53-114		SW8151A	10/22/12 17:19 / jem

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM

**Report Date:** 10/23/12

**Project:** CPS-LPI Billings SI Excavation

**Work Order:** B12101942

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 66405		
<b>Sample ID: MB-66405</b>	Method Blank					Run: HECD.I_121022A			10/22/12 15:50
2,4-D	ND	mg/kg	2.0						
Surr: DCAA			0.20	49	53	114			S
- The cause of the low recovery is being investigated. All samples associated with this Laboratory Reagent Blank have surrogate recoveries within Quality Control Guidelines									
<b>Sample ID: LCS-66405</b>	Laboratory Control Sample					Run: HECD.I_121022A			10/22/12 16:01
2,4-D	16.6	mg/kg	2.0	83	25	117			
Surr: DCAA			0.20	69	53	114			
<b>Sample ID: B12101942-001ADUP</b>	Sample Duplicate					Run: HECD.I_121022A			10/22/12 16:35
2,4-D	446	mg/kg	200				15	40	
<b>Sample ID: B12101942-001ADUP</b>	Sample Duplicate					Run: HECD.I_121022A			10/22/12 17:31
Surr: DCAA			0.20	72	45	130		40	

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12101942

Login completed by: Randa Nees

Date Received: 10/22/2012

Reviewed by: BL2000\kmcDonald

Received by: jl

Reviewed Date: 10/22/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 4.4°C On Ice                            |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# ANALYTICAL SUMMARY REPORT

December 14, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12082900

Quote ID: B2723 - Loveland Products 2012 Soil Remediation

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 5 samples for AECOM on 8/31/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12082900-001	SI A-1A	08/31/12 10:18	08/31/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture prep Sonication Extraction Soil Sonication Extraction Semi-Volatile Organic Compounds, Extended List Volatile Organics, Methanol Extraction 8260-Volatile Organic Compounds- Extended List
B12082900-002	SI A-2A	08/31/12 10:02	08/31/12	Soil	Same As Above
B12082900-003	SI A-3A	08/31/12 10:15	08/31/12	Soil	Same As Above
B12082900-004	SI A-3AD	08/31/12 10:11	08/31/12	Soil	Same As Above
B12082900-005	SI A-4B	08/31/12 10:08	08/31/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

**CLIENT:** AECOM  
**Project:** CPS-LPI Billings  
**Sample Delivery Group:** B12082900

**Revised Date:** 12/14/12

**Report Date:** 10/04/12

## CASE NARRATIVE

Report revised 12/14/12 to correct 8260 reported analyte list. Result for 1,2,4-Trichlorobenzene is added to results for sample B12082900-004 and result for 1,2,3-Trichlorobenzene is removed from report for same sample. The revised report replaces in entirety the original report dated 10/3/12. All other sample results and QC are unchanged.

Analyte list for reporting was provided by Shelly Young of AECOM in email dated 10/3/12. Method chosen for reporting is based on method sensitivity and reliability. All requested analytes are reported. The analyte 2-Methylphenol is identified on report as o-Cresol; the analyte pair 3 & 4 -Methylphenols are identified as m&p-Cresols; and Methyl butyl ketone is identified as 2-Hexanone.

All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. Detailed analytical report format identifies which QC batch ID and sequence QC is associated with each analysis result for a sample. Soil results are reported on an as-received basis and are uncorrected for soil moisture.

### 8270 Method specific Comments:

For 8270C Matrix Spike QC analysis (B12082733-001AMS and MSD) the sample extract was diluted 10 times at analysis due to target and non-target compound sample matrix interference. The Reporting Limit reflects this dilution. The analytes given an S1 qualifier, the spike amount was significantly less than the amount found in the sample. Normal QC limits may not be achievable. This sample was not part of the sample delivery group and MS analysis may not reflect the performance of the method on your sample matrix.

### 8151 Method Specific Comments:

Due to analyte levels present in the samples, the sample extracts required analysis at multiple dilutions to quantitate target analytes within the calibrated range of the instrument. The reporting limit for each analyte reflects the lowest dilution level chosen to report the individual compound. For 8151A Herbicide Matrix Spike QC samples B12082900-002AMS and MSD, for the analytes 2,4-D, and Dichlorprop, the sample amount was significantly higher than the spike amount, and therefore the Matrix Spike samples were calculated as duplicate samples.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-1A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-001  
**Collection Date:** 08/31/12 10:18  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>PHYSICAL CHARACTERISTICS</b>												
Moisture	11	wt%		0.2		SW3550A	09/05/12 10:44 / am	09/05/12 11:04	SW3550A	BAL-ARS-120_120906A : 22		65191
<b>VOLATILE ORGANIC COMPOUNDS</b>												
Acetone	ND	mg/kg		4.0		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Acrolein	ND	mg/kg		4.0		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Benzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Bromobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Bromochloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Bromoform	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Bromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
sec-Butylbenzene	0.62	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Carbon disulfide	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Chlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Chloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Chloroform	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Chloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Dibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-1A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-001  
**Collection Date:** 08/31/12 10:18  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Ethylbenzene	0.96	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
2-Hexanone	ND	mg/kg		4.0		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Isopropylbenzene	2.2	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Methylene chloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Naphthalene	4.0	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
n-Propylbenzene	15	mg/kg		1.0		SW8260B	09/10/12 13:03 / jrj	09/04/12 09:00	SW5035	CS5972A.I_120910A : 6		65148
Styrene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Toluene	13	mg/kg		1.0		SW8260B	09/10/12 13:03 / jrj	09/04/12 09:00	SW5035	CS5972A.I_120910A : 6		65148
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Trichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
1,2,4-Trimethylbenzene	123	mg/kg		10		SW8260B	09/10/12 12:36 / jrj	09/04/12 09:00	SW5035	CS5972A.I_120910A : 6		65148
1,3,5-Trimethylbenzene	38	mg/kg		1.0		SW8260B	09/10/12 13:03 / jrj	09/04/12 09:00	SW5035	CS5972A.I_120910A : 6		65148
Vinyl acetate	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Vinyl chloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-1A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-001  
**Collection Date:** 08/31/12 10:18  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
m+p-Xylenes	4.3	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
o-Xylene	18	mg/kg		1.0		SW8260B	09/10/12 13:03 / jrj	09/04/12 09:00	SW5035	CS5972A.I_120910A : 6		65148
Xylenes, Total	22	mg/kg		0.20		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Surr: 1,2-Dichloroethane-d4	116	%REC		60-136		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Surr: Dibromofluoromethane	100	%REC		70-132		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Surr: p-Bromofluorobenzene	105	%REC		78-160		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
Surr: Toluene-d8	100	%REC		75-138		SW8260B	09/04/12 16:28 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 14		65148
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
1-Methylnaphthalene	3.9	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,4,6-Trichlorophenol	3.4	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,4-Dichlorophenol	74	mg/kg		17		SW8270C	09/07/12 18:34 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120907A : 7		65168
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
2-Methylnaphthalene	7.2	mg/kg		1.7		SW8270C	09/07/12 18:02 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120907A : 6		65168
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Chloro-2-methylphenol	4.6	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Chlorophenol	4.8	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Acenaphthene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Acenaphthylene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Azobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzidine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-1A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-001  
**Collection Date:** 08/31/12 10:18  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Benzoic acid	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
bis(2-ethylhexyl)Phthalate	0.73	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Chrysene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Diallate	36	mg/kg		1.7		SW8270C	09/07/12 18:02 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120907A : 6		65168
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Dibenzofuran	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Di-n-octyl phthalate	2.1	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Fluorene	0.10	mg/kg	J	0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Hexachlorobenzene	0.13	mg/kg	J	0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Hexachloroethane	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Isophorone	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
m+p-Cresols	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Nitrobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
o-Cresol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
p-Chloroaniline	1.3	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Phenanthrene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-1A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-001  
**Collection Date:** 08/31/12 10:18  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Phenol	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Pyridine	ND	mg/kg		0.33		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Triallate	767	mg/kg		33		SW8270C	09/10/12 18:04 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120910A : 6		65168
Surr: 2,4,6-Tribromophenol	63.0	%REC	S	65-124		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Surr: 2-Fluorobiphenyl	64.0	%REC	S	67-102		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Surr: 2-Fluorophenol	63.0	%REC		50-108		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Surr: Nitrobenzene-d5	62.0	%REC		62-95		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Surr: Phenol-d5	90.0	%REC		56-102		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
Surr: Terphenyl-d14	68.0	%REC		65-121		SW8270C	09/06/12 17:41 / dsm	09/04/12 14:12	SW3550B	SV5973.I_120906A : 16		65168
<b>HERBICIDES, CHLORINATED</b>												
2,4,5-T	ND	mg/kg		0.40		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
2,4-D	7100	mg/kg		2000		SW8151A	09/11/12 12:17 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 5		65180
2,4-DB	ND	mg/kg		5.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
3,5-Dichlorobenzoic Acid	ND	mg/kg		1.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
4-Nitrophenol	ND	mg/kg		1.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Acifluorfen	ND	mg/kg		1.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Bentazon	ND	mg/kg		5.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Chloramben	ND	mg/kg		1.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Dacthal	ND	mg/kg		2.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Dalapon	ND	mg/kg		5.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Dicamba	3.4	mg/kg		0.50		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Dichlorprop	136	mg/kg		20		SW8151A	09/11/12 22:08 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 11		65180
Dinoseb	ND	mg/kg		2.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
MCPA	ND	mg/kg		400		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
MCPP	ND	mg/kg		400		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Picloram	ND	mg/kg		1.0		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180
Surr: DCAA	0	%REC	O	53-114		SW8151A	09/06/12 12:49 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 2		65180

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
O - Diluted out.

MCL - Maximum contaminant level.  
S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-2A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-002  
**Collection Date:** 08/31/12 10:02  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>PHYSICAL CHARACTERISTICS</b>												
Moisture	5.7	wt%		0.2		SW3550A	09/05/12 10:51 / am	09/05/12 11:04	SW3550A	BAL-ARS-120_120906A : 24		65191
<b>VOLATILE ORGANIC COMPOUNDS</b>												
Acetone	ND	mg/kg		4.0		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Acrolein	ND	mg/kg		4.0		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Benzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Bromobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Bromochloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Bromoform	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Bromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Carbon disulfide	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Chlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Chloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Chloroform	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Chloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Dibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-2A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-002  
**Collection Date:** 08/31/12 10:02  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Ethylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
2-Hexanone	ND	mg/kg		4.0		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Isopropylbenzene	0.033	mg/kg	J	0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Methylene chloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Naphthalene	0.64	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
n-Propylbenzene	0.14	mg/kg	J	0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Styrene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Toluene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Trichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,2,4-Trimethylbenzene	1.9	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
1,3,5-Trimethylbenzene	0.56	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Vinyl acetate	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Vinyl chloride	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-2A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-002  
**Collection Date:** 08/31/12 10:02  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
o-Xylene	0.055	mg/kg	J	0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Xylenes, Total	0.055	mg/kg	J	0.20		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Surr: 1,2-Dichloroethane-d4	107	%REC		60-136		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Surr: Dibromofluoromethane	97.0	%REC		70-132		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Surr: p-Bromofluorobenzene	109	%REC		78-160		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
Surr: Toluene-d8	97.0	%REC		75-138		SW8260B	09/04/12 16:56 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 15		65148
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,4,6-Trichlorophenol	0.62	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,4-Dichlorophenol	8.6	mg/kg		1.7		SW8270C	09/07/12 19:05 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 8		65168
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2-Methylnaphthalene	0.24	mg/kg	J	0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4-Chloro-2-methylphenol	1.8	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4-Chlorophenol	5.0	mg/kg		1.7		SW8270C	09/07/12 19:05 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 8		65168
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Acenaphthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Acenaphthylene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Azobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzidine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-2A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-002  
**Collection Date:** 08/31/12 10:02  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Benzoic acid	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Chrysene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Diallate	1.3	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Dibenzofuran	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Fluorene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Hexachlorobenzene	0.068	mg/kg	J	0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Hexachloroethane	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Isophorone	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
m+p-Cresols	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Nitrobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
o-Cresol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Phenanthrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-2A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-002  
**Collection Date:** 08/31/12 10:02  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Phenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Pyridine	ND	mg/kg		0.33		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Triallate	37	mg/kg		1.7		SW8270C	09/07/12 19:05 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 8		65168
Surr: 2,4,6-Tribromophenol	91.0	%REC		65-124		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Surr: 2-Fluorophenol	75.0	%REC		50-108		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Surr: Nitrobenzene-d5	66.0	%REC		62-95		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Surr: Phenol-d5	75.0	%REC		56-102		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
Surr: Terphenyl-d14	95.0	%REC		65-121		SW8270C	09/06/12 18:12 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 17		65168
<b>HERBICIDES, CHLORINATED</b>												
2,4,5-T	ND	mg/kg		0.40		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
2,4-D	268	mg/kg		20		SW8151A	09/11/12 12:50 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 6		65180
2,4-DB	ND	mg/kg		5.0		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.10		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Acifluorfen	ND	mg/kg		0.10		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Bentazon	ND	mg/kg		0.50		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Chloramben	ND	mg/kg		0.10		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Dacthal	ND	mg/kg		0.20		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Dalapon	ND	mg/kg		0.50		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Dicamba	0.22	mg/kg		0.050		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Dichlorprop	7.7	mg/kg		2.0		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
Dinoseb	ND	mg/kg		0.20		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
MCPA	ND	mg/kg		400		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
MCPP	ND	mg/kg		400		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/06/12 15:22 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 6		65180
Picloram	ND	mg/kg		0.10		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180
Surr: DCAA	116	%REC	S	53-114		SW8151A	09/14/12 14:20 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 4		65180

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** S - Spike recovery outside of advisory limits.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-003  
**Collection Date:** 08/31/12 10:15  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>PHYSICAL CHARACTERISTICS</b>												
Moisture	12	wt%		0.2		SW3550A	09/05/12 10:53 / am	09/05/12 11:04	SW3550A	BAL-ARS-120_120906A : 26		65191
<b>VOLATILE ORGANIC COMPOUNDS</b>												
Acetone	ND	mg/kg		4.0		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Acrolein	ND	mg/kg		4.0		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Benzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Bromobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Bromochloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Bromoform	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Bromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
sec-Butylbenzene	0.075	mg/kg	J	0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Carbon disulfide	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Chlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Chloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Chloroform	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Chloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Dibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-003  
**Collection Date:** 08/31/12 10:15  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Ethylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
2-Hexanone	ND	mg/kg		4.0		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Isopropylbenzene	0.12	mg/kg	J	0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
p-Isopropyltoluene	0.059	mg/kg	J	0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Methylene chloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Naphthalene	0.82	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
n-Propylbenzene	0.40	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Styrene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Toluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Trichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
1,2,4-Trimethylbenzene	5.9	mg/kg		1.0		SW8260B	09/05/12 17:53 / jrj	09/04/12 09:00	SW5035	5971A.I_120905B : 18		65148
1,3,5-Trimethylbenzene	2.0	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Vinyl acetate	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Vinyl chloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-003  
**Collection Date:** 08/31/12 10:15  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
m+p-Xylenes	0.087	mg/kg	J	0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
o-Xylene	0.15	mg/kg	J	0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Xylenes, Total	0.23	mg/kg		0.20		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Surr: 1,2-Dichloroethane-d4	106	%REC		60-136		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Surr: Dibromofluoromethane	97.0	%REC		70-132		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Surr: p-Bromofluorobenzene	109	%REC		78-160		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
Surr: Toluene-d8	98.0	%REC		75-138		SW8260B	09/04/12 17:24 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 16		65148
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
1-Methylnaphthalene	0.38	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,4,6-Trichlorophenol	0.97	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,4-Dichlorophenol	23	mg/kg		1.7		SW8270C	09/07/12 20:07 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 10		65168
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2-Chlorophenol	0.30	mg/kg	J	0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2-Methylnaphthalene	0.62	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4-Chloro-2-methylphenol	1.8	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4-Chlorophenol	5.6	mg/kg		1.7		SW8270C	09/07/12 20:07 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 10		65168
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Acenaphthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Acenaphthylene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Azobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzidine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-003  
**Collection Date:** 08/31/12 10:15  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Benzoic acid	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
bis(2-ethylhexyl)Phthalate	0.45	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Chrysene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Diallate	17	mg/kg		1.7		SW8270C	09/07/12 20:07 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 10		65168
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Dibenzofuran	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Di-n-octyl phthalate	0.40	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Fluorene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Hexachlorobenzene	0.079	mg/kg	J	0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Hexachloroethane	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Isophorone	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
m+p-Cresols	0.097	mg/kg	J	0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Nitrobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
o-Cresol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Phenanthrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3A  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-003  
**Collection Date:** 08/31/12 10:15  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Phenol	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Pyridine	ND	mg/kg		0.33		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Triallate	217	mg/kg		8.3		SW8270C	09/07/12 20:38 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 11		65168
Surr: 2,4,6-Tribromophenol	90.0	%REC		65-124		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Surr: 2-Fluorobiphenyl	80.0	%REC		67-102		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Surr: 2-Fluorophenol	81.0	%REC		50-108		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Surr: Nitrobenzene-d5	78.0	%REC		62-95		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Surr: Phenol-d5	83.0	%REC		56-102		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
Surr: Terphenyl-d14	96.0	%REC		65-121		SW8270C	09/06/12 18:43 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 18		65168
<b>HERBICIDES, CHLORINATED</b>												
2,4,5-T	ND	mg/kg		0.40		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
2,4-D	666	mg/kg		200		SW8151A	09/11/12 14:29 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 9		65180
2,4-DB	ND	mg/kg		5.0		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.10		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Acifluorfen	ND	mg/kg		0.10		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Bentazon	ND	mg/kg		0.50		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Chloramben	ND	mg/kg		1.0		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
Dacthal	ND	mg/kg		0.20		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Dalapon	ND	mg/kg		0.50		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Dicamba	2.0	mg/kg		0.050		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Dichlorprop	21	mg/kg		2.0		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
Dinoseb	ND	mg/kg		0.20		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
MCPA	ND	mg/kg		400		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
MCPP	ND	mg/kg		400		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/06/12 13:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 3		65180
Picloram	ND	mg/kg		0.10		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180
Surr: DCAA	110	%REC		53-114		SW8151A	09/14/12 18:43 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 8		65180

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3AD  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-004  
**Collection Date:** 08/31/12 10:11  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>PHYSICAL CHARACTERISTICS</b>												
Moisture	13	wt%		0.2		SW3550A	09/05/12 10:56 / am	09/05/12 11:04	SW3550A	BAL-ARS-120_120906A : 28		65191
<b>VOLATILE ORGANIC COMPOUNDS</b>												
Acetone	ND	mg/kg		4.0		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Acrolein	ND	mg/kg		4.0		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Benzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Bromobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Bromochloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Bromoform	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Bromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
sec-Butylbenzene	0.088	mg/kg	J	0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Carbon disulfide	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Chlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Chloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Chloroform	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Chloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Dibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3AD  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-004  
**Collection Date:** 08/31/12 10:11  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Ethylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
2-Hexanone	ND	mg/kg		4.0		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Isopropylbenzene	0.14	mg/kg	J	0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
p-Isopropyltoluene	0.066	mg/kg	J	0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Methylene chloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Naphthalene	0.85	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
n-Propylbenzene	0.47	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Styrene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Toluene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Trichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
1,2,4-Trimethylbenzene	7.5	mg/kg		1.0		SW8260B	09/05/12 18:21 / jrj	09/04/12 09:00	SW5035	5971A.I_120905B : 19		65148
1,3,5-Trimethylbenzene	2.3	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Vinyl acetate	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Vinyl chloride	ND	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3AD  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-004  
**Collection Date:** 08/31/12 10:11  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
m+p-Xylenes	0.096	mg/kg	J	0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
o-Xylene	0.16	mg/kg	J	0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Xylenes, Total	0.26	mg/kg		0.20		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Surr: 1,2-Dichloroethane-d4	109	%REC		60-136		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Surr: Dibromofluoromethane	98.0	%REC		70-132		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Surr: p-Bromofluorobenzene	108	%REC		78-160		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
Surr: Toluene-d8	97.0	%REC		75-138		SW8260B	09/04/12 17:52 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 17		65148
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
1-Methylnaphthalene	0.40	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,4,6-Trichlorophenol	0.76	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,4-Dichlorophenol	18	mg/kg		1.7		SW8270C	09/07/12 21:09 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 12		65168
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2-Chlorophenol	0.28	mg/kg	J	0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2-Methylnaphthalene	0.62	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4-Chloro-2-methylphenol	1.7	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4-Chlorophenol	3.9	mg/kg		1.7		SW8270C	09/07/12 21:09 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 12		65168
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Acenaphthene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Acenaphthylene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Azobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzidine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3AD  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-004  
**Collection Date:** 08/31/12 10:11  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Benzoic acid	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
bis(2-ethylhexyl)Phthalate	0.44	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Chrysene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Diallate	16	mg/kg		1.7		SW8270C	09/07/12 21:09 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 12		65168
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Dibenzofuran	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Di-n-octyl phthalate	0.36	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Fluoranthene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Fluorene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Hexachlorobenzene	0.072	mg/kg	J	0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Hexachloroethane	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Isophorone	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
m+p-Cresols	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Nitrobenzene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
o-Cresol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Phenanthrene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-3AD  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-004  
**Collection Date:** 08/31/12 10:11  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Phenol	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Pyrene	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Pyridine	ND	mg/kg		0.33		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Triallate	233	mg/kg		8.3		SW8270C	09/07/12 21:40 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 13		65168
Surr: 2,4,6-Tribromophenol	92.0	%REC		65-124		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Surr: 2-Fluorobiphenyl	80.0	%REC		67-102		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Surr: 2-Fluorophenol	77.0	%REC		50-108		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Surr: Nitrobenzene-d5	76.0	%REC		62-95		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Surr: Phenol-d5	77.0	%REC		56-102		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
Surr: Terphenyl-d14	95.0	%REC		65-121		SW8270C	09/06/12 19:15 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120906A : 19		65168
<b>HERBICIDES, CHLORINATED</b>												
2,4,5-T	ND	mg/kg		0.40		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
2,4-D	858	mg/kg		100		SW8151A	09/14/12 11:03 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 2		65180
2,4-DB	ND	mg/kg		5.0		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.10		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Acifluorfen	ND	mg/kg		0.10		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Bentazon	ND	mg/kg		5.0		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
Chloramben	ND	mg/kg		0.10		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Dacthal	ND	mg/kg		0.20		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Dalapon	ND	mg/kg		0.50		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Dicamba	2.4	mg/kg		0.50		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
Dichlorprop	26	mg/kg		2.0		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
Dinoseb	ND	mg/kg		2.0		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
MCPA	ND	mg/kg		400		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
MCPP	ND	mg/kg		400		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/06/12 14:16 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 4		65180
Picloram	ND	mg/kg		0.10		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180
Surr: DCAA	110	%REC		53-114		SW8151A	09/14/12 17:38 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 7		65180

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-4B  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-005  
**Collection Date:** 08/31/12 10:08  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>PHYSICAL CHARACTERISTICS</b>												
Moisture	12	wt%		0.2		SW3550A	09/05/12 10:58 / am	09/05/12 11:04	SW3550A	BAL-ARS-120_120906A : 30		65191
<b>VOLATILE ORGANIC COMPOUNDS</b>												
Acetone	ND	mg/kg		4.0		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Acrolein	ND	mg/kg		4.0		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Benzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Bromobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Bromochloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Bromoform	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Bromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Carbon disulfide	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Chlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Chloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Chloroform	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Chloromethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Dibromomethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-4B  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-005  
**Collection Date:** 08/31/12 10:08  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Ethylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
2-Hexanone	ND	mg/kg		4.0		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Methylene chloride	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Naphthalene	0.21	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
n-Propylbenzene	0.062	mg/kg	J	0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Styrene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Toluene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Trichloroethene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,2,4-Trimethylbenzene	0.61	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
1,3,5-Trimethylbenzene	0.14	mg/kg	J	0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Vinyl acetate	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Vinyl chloride	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-4B  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-005  
**Collection Date:** 08/31/12 10:08  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>VOLATILE ORGANIC COMPOUNDS</b>												
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
o-Xylene	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Xylenes, Total	ND	mg/kg		0.20		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Surr: 1,2-Dichloroethane-d4	106	%REC		60-136		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Surr: Dibromofluoromethane	99.0	%REC		70-132		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Surr: p-Bromofluorobenzene	116	%REC		78-160		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
Surr: Toluene-d8	98.0	%REC		75-138		SW8260B	09/04/12 18:20 / jrj	09/04/12 09:00	SW5035	5971A.I_120904A : 18		65148
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4-Dichlorophenol	0.91	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Chloro-2-methylphenol	0.47	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Chlorophenol	0.99	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Acenaphthene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Acenaphthylene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Anthracene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Azobenzene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzidine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168

**Report Definitions:** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



**LABORATORY ANALYTICAL REPORT**

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-4B  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-005  
**Collection Date:** 08/31/12 10:08  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Benzoic acid	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Chrysene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Diallate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Dibenzofuran	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Fluoranthene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Fluorene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Hexachloroethane	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Isophorone	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
m+p-Cresols	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Nitrobenzene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
o-Cresol	0.049	mg/kg	J	0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Phenanthrene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Client Sample ID:** SI A-4B  
**Project:** CPS-LPI Billings  
**Matrix:** Soil

**Lab ID:** B12082900-005  
**Collection Date:** 08/31/12 10:08  
**Date Received:** 08/31/12  
**Report Date:** 10/04/12 **Revised Date:** 12/14/12

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>												
Phenol	0.11	mg/kg	J	0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Pyrene	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Pyridine	ND	mg/kg		0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Triallate	0.13	mg/kg	J	0.33		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: 2,4,6-Tribromophenol	84.0	%REC		65-124		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: 2-Fluorobiphenyl	77.0	%REC		67-102		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: 2-Fluorophenol	83.0	%REC		50-108		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: Nitrobenzene-d5	70.0	%REC		62-95		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: Phenol-d5	79.0	%REC		56-102		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
Surr: Terphenyl-d14	99.0	%REC		65-121		SW8270C	09/07/12 22:11 / dsm	09/05/12 13:06	SW3550B	SV5973.I_120907A : 14		65168
<b>HERBICIDES, CHLORINATED</b>												
2,4,5-T	ND	mg/kg		0.0040		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
2,4-D	5.3	mg/kg		2.0		SW8151A	09/06/12 14:48 / ldw	09/05/12 09:41	SW3550B	CECD.I_120904B : 5		65180
2,4-DB	ND	mg/kg		0.50		SW8151A	09/11/12 15:34 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 13		65180
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Acifluorfen	ND	mg/kg		0.010		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Bentazon	ND	mg/kg		0.050		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Chloramben	ND	mg/kg		0.010		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Dacthal	0.025	mg/kg		0.020		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Dalapon	ND	mg/kg		0.050		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Dicamba	0.25	mg/kg		0.0050		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Dichlorprop	0.66	mg/kg		0.20		SW8151A	09/11/12 15:34 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 13		65180
Dinoseb	ND	mg/kg		0.020		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
MCPA	ND	mg/kg		4.0		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
MCPP	ND	mg/kg		4.0		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Pentachlorophenol	ND	mg/kg		0.020		SW8151A	09/11/12 15:34 / ldw	09/05/12 09:41	SW3550B	CECD.I_120911A : 13		65180
Picloram	ND	mg/kg		0.010		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180
Surr: DCAA	81.0	%REC		53-114		SW8151A	09/14/12 12:41 / ldw	09/05/12 09:41	SW3550B	CECD.I_120914A : 3		65180

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Definitions:** J - Estimated value. The analyte was present but less than the reporting limit.

## DATES REPORT

Lab Order: B12082900  
Client: AECOM  
Project: CPS-LPI Billings

Revised Date: 12/14/12

Report Date: 10/04/12

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date Method Batch	Analysis Date
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/11/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/11/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/6/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/4/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/5/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/10/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/10/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	Moisture		09/05/2012 SW3550A [65191]	9/5/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/04/2012 SW8270C [65168]	9/7/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/04/2012 SW8270C [65168]	9/10/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/04/2012 SW8270C [65168]	9/7/2012
B12082900-001A	SI A-1A	8/31/2012 10:18:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/04/2012 SW8270C [65168]	9/6/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/11/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/14/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/6/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/4/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	Moisture		09/05/2012 SW3550A [65191]	9/5/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/6/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-002A	SI A-2A	8/31/2012 10:02:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/14/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/6/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/11/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/4/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/5/2012



## DATES REPORT

Lab Order: B12082900  
Client: AECOM  
Project: CPS-LPI Billings

Revised Date: 12/14/12

Report Date: 10/04/12

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date Method Batch	Analysis Date
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	Moisture		09/05/2012 SW3550A [65191]	9/5/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/6/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-003A	SI A-3A	8/31/2012 10:15:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/6/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/14/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/14/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/4/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/5/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	Moisture		09/05/2012 SW3550A [65191]	9/5/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/6/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-004A	SI A-3AD	8/31/2012 10:11:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/6/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/11/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	8151-Herbicides, Chlorinated		09/05/2012 SW8151A [65180]	9/14/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	8260-Volatile Organic Compounds-Extended List		09/04/2012 SW8260B [65148]	9/4/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	Moisture		09/05/2012 SW3550A [65191]	9/5/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/7/2012
B12082900-005A	SI A-4B	8/31/2012 10:08:00 AM	Soil	Semi-Volatile Organic Compounds, Extended List		09/05/2012 SW8270C [65168]	9/6/2012

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 3	SampType: Laboratory Control Sample	Sample ID: Ics-65148	Method: SW8260B								
Analysis Date: 09/04/12 09:53	Units: mg/kg	Prep Info: Prep Date: 9/4/2012	Prep Method: SW5035								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	10.2	4.0	10		102	49	145				
Acrolein	8.40	4.0	10		84	20	197				
Benzene	1.01	0.20	1		101	70	127				
Bromobenzene	0.992	0.20	1		99	70	135				
Bromochloromethane	0.896	0.20	1		90	60	130				
Bromodichloromethane	0.976	0.20	1		98	56	136				
Bromoform	0.896	0.20	1		90	59	132				
Bromomethane	0.579	0.20	1		58	18	134				
n-Butylbenzene	1.26	0.20	1		126	71	134				
sec-Butylbenzene	1.14	0.20	1		114	67	132				
tert-Butylbenzene	1.09	0.20	1		109	68	134				
Carbon disulfide	0.928	0.20	1		93	32	141				
Carbon tetrachloride	0.936	0.20	1		94	60	140				
Chlorobenzene	0.928	0.20	1		93	75	132				
Chlorodibromomethane	0.928	0.20	1		93	62	133				
Chloroethane	0.527	0.20	1		53	45	139				
Chloroform	0.992	0.20	1		99	62	132				
Chloromethane	1.03	0.20	1		103	41	138				
2-Chloroethyl vinyl ether	0.928	0.20	1		93	41	149				
1,2-Dibromo-3-chloropropane	0.944	0.20	1		94	57	123				
1,2-Dibromoethane	0.952	0.20	1		95	60	135				
2-Chlorotoluene	1.03	0.20	1		103	74	135				
Dibromomethane	0.944	0.20	1		94	60	135				
1,2-Dichlorobenzene	0.968	0.20	1		97	70	130				
4-Chlorotoluene	1.14	0.20	1		114	75	136				
1,3-Dichlorobenzene	1.01	0.20	1		101	71	132				
1,4-Dichlorobenzene	0.992	0.20	1		99	71	131				
Dichlorodifluoromethane	0.880	0.20	1		88	31	123				
1,1-Dichloroethane	1.03	0.20	1		103	66	130				
1,2-Dichloroethane	0.976	0.20	1		98	51	140				
1,1-Dichloroethene	1.14	0.20	1		114	64	133				
cis-1,2-Dichloroethene	0.984	0.20	1		98	63	131				
trans-1,2-Dichloroethene	1.02	0.20	1		102	66	133				
1,2-Dichloropropane	0.976	0.20	1		98	60	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 3	SampType: Laboratory Control Sample				Sample ID: Ics-65148				Method: SW8260B		
Analysis Date: 09/04/12 09:53	Units: mg/kg			Prep Info: Prep Date: 9/4/2012				Prep Method: SW5035			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichloropropane	0.944	0.20	1		94	59	135				
2,2-Dichloropropane	1.16	0.20	1		116	39	157				
1,1-Dichloropropene	1.03	0.20	1		103	65	132				
cis-1,3-Dichloropropene	1.02	0.20	1		102	55	134				
trans-1,3-Dichloropropene	1.13	0.20	1		113	58	146				
Ethylbenzene	1.01	0.20	1		101	74	136				
Hexachlorobutadiene	1.08	0.20	1		108	52	133				
2-Hexanone	10.7	4.0	10		107	54	129				
Isopropylbenzene	1.26	0.20	1		126	70	133				
p-Isopropyltoluene	1.13	0.20	1		113	70	131				
Methyl tert-butyl ether (MTBE)	0.976	0.20	1		98	43	152				
Methyl ethyl ketone	10.3	4.0	10		103	43	148				
Methyl isobutyl ketone	10.0	4.0	10		100	54	127				
Methylene chloride	1.03	0.20	1		103	51	134				
Naphthalene	0.800	0.20	1		80	15	171				
n-Propylbenzene	1.09	0.20	1		109	72	134				
Styrene	1.00	0.20	1		100	70	135				
1,1,1,2-Tetrachloroethane	0.896	0.20	1		90	35	156				
1,1,2,2-Tetrachloroethane	1.02	0.20	1		102	59	135				
Tetrachloroethene	0.888	0.20	1		89	64	139				
Toluene	0.992	0.20	1		99	73	137				
1,2,3-Trichlorobenzene	0.776	0.20	1		78	24	153				
1,2,4-Trichlorobenzene	0.783	0.20	1		78	34	150				
1,1,1-Trichloroethane	0.984	0.20	1		98	63	134				
1,1,2-Trichloroethane	0.896	0.20	1		90	56	136				
Trichloroethene	0.944	0.20	1		94	65	134				
Trichlorofluoromethane	0.944	0.20	1		94	48	140				
1,2,3-Trichloropropane	0.992	0.20	1		99	56	142				
1,2,4-Trimethylbenzene	1.12	0.20	1		112	67	125				
1,3,5-Trimethylbenzene	1.10	0.20	1		110	71	131				
Vinyl acetate	1.28	0.20	1		128	28	123				S
Vinyl chloride	1.01	0.20	1		101	32	136				
m+p-Xylenes	1.95	0.20	2		98	75	136				
o-Xylene	0.960	0.20	1		96	72	134				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: <b>5971A.I_120904A: 3</b>	SampType: <b>Laboratory Control Sample</b>				Sample ID: <b>Ics-65148</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/04/12 09:53</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW5035</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	2.08	0.20	2		104	60	136				
Surr: Dibromofluoromethane	1.94	0.20	2		97	70	132				
Surr: p-Bromofluorobenzene	2.21	0.20	2		110	78	160				
Surr: Toluene-d8	1.97	0.20	2		98	75	138				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>5971A.I_120904A: 4</b>	SampType: <b>Method Blank</b>				Sample ID: <b>mb-65148</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/04/12 11:18</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW5035</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	ND	4.0									
Acrolein	ND	4.0									
Benzene	ND	0.20									
Bromobenzene	ND	0.20									
Bromochloromethane	ND	0.20									
Bromodichloromethane	ND	0.20									
Bromoform	ND	0.20									
Bromomethane	ND	0.20									
n-Butylbenzene	ND	0.20									
sec-Butylbenzene	ND	0.20									
tert-Butylbenzene	ND	0.20									
Carbon disulfide	ND	0.20									
Carbon tetrachloride	ND	0.20									
Chlorobenzene	ND	0.20									
Chlorodibromomethane	ND	0.20									
Chloroethane	ND	0.20									
Chloroform	ND	0.20									
Chloromethane	ND	0.20									
2-Chloroethyl vinyl ether	ND	0.20									
1,2-Dibromo-3-chloropropane	ND	0.20									
1,2-Dibromoethane	ND	0.20									
2-Chlorotoluene	ND	0.20									
Dibromomethane	ND	0.20									
1,2-Dichlorobenzene	ND	0.20									

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 4	SampType: Method Blank	Sample ID: mb-65148	Method: SW8260B								
Analysis Date: 09/04/12 11:18	Units: mg/kg	Prep Info: Prep Date: 9/4/2012	Prep Method: SW5035								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.20									
1,3-Dichlorobenzene	ND	0.20									
1,4-Dichlorobenzene	ND	0.20									
Dichlorodifluoromethane	ND	0.20									
1,1-Dichloroethane	ND	0.20									
1,2-Dichloroethane	ND	0.20									
1,1-Dichloroethene	ND	0.20									
cis-1,2-Dichloroethene	ND	0.20									
trans-1,2-Dichloroethene	ND	0.20									
1,2-Dichloropropane	ND	0.20									
1,3-Dichloropropane	ND	0.20									
2,2-Dichloropropane	ND	0.20									
1,1-Dichloropropene	ND	0.20									
cis-1,3-Dichloropropene	ND	0.20									
trans-1,3-Dichloropropene	ND	0.20									
Ethylbenzene	ND	0.20									
Hexachlorobutadiene	ND	0.20									
2-Hexanone	ND	4.0									
Isopropylbenzene	ND	0.20									
p-Isopropyltoluene	ND	0.20									
Methyl tert-butyl ether (MTBE)	ND	0.20									
Methyl ethyl ketone	ND	4.0									
Methyl isobutyl ketone	ND	4.0									
Methylene chloride	ND	0.20									
Naphthalene	ND	0.20									
n-Propylbenzene	ND	0.20									
Styrene	ND	0.20									
1,1,1,2-Tetrachloroethane	ND	0.20									
1,1,2,2-Tetrachloroethane	ND	0.20									
Tetrachloroethene	ND	0.20									
Toluene	ND	0.20									
1,2,3-Trichlorobenzene	ND	0.20									
1,2,4-Trichlorobenzene	ND	0.20									
1,1,1-Trichloroethane	ND	0.20									

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

Date: 03-Oct-12

Prepared by Billings, MT Branch

BatchID: 65148

Run ID :Run Order: 5971A.I_120904A: 4	SampType: Method Blank				Sample ID: mb-65148				Method: SW8260B		
Analysis Date: 09/04/12 11:18	Units: mg/kg				Prep Info: Prep Date: 9/4/2012				Prep Method: SW5035		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	0.20									
Trichloroethene	ND	0.20									
Trichlorofluoromethane	ND	0.20									
1,2,3-Trichloropropane	ND	0.20									
1,2,4-Trimethylbenzene	ND	0.20									
1,3,5-Trimethylbenzene	ND	0.20									
Vinyl acetate	ND	0.20									
Vinyl chloride	ND	0.20									
m+p-Xylenes	ND	0.20									
o-Xylene	ND	0.20									
Xylenes, Total	ND	0.20									
Surr: 1,2-Dichloroethane-d4	2.12	0.20	2		106	60	136				
Surr: Dibromofluoromethane	1.98	0.20	2		99	70	132				
Surr: p-Bromofluorobenzene	2.63	0.20	2		132	78	160				
Surr: Toluene-d8	1.98	0.20	2		99	75	138				

Associated samples: B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A

Run ID :Run Order: 5971A.I_120904A: 9	SampType: Sample Matrix Spike				Sample ID: b12082879-003ams				Method: SW8260B		
Analysis Date: 09/04/12 13:39	Units: mg/kg				Prep Info: Prep Date: 9/4/2012				Prep Method: SW5035		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	11.2	4.0	10		112	49	145				
Acrolein	8.48	4.0	10		85	19	197				
Benzene	1.08	0.20	1		108	70	127				
Bromobenzene	1.10	0.20	1		110	70	135				
Bromochloromethane	0.984	0.20	1		98	60	130				
Bromodichloromethane	1.02	0.20	1		102	56	136				
Bromoform	0.944	0.20	1		94	59	132				
Bromomethane	0.547	0.20	1		55	18	134				
n-Butylbenzene	1.30	0.20	1		130	71	134				
sec-Butylbenzene	1.26	0.20	1		126	67	132				
tert-Butylbenzene	1.19	0.20	1		119	68	134				
Carbon disulfide	0.992	0.20	1		99	32	141				
Carbon tetrachloride	1.02	0.20	1		102	60	140				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 9	SampType: Sample Matrix Spike	Sample ID: b12082879-003ams	Method: SW8260B								
Analysis Date: 09/04/12 13:39	Units: mg/kg	Prep Info: Prep Date: 9/4/2012	Prep Method: SW5035								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.992	0.20	1		99	75	132				
Chlorodibromomethane	0.944	0.20	1		94	62	133				
Chloroethane	0.584	0.20	1		58	45	139				
Chloroform	1.02	0.20	1		102	62	132				
Chloromethane	0.992	0.20	1		99	41	138				
2-Chloroethyl vinyl ether	0.960	0.20	1		96	41	149				
1,2-Dibromo-3-chloropropane	0.800	0.20	1		80	57	123				
1,2-Dibromoethane	0.992	0.20	1		99	60	135				
2-Chlorotoluene	1.15	0.20	1		115	74	135				
Dibromomethane	1.00	0.20	1		100	60	135				
1,2-Dichlorobenzene	1.03	0.20	1		103	70	130				
4-Chlorotoluene	1.27	0.20	1		127	75	136				
1,3-Dichlorobenzene	1.06	0.20	1		106	71	132				
1,4-Dichlorobenzene	1.07	0.20	1		107	71	131				
Dichlorodifluoromethane	0.856	0.20	1		86	31	123				
1,1-Dichloroethane	1.11	0.20	1		111	66	130				
1,2-Dichloroethane	1.07	0.20	1		107	51	140				
1,1-Dichloroethene	1.22	0.20	1		122	64	133				
cis-1,2-Dichloroethene	1.04	0.20	1		104	63	131				
trans-1,2-Dichloroethene	1.10	0.20	1		110	66	133				
1,2-Dichloropropane	1.00	0.20	1		100	60	130				
1,3-Dichloropropane	0.992	0.20	1		99	59	135				
2,2-Dichloropropane	1.22	0.20	1		122	39	157				
1,1-Dichloropropene	1.13	0.20	1		113	65	132				
cis-1,3-Dichloropropene	1.06	0.20	1		106	55	134				
trans-1,3-Dichloropropene	1.18	0.20	1		118	58	146				
Ethylbenzene	1.06	0.20	1		106	74	136				
Hexachlorobutadiene	0.968	0.20	1		97	52	133				
2-Hexanone	11.6	4.0	10		116	54	129				
Isopropylbenzene	1.40	0.20	1		140	70	133				S
p-Isopropyltoluene	1.22	0.20	1		122	69	131				
Methyl tert-butyl ether (MTBE)	1.04	0.20	1		104	43	152				
Methyl ethyl ketone	11.0	4.0	10		110	43	148				
Methyl isobutyl ketone	10.6	4.0	10		106	54	127				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID:** 65148

Run ID :Run Order: 5971A.I_120904A: 9		SampType: Sample Matrix Spike			Sample ID: b12082879-003ams				Method: SW8260B		
Analysis Date: 09/04/12 13:39		Units: mg/kg			Prep Info: Prep Date: 9/4/2012		Prep Method: SW5035				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	1.09	0.20	1		109	51	134				
Naphthalene	0.781	0.20	1		78	15	171				
n-Propylbenzene	1.22	0.20	1		122	72	134				
Styrene	1.05	0.20	1		105	70	135				
1,1,1,2-Tetrachloroethane	0.920	0.20	1		92	35	156				
1,1,2,2-Tetrachloroethane	1.13	0.20	1		113	59	135				
Tetrachloroethene	0.944	0.20	1		94	64	139				
Toluene	1.04	0.20	1		104	73	137				
1,2,3-Trichlorobenzene	0.558	0.20	1		56	24	153				
1,2,4-Trichlorobenzene	0.587	0.20	1		59	34	150				
1,1,1-Trichloroethane	1.05	0.20	1		105	63	134				
1,1,2-Trichloroethane	0.952	0.20	1		95	56	136				
Trichloroethene	0.992	0.20	1		99	65	134				
Trichlorofluoromethane	1.01	0.20	1		101	48	140				
1,2,3-Trichloropropane	1.10	0.20	1		110	56	142				
1,2,4-Trimethylbenzene	1.19	0.20	1		119	67	125				
1,3,5-Trimethylbenzene	1.22	0.20	1		122	71	130				
Vinyl acetate	1.44	0.20	1		144	28	123				S
Vinyl chloride	1.05	0.20	1		105	32	136				
m+p-Xylenes	2.04	0.20	2		102	75	136				
o-Xylene	1.02	0.20	1		102	72	134				
Surr: 1,2-Dichloroethane-d4	2.14	0.20	2		107	60	136				
Surr: Dibromofluoromethane	1.97	0.20	2		98	70	132				
Surr: p-Bromofluorobenzene	2.27	0.20	2		114	78	160				
Surr: Toluene-d8	1.94	0.20	2		97	75	138				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: 5971A.I_120904A: 10		SampType: Sample Matrix Spike Duplicate			Sample ID: b12082879-003amsd				Method: SW8260B		
Analysis Date: 09/04/12 14:07		Units: mg/kg			Prep Info: Prep Date: 9/4/2012		Prep Method: SW5035				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	9.92	4.0	10		99	49	145	11.2	12	20	
Acrolein	7.54	4.0	10		75	19	197	8.48	12	20	
Benzene	0.984	0.20	1		98	70	127	1.08	9.3	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 10	SampType: Sample Matrix Spike Duplicate				Sample ID: b12082879-003amsd				Method: SW8260B		
Analysis Date: 09/04/12 14:07	Units: mg/kg			Prep Info: Prep Date: 9/4/2012				Prep Method: SW5035			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	0.992	0.20	1		99	70	135	1.104	11	20	
Bromochloromethane	0.872	0.20	1		87	60	130	0.984	12	20	
Bromodichloromethane	0.936	0.20	1		94	56	136	1.016	8.2	20	
Bromoform	0.872	0.20	1		87	59	132	0.944	7.9	20	
Bromomethane	0.572	0.20	1		57	18	134	0.5472	4.4	20	
n-Butylbenzene	1.18	0.20	1		118	71	134	1.304	10	20	
sec-Butylbenzene	1.13	0.20	1		113	67	132	1.256	11	20	
tert-Butylbenzene	1.07	0.20	1		107	68	134	1.192	11	20	
Carbon disulfide	0.864	0.20	1		86	32	141	0.992	14	20	
Carbon tetrachloride	0.920	0.20	1		92	60	140	1.016	9.9	20	
Chlorobenzene	0.928	0.20	1		93	75	132	0.992	6.7	20	
Chlorodibromomethane	0.888	0.20	1		89	62	133	0.944	6.1	20	
Chloroethane	0.563	0.20	1		56	45	139	0.584	3.6	20	
Chloroform	0.928	0.20	1		93	62	132	1.024	9.8	20	
Chloromethane	0.920	0.20	1		92	41	138	0.992	7.5	20	
2-Chloroethyl vinyl ether	0.960	0.20	1		96	41	149	0.96	0.0	20	
1,2-Dibromo-3-chloropropane	0.848	0.20	1		85	57	123	0.8	5.8	20	
1,2-Dibromoethane	0.928	0.20	1		93	60	135	0.992	6.7	20	
2-Chlorotoluene	1.02	0.20	1		102	74	135	1.152	13	20	
Dibromomethane	0.936	0.20	1		94	60	135	1	6.6	20	
1,2-Dichlorobenzene	0.976	0.20	1		98	70	130	1.032	5.6	20	
4-Chlorotoluene	1.12	0.20	1		112	75	136	1.272	13	20	
1,3-Dichlorobenzene	0.976	0.20	1		98	71	132	1.064	8.6	20	
1,4-Dichlorobenzene	0.984	0.20	1		98	71	131	1.072	8.6	20	
Dichlorodifluoromethane	0.726	0.20	1		73	31	123	0.856	16	20	
1,1-Dichloroethane	1.00	0.20	1		100	66	130	1.112	11	20	
1,2-Dichloroethane	0.984	0.20	1		98	51	140	1.072	8.6	20	
1,1-Dichloroethene	1.10	0.20	1		110	64	133	1.224	10	20	
cis-1,2-Dichloroethene	0.944	0.20	1		94	63	131	1.04	9.7	20	
trans-1,2-Dichloroethene	0.984	0.20	1		98	66	133	1.104	11	20	
1,2-Dichloropropane	0.952	0.20	1		95	60	130	1	4.9	20	
1,3-Dichloropropane	0.928	0.20	1		93	59	135	0.992	6.7	20	
2,2-Dichloropropane	1.09	0.20	1		109	39	157	1.224	12	20	
1,1-Dichloropropene	1.01	0.20	1		101	65	132	1.128	11	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: 5971A.I_120904A: 10	SampType: Sample Matrix Spike Duplicate				Sample ID: b12082879-003amsd				Method: SW8260B		
Analysis Date: 09/04/12 14:07	Units: mg/kg			Prep Info: Prep Date: 9/4/2012				Prep Method: SW5035			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	1.00	0.20	1		100	55	134	1.064	6.2	20	
trans-1,3-Dichloropropene	1.09	0.20	1		109	58	146	1.184	8.5	20	
Ethylbenzene	0.976	0.20	1		98	74	136	1.056	7.9	20	
Hexachlorobutadiene	1.05	0.20	1		105	52	133	0.968	7.9	20	
2-Hexanone	10.3	4.0	10		103	54	129	11.6	12	20	
Isopropylbenzene	1.22	0.20	1		122	70	133	1.4	13	20	
p-Isopropyltoluene	1.09	0.20	1		109	69	131	1.224	12	20	
Methyl tert-butyl ether (MTBE)	0.952	0.20	1		95	43	152	1.04	8.8	20	
Methyl ethyl ketone	9.76	4.0	10		98	43	148	11.04	12	20	
Methyl isobutyl ketone	9.76	4.0	10		98	54	127	10.56	7.9	20	
Methylene chloride	0.984	0.20	1		98	51	134	1.088	10	20	
Naphthalene	0.808	0.20	1		81	15	171	0.7808	3.4	20	
n-Propylbenzene	1.07	0.20	1		107	72	134	1.216	13	20	
Styrene	0.984	0.20	1		98	70	135	1.048	6.3	20	
1,1,1,2-Tetrachloroethane	0.872	0.20	1		87	35	156	0.92	5.4	20	
1,1,2,2-Tetrachloroethane	1.03	0.20	1		103	59	135	1.128	8.9	20	
Tetrachloroethene	0.864	0.20	1		86	64	139	0.944	8.8	20	
Toluene	0.968	0.20	1		97	73	137	1.04	7.2	20	
1,2,3-Trichlorobenzene	0.614	0.20	1		61	24	153	0.5584	9.5	20	
1,2,4-Trichlorobenzene	0.626	0.20	1		63	34	150	0.5872	6.5	20	
1,1,1-Trichloroethane	0.944	0.20	1		94	63	134	1.048	10	20	
1,1,2-Trichloroethane	0.888	0.20	1		89	56	136	0.952	7.0	20	
Trichloroethene	0.920	0.20	1		92	65	134	0.992	7.5	20	
Trichlorofluoromethane	0.832	0.20	1		83	48	140	1.008	19	20	
1,2,3-Trichloropropane	0.952	0.20	1		95	56	142	1.096	14	20	
1,2,4-Trimethylbenzene	1.07	0.20	1		107	67	125	1.192	11	20	
1,3,5-Trimethylbenzene	1.10	0.20	1		110	71	130	1.224	11	20	
Vinyl acetate	1.23	0.20	1		123	28	123	1.44	16	20	
Vinyl chloride	0.920	0.20	1		92	32	136	1.048	13	20	
m+p-Xylenes	1.94	0.20	2		97	75	136	2.04	4.8	20	
o-Xylene	0.960	0.20	1		96	72	134	1.016	5.7	20	
Surr: 1,2-Dichloroethane-d4	2.14	0.20	2		107	60	136				
Surr: Dibromofluoromethane	1.96	0.20	2		98	70	132				
Surr: p-Bromofluorobenzene	2.22	0.20	2		111	78	160				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65148**

Run ID :Run Order: <b>5971A.I_120904A: 10</b>	SampType: <b>Sample Matrix Spike Duplicate</b>	Sample ID: <b>b12082879-003amsd</b>	Method: <b>SW8260B</b>								
Analysis Date: <b>09/04/12 14:07</b>	Units: <b>mg/kg</b>	Prep Info: Prep Date: <b>9/4/2012</b>	Prep Method: <b>SW5035</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	1.99	0.20	2		100	75	138				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID:** R191110

Run ID :Run Order: 5971A.I_120904A: 1		SampType: MS Tuning File			Sample ID: bfb090412			Method: SW8260B			
Analysis Date: 09/04/12 08:28		Units: %			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
95, Base Peak	100		100		100	0	100				
50, % of mass 95	21.9		100		21.9	15	40				
75, % of mass 95	44.5		100		44.5	30	60				
96, % of mass 95	7.26		100		7.26	5	9				
173, % of mass 174	ND		100			0	1.99				
174, % of mass 95	66.6		100		66.6	50	99.99				
175, % of mass 174	7.50		100		750	5	9				
176, % of mass 174	96.3		100		96.3	95	101				
177, % of mass 176	6.74		100		674	5	9				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: 5971A.I_120904A: 2		SampType: Continuing Calibration Verification Standard			Sample ID: ccv090412			Method: SW8260B			
Analysis Date: 09/04/12 09:15		Units: mg/kg			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	9.92	2000	10		99	70	130				
Acrolein	11.3	2000	10		113	70	130				
Benzene	1.10	100	1		110	70	130				
Bromobenzene	1.02	100	1		102	70	130				
Bromochloromethane	0.992	100	1		99	70	130				
Bromodichloromethane	1.06	100	1		106	70	130				
Bromoform	1.03	100	1		103	70	130				
Bromomethane	1.09	100	1		109	70	130				
n-Butylbenzene	1.33	100	1		133	70	130				S
sec-Butylbenzene	1.21	100	1		121	70	130				
tert-Butylbenzene	1.12	100	1		112	70	130				
Carbon disulfide	1.10	100	1		110	70	130				
Carbon tetrachloride	1.06	100	1		106	70	130				
Chlorobenzene	1.02	100	1		102	70	130				
Chlorodibromomethane	1.01	100	1		101	70	130				
Chloroethane	1.14	100	1		114	70	130				
Chloroform	1.06	100	1		106	80	120				
Chloromethane	1.18	100	1		118	70	130				
2-Chloroethyl vinyl ether	0.968	100	1		97	70	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

Date: 03-Oct-12

Prepared by Billings, MT Branch

BatchID: R191110

Run ID :Run Order: 5971A.I_120904A: 2	SampType: Continuing Calibration Verification Standard				Sample ID: ccv090412			Method: SW8260B			
Analysis Date: 09/04/12 09:15	Units: mg/kg			Prep Info:			Prep Date:		Prep Method:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	1.09	200	1		109	70	130				
1,2-Dibromoethane	1.01	100	1		101	70	130				
2-Chlorotoluene	1.11	100	1		111	70	130				
Dibromomethane	0.992	100	1		99	70	130				
1,2-Dichlorobenzene	1.09	100	1		109	70	130				
4-Chlorotoluene	1.20	100	1		120	70	130				
1,3-Dichlorobenzene	1.11	100	1		111	70	130				
1,4-Dichlorobenzene	1.07	100	1		107	70	130				
Dichlorodifluoromethane	1.06	100	1		106	70	130				
1,1-Dichloroethane	1.14	100	1		114	70	130				
1,2-Dichloroethane	1.09	100	1		109	70	130				
1,1-Dichloroethene	1.17	100	1		117	80	120				
cis-1,2-Dichloroethene	1.06	100	1		106	70	130				
trans-1,2-Dichloroethene	1.10	100	1		110	70	130				
1,2-Dichloropropane	1.06	100	1		106	80	120				
1,3-Dichloropropane	1.02	100	1		102	70	130				
2,2-Dichloropropane	1.24	100	1		124	70	130				
1,1-Dichloropropene	1.15	100	1		115	70	130				
cis-1,3-Dichloropropene	1.10	100	1		110	70	130				
trans-1,3-Dichloropropene	1.08	100	1		108	70	130				
Ethylbenzene	1.06	100	1		106	80	120				
Hexachlorobutadiene	1.22	100	1		122	70	130				
2-Hexanone	10.5	2000	10		105	70	130				
Isopropylbenzene	1.16	100	1		116	70	130				
p-Isopropyltoluene	1.16	100	1		116	70	130				
Methyl tert-butyl ether (MTBE)	1.05	100	1		105	70	130				
Methyl ethyl ketone	10.2	2000	10		102	70	130				
Methyl isobutyl ketone	10.1	2000	10		101	70	130				
Methylene chloride	1.07	100	1		107	70	130				
Naphthalene	1.02	100	1		102	70	130				
n-Propylbenzene	1.15	100	1		115	70	130				
Styrene	1.06	100	1		106	70	130				
1,1,1,2-Tetrachloroethane	0.984	100	1		98	70	130				
1,1,2,2-Tetrachloroethane	1.15	100	1		115	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID:** R191110

Run ID :Run Order: 5971A.I_120904A: 2	SampType: Continuing Calibration Verification Standard				Sample ID: ccv090412			Method: SW8260B			
Analysis Date: 09/04/12 09:15	Units: mg/kg			Prep Info:			Prep Date:		Prep Method:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	0.944	100	1		94	70	130				
Toluene	1.04	100	1		104	80	120				
1,2,3-Trichlorobenzene	1.00	100	1		100	70	130				
1,2,4-Trichlorobenzene	0.992	100	1		99	70	130				
1,1,1-Trichloroethane	1.07	100	1		107	70	130				
1,1,2-Trichloroethane	1.02	100	1		102	70	130				
Trichloroethene	1.03	100	1		103	70	130				
Trichlorofluoromethane	1.07	100	1		107	70	130				
1,2,3-Trichloropropane	1.06	100	1		106	70	130				
1,2,4-Trimethylbenzene	1.17	100	1		117	70	130				
1,3,5-Trimethylbenzene	1.17	100	1		117	70	130				
Vinyl acetate	1.11	100	1		111	70	130				
Vinyl chloride	1.16	100	1		116	80	120				
m+p-Xylenes	2.10	200	2		105	70	130				
o-Xylene	1.02	100	1		102	70	130				
Xylenes, Total	3.12	100				0	0				
Surr: 1,2-Dichloroethane-d4	2.17	100	2		108	60	136				
Surr: Dibromofluoromethane	1.97	100	2		98	70	132				
Surr: p-Bromofluorobenzene	2.14	100	2		107	78	160				
Surr: Toluene-d8	2.00	100	2		100	75	138				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191189**

Run ID :Run Order: <b>5971A.I_120905B: 1</b>		SampType: <b>MS Tuning File</b>			Sample ID: <b>bf090512</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/05/12 08:19</b>		Units: %			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
95, Base Peak	100		100		100	0	100				
50, % of mass 95	21.5		100		21.5	15	40				
75, % of mass 95	50.2		100		50.2	30	60				
96, % of mass 95	7.99		100		7.99	5	9				
173, % of mass 174	ND		100			0	1.99				
174, % of mass 95	55.5		100		55.5	50	99.99				
175, % of mass 174	8.37		100		837	5	9				
176, % of mass 174	95.6		100		95.6	95	101				
177, % of mass 176	7.07		100		707	5	9				

Associated samples: **B12082900-003A; B12082900-004A**

Run ID :Run Order: <b>5971A.I_120905B: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>ccv090512</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/05/12 09:37</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	1.11	100	1		111	70	130				
Surr: 1,2-Dichloroethane-d4	2.04	100	2		102	60	136				
Surr: Dibromofluoromethane	1.93	100	2		96	70	132				
Surr: p-Bromofluorobenzene	2.18	100	2		109	78	160				
Surr: Toluene-d8	1.98	100	2		99	75	138				

Associated samples: **B12082900-003A; B12082900-004A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID:** R191447

Run ID :Run Order: <b>CS5972A.I_120910A: 1</b>		SampType: <b>MS Tuning File</b>			Sample ID: <b>BFB091012</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/10/12 08:49</b>		Units: <b>%</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
95, Base Peak	100		100		100	0	100				
50, % of mass 95	24.4		100		24.4	15	40				
75, % of mass 95	44.8		100		44.8	30	60				
96, % of mass 95	7.00		100		7	5	9				
173, % of mass 174	ND		100			0	1.99				
174, % of mass 95	83.3		100		83.4	50	99.99				
175, % of mass 174	8.70		100		870	5	9				
176, % of mass 174	100		100		100	95	101				
177, % of mass 176	5.96		100		596	5	9				

Associated samples: **B12082900-001A**

Run ID :Run Order: <b>CS5972A.I_120910A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>ccv091012</b>			Method: <b>SW8260B</b>			
Analysis Date: <b>09/10/12 09:23</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	1.15	100	1		115	70	130				
Toluene	1.19	100	1		119	80	120				
1,2,4-Trimethylbenzene	1.15	100	1		115	70	130				
1,3,5-Trimethylbenzene	1.14	100	1		114	70	130				
o-Xylene	1.16	100	1		116	70	130				
Surr: 1,2-Dichloroethane-d4	1.75	100	2		88	60	136				
Surr: Dibromofluoromethane	1.92	100	2		96	70	132				
Surr: p-Bromofluorobenzene	2.16	100	2		108	78	160				
Surr: Toluene-d8	2.34	100	2		117	75	138				

Associated samples: **B12082900-001A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 7</b>	SampType: <b>Method Blank</b>	Sample ID: <b>MB-65168</b>	Method: <b>SW8270C</b>								
Analysis Date: <b>09/05/12 20:09</b>	Units: <b>mg/kg</b>	Prep Info: Prep Date: <b>9/4/2012</b>	Prep Method: <b>SW3550B</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.33									
2,4,5-Trichlorophenol	ND	0.33									
2,4,6-Trichlorophenol	ND	0.33									
2,4-Dichlorophenol	ND	0.33									
2,4-Dimethylphenol	ND	0.33									
2,4-Dinitrophenol	ND	1.7									
2,4-Dinitrotoluene	ND	0.33									
2,6-Dinitrotoluene	ND	0.33									
2-Chloronaphthalene	ND	0.33									
2-Chlorophenol	ND	0.33									
2-Methylnaphthalene	ND	0.33									
2-Nitrophenol	ND	0.33									
3,3'-Dichlorobenzidine	ND	0.33									
4,6-Dinitro-2-methylphenol	ND	1.7									
4-Bromophenyl phenyl ether	ND	0.33									
4-Chloro-2-methylphenol	ND	0.33									
4-Chloro-3-methylphenol	ND	0.33									
4-Chlorophenol	ND	0.33									
4-Chlorophenyl phenyl ether	ND	0.33									
4-Nitroaniline	ND	0.33									
Acenaphthene	ND	0.33									
Acenaphthylene	ND	0.33									
Anthracene	ND	0.33									
Azobenzene	ND	0.33									
Benzidine	ND	0.33									
Benzo(a)anthracene	ND	0.33									
Benzo(a)pyrene	ND	0.33									
Benzo(b)fluoranthene	ND	0.33									
Benzo(g,h,i)perylene	ND	0.33									
Benzo(k)fluoranthene	ND	0.33									
Benzoic acid	ND	0.33									
bis(-2-chloroethoxy)Methane	ND	0.33									
bis(-2-chloroethyl)Ether	ND	0.33									
bis(2-chloroisopropyl)Ether	ND	0.33									

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 7</b>	SampType: <b>Method Blank</b>			Sample ID: <b>MB-65168</b>			Method: <b>SW8270C</b>				
Analysis Date: <b>09/05/12 20:09</b>	Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
bis(2-ethylhexyl)Phthalate	ND	0.33									
Butylbenzylphthalate	ND	0.33									
Chrysene	ND	0.33									
Diallate	ND	0.33									
Dibenzo(a,h)anthracene	ND	0.33									
Dibenzofuran	ND	0.33									
Diethyl phthalate	ND	0.33									
Dimethyl phthalate	ND	0.33									
Di-n-butyl phthalate	ND	0.33									
Di-n-octyl phthalate	ND	0.33									
Fluoranthene	ND	0.33									
Fluorene	ND	0.33									
Hexachlorobenzene	ND	0.33									
Hexachlorocyclopentadiene	ND	0.33									
Hexachloroethane	ND	0.33									
Indeno(1,2,3-cd)pyrene	ND	0.33									
Isophorone	ND	0.33									
m+p-Cresols	ND	0.33									
Nitrobenzene	ND	0.33									
n-Nitrosodimethylamine	ND	0.33									
n-Nitroso-di-n-propylamine	ND	0.33									
n-Nitrosodiphenylamine	ND	0.33									
o-Cresol	ND	0.33									
p-Chloroaniline	ND	0.33									
Phenanthrene	ND	0.33									
Phenol	ND	0.33									
Pyrene	ND	0.33									
Pyridine	ND	0.33									
Triallate	ND	0.33									
Surr: 2,4,6-Tribromophenol	5.57	0.33	6.67		83	65	124				
Surr: 2-Fluorobiphenyl	2.57	0.33	3.33		77	67	102				
Surr: 2-Fluorophenol	5.57	0.33	6.67		83	50	108				
Surr: Nitrobenzene-d5	2.55	0.33	3.33		77	62	95				
Surr: Phenol-d5	5.07	0.33	6.67		76	56	102				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 7</b>	SampType: <b>Method Blank</b>			Sample ID: <b>MB-65168</b>			Method: <b>SW8270C</b>				
Analysis Date: <b>09/05/12 20:09</b>	Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Terphenyl-d14	3.53	0.33	3.33		106	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120905A: 8</b>	SampType: <b>Laboratory Control Sample</b>			Sample ID: <b>LCS-65168</b>			Method: <b>SW8270C</b>				
Analysis Date: <b>09/05/12 20:40</b>	Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.91	0.33	3.33		87	56	101				
2,4,5-Trichlorophenol	2.97	0.33	3.33		89	36	110				
2,4,6-Trichlorophenol	3.03	0.33	3.33		91	67	110				
2,4-Dichlorophenol	2.90	0.33	3.33		87	66	96				
2,4-Dimethylphenol	2.81	0.33	3.33		84	60	105				
2,4-Dinitrophenol	2.77	1.7	3.33		83	60	106				
2,4-Dinitrotoluene	3.17	0.33	3.33		95	67	111				
2,6-Dinitrotoluene	3.23	0.33	3.33		97	69	110				
2-Chloronaphthalene	2.74	0.33	3.33		82	64	95				
2-Chlorophenol	2.54	0.33	3.33		76	64	88				
2-Methylnaphthalene	2.92	0.33	3.33		88	49	101				
2-Nitrophenol	2.85	0.33	3.33		86	58	97				
3,3'-Dichlorobenzidine	2.27	0.33	3.33		68	41	77				
4,6-Dinitro-2-methylphenol	2.85	1.7	3.33		86	59	102				
4-Bromophenyl phenyl ether	3.03	0.33	3.33		91	66	103				
4-Chloro-2-methylphenol	2.75	0.33	3.33		83	53	107				
4-Chloro-3-methylphenol	3.07	0.33	3.33		92	63	109				
4-Chlorophenol	2.55	0.33	3.33		77	52	116				
4-Chlorophenyl phenyl ether	3.04	0.33	3.33		91	62	107				
4-Nitroaniline	2.88	0.33	3.33		86	53	107				
Acenaphthene	2.60	0.33	3.33		78	68	95				
Acenaphthylene	2.59	0.33	3.33		78	69	92				
Anthracene	2.65	0.33	3.33		80	67	109				
Azobenzene	3.04	0.33	3.33		91	68	99				
Benzidine	1.97	0.33	3.33		59	10	104				
Benzo(a)anthracene	2.91	0.33	3.33		87	66	115				
Benzo(a)pyrene	3.13	0.33	3.33		94	60	115				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 8</b>	SampType: <b>Laboratory Control Sample</b>				Sample ID: <b>LCS-65168</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/05/12 20:40</b>	Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	2.88	0.33	3.33		86	57	123				
Benzo(g,h,i)perylene	3.14	0.33	3.33		94	70	108				
Benzo(k)fluoranthene	2.77	0.33	3.33		83	57	110				
Benzoic acid	3.33	0.33	3.33		100	50	120				
bis(-2-chloroethoxy)Methane	2.88	0.33	3.33		86	54	99				
bis(-2-chloroethyl)Ether	2.69	0.33	3.33		81	52	101				
bis(2-chloroisopropyl)Ether	2.68	0.33	3.33		81	64	84				
bis(2-ethylhexyl)Phthalate	2.94	0.33	3.33		88	57	123				
Butylbenzylphthalate	3.05	0.33	3.33		92	69	106				
Chrysene	2.90	0.33	3.33		87	63	107				
Dibenzo(a,h)anthracene	2.96	0.33	3.33		89	65	110				
Dibenzofuran	2.88	0.33	3.33		86	55	99				
Diethyl phthalate	3.05	0.33	3.33		92	66	105				
Dimethyl phthalate	2.97	0.33	3.33		89	68	103				
Di-n-butyl phthalate	3.04	0.33	3.33		91	68	106				
Di-n-octyl phthalate	3.25	0.33	3.33		97	67	108				
Fluoranthene	2.95	0.33	3.33		89	79	110				
Fluorene	2.91	0.33	3.33		87	69	98				
Hexachlorobenzene	3.01	0.33	3.33		90	65	101				
Hexachlorocyclopentadiene	2.63	0.33	3.33		79	57	94				
Hexachloroethane	2.28	0.33	3.33		68	55	78				
Indeno(1,2,3-cd)pyrene	2.72	0.33	3.33		82	57	126				
Isophorone	2.87	0.33	3.33		86	53	104				
m+p-Cresols	2.73	0.33	3.33		82	54	101				
Nitrobenzene	2.80	0.33	3.33		84	55	94				
n-Nitrosodimethylamine	2.23	0.33	3.33		67	44	85				
n-Nitroso-di-n-propylamine	2.94	0.33	3.33		88	60	99				
n-Nitrosodiphenylamine	3.15	0.33	3.33		95	49	115				
o-Cresol	2.76	0.33	3.33		83	59	101				
p-Chloroaniline	2.54	0.33	3.33		76	33	99				
Phenanthrene	2.92	0.33	3.33		88	67	105				
Phenol	2.61	0.33	3.33		78	59	103				
Pyrene	2.77	0.33	3.33		83	70	106				
Pyridine	1.39	0.33	3.33		42	24	62				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 8</b>		SampType: <b>Laboratory Control Sample</b>			Sample ID: <b>LCS-65168</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/05/12 20:40</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Triallate	2.99	0.33	3.33		90	59	124				
Surr: 2,4,6-Tribromophenol	6.53	0.33	6.67		98	65	124				
Surr: 2-Fluorobiphenyl	2.75	0.33	3.33		82	67	102				
Surr: 2-Fluorophenol	5.37	0.33	6.67		80	50	108				
Surr: Nitrobenzene-d5	2.70	0.33	3.33		81	62	95				
Surr: Phenol-d5	5.53	0.33	6.67		83	56	102				
Surr: Terphenyl-d14	3.29	0.33	3.33		99	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120905A: 21</b>		SampType: <b>Sample Matrix Spike</b>			Sample ID: <b>B12082733-001AMS</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/05/12 22:13</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	10.5	1.7	3.33	9.867	20	56	101				S 1
2,4,5-Trichlorophenol	2.49	1.7	3.33		75	36	110				
2,4,6-Trichlorophenol	2.52	1.7	3.33		76	67	110				
2,4-Dichlorophenol	ND	1.7	3.33			66	96				O
2,4-Dimethylphenol	3.33	1.7	3.33		100	60	105				
2,4-Dinitrophenol	2.21	1.7	3.33		66	60	106				
2,4-Dinitrotoluene	2.75	1.7	3.33		83	67	111				
2,6-Dinitrotoluene	2.80	1.7	3.33		84	69	110				
2-Chloronaphthalene	2.69	1.7	3.33		81	64	95				
2-Chlorophenol	2.74	1.7	3.33		82	64	88				
2-Methylnaphthalene	10.7	1.7	3.33	9	51	49	101				
2-Nitrophenol	2.73	1.7	3.33		82	58	97				
3,3'-Dichlorobenzidine	ND	1.7	3.33			41	77				O
4,6-Dinitro-2-methylphenol	1.99	1.7	3.33		60	59	102				
4-Bromophenyl phenyl ether	2.81	1.7	3.33		84	66	103				
4-Chloro-2-methylphenol	3.33	1.7	3.33		100	53	107				
4-Chloro-3-methylphenol	2.34	1.7	3.33		70	63	109				
4-Chlorophenol	0.770	1.7	3.33		23	52	116				S
4-Chlorophenyl phenyl ether	3.02	1.7	3.33		91	62	107				
4-Nitroaniline	2.09	1.7	3.33		63	53	107				
Acenaphthene	2.88	1.7	3.33		86	68	95				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 21</b>	SampType: <b>Sample Matrix Spike</b>				Sample ID: <b>B12082733-001AMS</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/05/12 22:13</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/4/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	2.96	1.7	3.33		89	69	92				
Anthracene	2.71	1.7	3.33		81	67	109				
Azobenzene	2.86	1.7	3.33		86	68	99				
Benzidine	ND	1.7	3.33			10	104				O
Benzo(a)anthracene	3.06	1.7	3.33		92	66	115				
Benzo(a)pyrene	3.03	1.7	3.33		91	60	115				
Benzo(b)fluoranthene	2.56	1.7	3.33		77	57	123				
Benzo(g,h,i)perylene	3.18	1.7	3.33		95	70	108				
Benzo(k)fluoranthene	3.03	1.7	3.33		91	57	110				
Benzoic acid	ND	1.7	3.33			50	120				O
bis(-2-chloroethoxy)Methane	3.14	1.7	3.33		94	54	99				
bis(-2-chloroethyl)Ether	2.88	1.7	3.33		86	52	101				
bis(2-chloroisopropyl)Ether	3.00	1.7	3.33		90	64	84				S
bis(2-ethylhexyl)Phthalate	3.60	1.7	3.33		108	57	123				
Butylbenzylphthalate	3.67	1.7	3.33		110	69	106				S
Chrysene	3.20	1.7	3.33		96	63	107				
Dibenzo(a,h)anthracene	2.83	1.7	3.33		85	65	110				
Dibenzofuran	3.11	1.7	3.33		93	55	99				
Diethyl phthalate	3.30	1.7	3.33		99	66	105				
Dimethyl phthalate	3.32	1.7	3.33		100	68	103				
Di-n-butyl phthalate	3.40	1.7	3.33		102	68	106				
Di-n-octyl phthalate	3.27	1.7	3.33		98	67	108				
Fluoranthene	3.25	1.7	3.33		97	79	110				
Fluorene	3.63	1.7	3.33	0.6933	88	69	98				
Hexachlorobenzene	3.14	1.7	3.33		94	65	101				
Hexachlorocyclopentadiene	2.11	1.7	3.33		63	57	94				
Hexachloroethane	2.47	1.7	3.33		74	55	78				
Indeno(1,2,3-cd)pyrene	2.51	1.7	3.33		75	57	126				
Isophorone	3.32	1.7	3.33		100	53	104				
m+p-Cresols	2.61	1.7	3.33		78	54	101				
Nitrobenzene	2.63	1.7	3.33		79	55	94				
n-Nitrosodimethylamine	1.82	1.7	3.33		55	44	85				
n-Nitroso-di-n-propylamine	5.07	1.7	3.33		152	60	99				S
n-Nitrosodiphenylamine	3.97	1.7	3.33		119	49	115				S

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 21</b>		SampType: <b>Sample Matrix Spike</b>			Sample ID: <b>B12082733-001AMS</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/05/12 22:13</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>		Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Cresol	2.79	1.7	3.33		84	59	101				
p-Chloroaniline	1.89	1.7	3.33		57	33	99				
Phenanthrene	3.50	1.7	3.33	0.8133	81	67	105				
Phenol	3.24	1.7	3.33		97	59	103				
Pyrene	3.33	1.7	3.33		100	70	106				
Pyridine	1.02	1.7	3.33		31	24	62				
Triallate	3.37	1.7	3.33		101	59	124				
Surr: 2,4,6-Tribromophenol	5.40	1.7	6.67		81	65	124				
Surr: 2-Fluorobiphenyl	2.65	1.7	3.33		79	67	102				
Surr: 2-Fluorophenol	5.03	1.7	6.67		75	50	108				
Surr: Nitrobenzene-d5	3.70	1.7	3.33		111	62	95				S
Surr: Phenol-d5	4.50	1.7	6.67		67	56	102				
Surr: Terphenyl-d14	3.31	1.7	3.33		99	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120905A: 22</b>		SampType: <b>Sample Matrix Spike</b>			Sample ID: <b>B12082733-001AMSD</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/05/12 22:44</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>		Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	11.4	1.7	3.33	9.867	47	56	101	10.53	8.2	40	S 1
2,4,5-Trichlorophenol	2.57	1.7	3.33		77	36	110	2.49	3.0	40	
2,4,6-Trichlorophenol	2.78	1.7	3.33		83	67	110	2.523	9.7	40	
2,4-Dichlorophenol	3.53	1.7	3.33		106	66	96			40	S
2,4-Dimethylphenol	2.97	1.7	3.33		89	60	105	3.333	12	40	
2,4-Dinitrophenol	2.18	1.7	3.33		66	60	106	2.207		40	
2,4-Dinitrotoluene	2.43	1.7	3.33		73	67	111	2.753	12	40	
2,6-Dinitrotoluene	3.23	1.7	3.33		97	69	110	2.8	14	40	
2-Chloronaphthalene	2.78	1.7	3.33		83	64	95	2.69	3.3	40	
2-Chlorophenol	2.95	1.7	3.33		88	64	88	2.74	7.3	40	
2-Methylnaphthalene	11.5	1.7	3.33	9	76	49	101	10.7	7.5	40	
2-Nitrophenol	2.65	1.7	3.33		80	58	97	2.727	2.9	40	
3,3'-Dichlorobenzidine	2.24	1.7	3.33		67	41	77			40	
4,6-Dinitro-2-methylphenol	2.10	1.7	3.33		63	59	102	1.987		40	
4-Bromophenyl phenyl ether	3.37	1.7	3.33		101	66	103	2.81	18	40	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: SV5973.I_120905A: 22	SampType: Sample Matrix Spike				Sample ID: B12082733-001AMSD				Method: SW8270C			
Analysis Date: 09/05/12 22:44	Units: mg/kg				Prep Info: Prep Date: 9/4/2012				Prep Method: SW3550B			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
4-Chloro-2-methylphenol	3.37	1.7	3.33		101	53	107	3.333	1.0	40		
4-Chloro-3-methylphenol	2.88	1.7	3.33		86	63	109	2.337	21	40		
4-Chlorophenol	1.87	1.7	3.33		56	52	116	0.77		40		
4-Chlorophenyl phenyl ether	3.26	1.7	3.33		98	62	107	3.023	7.5	40		
4-Nitroaniline	2.22	1.7	3.33		67	53	107	2.09	6.0	40		
Acenaphthene	3.20	1.7	3.33		96	68	95	2.88	11	40	S	
Acenaphthylene	3.16	1.7	3.33		95	69	92	2.957	6.6	40	S	
Anthracene	2.95	1.7	3.33		89	67	109	2.713	8.4	40		
Azobenzene	3.22	1.7	3.33		97	68	99	2.863	12	40		
Benzidine	ND	1.7	3.33			10	104			40	O	
Benzo(a)anthracene	3.11	1.7	3.33		93	66	115	3.057	1.7	40		
Benzo(a)pyrene	2.90	1.7	3.33		87	60	115	3.033	4.6	40		
Benzo(b)fluoranthene	2.98	1.7	3.33		90	57	123	2.557	15	40		
Benzo(g,h,i)perylene	3.10	1.7	3.33		93	70	108	3.177	2.3	40		
Benzo(k)fluoranthene	2.82	1.7	3.33		85	57	110	3.027	7.1	40		
Benzoic acid	ND	1.7	3.33			50	120			40	O	
bis(-2-chloroethoxy)Methane	3.30	1.7	3.33		99	54	99	3.137	5.2	40		
bis(-2-chloroethyl)Ether	3.28	1.7	3.33		98	52	101	2.88	13	40		
bis(2-chloroisopropyl)Ether	3.73	1.7	3.33		112	64	84	3.003	22	40	S	
bis(2-ethylhexyl)Phthalate	3.90	1.7	3.33		117	57	123	3.6	8.0	40		
Butylbenzylphthalate	3.50	1.7	3.33		105	69	106	3.667	4.7	40		
Chrysene	3.33	1.7	3.33		100	63	107	3.197	4.2	40		
Dibenzo(a,h)anthracene	2.73	1.7	3.33		82	65	110	2.833	3.8	40		
Dibenzofuran	3.37	1.7	3.33		101	55	99	3.113	7.8	40	S	
Diethyl phthalate	3.30	1.7	3.33		99	66	105	3.303	0.2	40		
Dimethyl phthalate	3.60	1.7	3.33		108	68	103	3.323	8.0	40	S	
Di-n-butyl phthalate	3.53	1.7	3.33		106	68	106	3.4	3.8	40		
Di-n-octyl phthalate	3.47	1.7	3.33		104	67	108	3.267	5.9	40		
Fluoranthene	3.40	1.7	3.33		102	79	110	3.247	4.6	40		
Fluorene	3.90	1.7	3.33	0.6933	96	69	98	3.633	7.1	40		
Hexachlorobenzene	3.20	1.7	3.33		96	65	101	3.143	1.7	40		
Hexachlorocyclopentadiene	2.11	1.7	3.33		63	57	94	2.113	0.3	40		
Hexachloroethane	2.62	1.7	3.33		79	55	78	2.467	6.0	40	S	
Indeno(1,2,3-cd)pyrene	2.62	1.7	3.33		79	57	126	2.51	4.2	40		

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120905A: 22</b>		SampType: <b>Sample Matrix Spike</b>			Sample ID: <b>B12082733-001AMSD</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/05/12 22:44</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/4/2012</b>		Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Isophorone	3.70	1.7	3.33		111	53	104	3.323	11	40	S
m+p-Cresols	3.30	1.7	3.33		99	54	101	2.613	23	40	
Nitrobenzene	4.27	1.7	3.33		128	55	94	2.627	48	40	SR
n-Nitrosodimethylamine	2.04	1.7	3.33		61	44	85	1.82	11	40	
n-Nitroso-di-n-propylamine	5.53	1.7	3.33		166	60	99	5.067	8.8	40	S
n-Nitrosodiphenylamine	3.80	1.7	3.33		114	49	115	3.967	4.3	40	
o-Cresol	3.25	1.7	3.33		97	59	101	2.79	15	40	
p-Chloroaniline	2.41	1.7	3.33		72	33	99	1.887	24	40	
Phenanthrene	3.80	1.7	3.33	0.8133	90	67	105	3.5	8.2	40	
Phenol	3.29	1.7	3.33		99	59	103	3.243	1.3	40	
Pyrene	3.57	1.7	3.33		107	70	106	3.327	7.0	40	S
Pyridine	1.36	1.7	3.33		41	24	62	1.02		40	
Triallate	3.50	1.7	3.33		105	59	124	3.367	3.9	40	
Surr: 2,4,6-Tribromophenol	5.57	1.7	6.67		83	65	124				
Surr: 2-Fluorobiphenyl	2.92	1.7	3.33		88	67	102				
Surr: 2-Fluorophenol	5.53	1.7	6.67		83	50	108				
Surr: Nitrobenzene-d5	4.00	1.7	3.33		120	62	95				S
Surr: Phenol-d5	5.23	1.7	6.67		78	56	102				
Surr: Terphenyl-d14	3.43	1.7	3.33		103	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120906A: 8</b>		SampType: <b>Laboratory Control Sample</b>			Sample ID: <b>SknAE-65168</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/06/12 16:08</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/5/2012</b>		Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dimethylphenol	2.60	0.33	3.33		78	60	105				
2,4-Dinitrophenol	2.41	1.7	3.33		72	60	106				
m+p-Cresols	4.43	0.33	6.67		66	54	101				
o-Cresol	2.39	0.33	3.33		72	59	101				
Phenol	2.35	0.33	3.33		71	59	103				
Surr: 2,4,6-Tribromophenol	5.93	0.33	6.67		89	65	124				
Surr: 2-Fluorobiphenyl	2.70	0.33	3.33		81	67	102				
Surr: 2-Fluorophenol	4.57	0.33	6.67		68	50	108				
Surr: Nitrobenzene-d5	2.36	0.33	3.33		71	62	95				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

Date: 03-Oct-12

Prepared by Billings, MT Branch

BatchID: 65168

Run ID :Run Order: <b>SV5973.I_120906A: 8</b>	SampType: <b>Laboratory Control Sample</b>				Sample ID: <b>SknAE-65168</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/06/12 16:08</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/5/2012</b>				Prep Method: <b>SW3550B</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Phenol-d5	4.80	0.33	6.67		72	56	102				
Surr: Terphenyl-d14	3.37	0.33	3.33		101	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120906A: 9</b>	SampType: <b>Laboratory Control Sample</b>				Sample ID: <b>SknBN-65168</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/06/12 16:39</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/5/2012</b>				Prep Method: <b>SW3550B</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.84	0.33	3.33		85	56	101				
Anthracene	3.10	0.33	3.33		93	67	109				
Benzo(a)anthracene	3.12	0.33	3.33		94	66	115				
Benzo(a)pyrene	3.29	0.33	3.33		99	60	115				
Benzo(b)fluoranthene	3.27	0.33	3.33		98	57	123				
Benzo(k)fluoranthene	2.76	0.33	3.33		83	57	110				
bis(2-ethylhexyl)Phthalate	3.05	0.33	3.33		92	57	123				
Butylbenzylphthalate	3.09	0.33	3.33		93	69	106				
Chrysene	3.00	0.33	3.33		90	63	107				
Dibenzo(a,h)anthracene	3.03	0.33	3.33		91	65	110				
Diethyl phthalate	3.03	0.33	3.33		91	66	105				
Dimethyl phthalate	2.97	0.33	3.33		89	68	103				
Di-n-butyl phthalate	3.02	0.33	3.33		91	68	106				
Fluoranthene	3.24	0.33	3.33		97	79	110				
Phenanthrene	2.85	0.33	3.33		86	67	105				
Pyrene	2.93	0.33	3.33		88	70	106				
Pyridine	1.22	0.33	3.33		37	24	62				
Surr: 2,4,6-Tribromophenol	5.60	0.33	6.67		84	65	124				
Surr: 2-Fluorobiphenyl	2.69	0.33	3.33		81	67	102				
Surr: 2-Fluorophenol	5.00	0.33	6.67		75	50	108				
Surr: Nitrobenzene-d5	2.45	0.33	3.33		74	62	95				
Surr: Phenol-d5	5.33	0.33	6.67		80	56	102				
Surr: Terphenyl-d14	3.10	0.33	3.33		93	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65168**

Run ID :Run Order: <b>SV5973.I_120906A: 10</b>	SampType: <b>Laboratory Control Sample</b>				Sample ID: <b>APP2A-65168</b>				Method: <b>SW8270C</b>		
Analysis Date: <b>09/06/12 17:10</b>	Units: <b>mg/kg</b>				Prep Info: Prep Date: <b>9/5/2012</b>		Prep Method: <b>SW3550B</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diallate	3.43	0.33	3.33		103	10	165				
Surr: 2,4,6-Tribromophenol	5.97	0.33	6.67		89	65	124				
Surr: 2-Fluorobiphenyl	2.81	0.33	3.33		84	67	102				
Surr: 2-Fluorophenol	5.27	0.33	6.67		79	50	108				
Surr: Nitrobenzene-d5	2.62	0.33	3.33		79	62	95				
Surr: Phenol-d5	5.57	0.33	6.67		83	56	102				
Surr: Terphenyl-d14	3.40	0.33	3.33		102	65	121				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191365**

Run ID :Run Order: <b>SV5973.I_120906A: 1</b>		SampType: <b>MS Tuning File</b>			Sample ID: <b>06-Sep-12_TUNE_1</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/06/12 12:39</b>		Units: <b>%</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
198, Base Peak	100	0.010	100		100	100	100				
51, % of mass 198	45.1	0.010	100		45.1	30	60				
68, % of mass 69	ND	0.010	100			0	1.99				
69, % Relative Abundance	49.1	0.010	100		49.1	0.01	99.99				
70, % of mass 69	0.500	0.010	100		0.5	0	1.99				
127, % of mass 198	50.7	0.010	100		50.7	40	60				
197, % of mass 198	ND	0.010	100			0	0.99				
199, % of mass 198	6.93	0.010	100		693	5	9				
275, % of mass 198	22.6	0.010	100		22.6	10	30				
365, % of mass 198	2.42	0.010	100		242	1	99.99				
441, % of mass 443	76.5	0.010	100		76.5	0.01	99.99				
442, % of mass 198	71.8	0.010	100		71.8	40	100				
443, % of mass 442	19.5	0.010	100		19.5	17	23				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A**

Run ID :Run Order: <b>SV5973.I_120906A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>06-Sep-12_CCV_2</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/06/12 13:01</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.42	0.33	2.5		97	70	130				
2,4,5-Trichlorophenol	2.40	0.33	2.5		96	70	130				
2,4,6-Trichlorophenol	2.51	0.33	2.5		101	80	120				
2,4-Dimethylphenol	2.35	0.33	2.5		94	70	130				
2,4-Dinitrophenol	2.19	1.7	2.5		88	70	130				
2,4-Dinitrotoluene	2.50	0.33	2.5		100	70	130				
2,6-Dinitrotoluene	2.54	0.33	2.5		101	70	130				
2-Chloronaphthalene	2.27	0.33	2.5		91	70	130				
2-Chlorophenol	2.29	0.33	2.5		92	70	130				
2-Methylnaphthalene	2.45	0.33	2.5		98	70	130				
2-Nitrophenol	2.40	0.33	2.5		96	80	120				
3,3'-Dichlorobenzidine	2.47	0.33	2.5		99	70	130				
4,6-Dinitro-2-methylphenol	2.30	1.7	2.5		92	70	130				
4-Bromophenyl phenyl ether	2.37	0.33	2.5		95	70	130				
4-Chloro-2-methylphenol	2.45	0.33	2.5		98	70	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191365**

Run ID :Run Order: **SV5973.I\_120906A: 2**

SampType: **Continuing Calibration Verification Standard** Sample ID: **06-Sep-12\_CCV\_2**

Method: **SW8270C**

Analysis Date: **09/06/12 13:01**

Units: **mg/kg**

Prep Info: Prep Date:

Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	2.47	0.33	2.5		99	80	120				
4-Chlorophenol	2.12	0.33	2.5		85	70	130				
4-Chlorophenyl phenyl ether	2.34	0.33	2.5		94	70	130				
4-Nitroaniline	2.52	0.33	2.5		101	70	130				
Acenaphthene	2.28	0.33	2.5		91	80	120				
Acenaphthylene	2.39	0.33	2.5		96	70	130				
Anthracene	2.30	0.33	2.5		92	70	130				
Azobenzene	2.55	0.33	2.5		102	70	130				
Benzidine	2.37	0.33	2.5		95	70	130				
Benzo(a)anthracene	2.42	0.33	2.5		97	70	130				
Benzo(a)pyrene	2.34	0.33	2.5		94	80	120				
Benzo(b)fluoranthene	2.36	0.33	2.5		95	70	130				
Benzo(g,h,i)perylene	2.36	0.33	2.5		94	70	130				
Benzo(k)fluoranthene	2.37	0.33	2.5		95	70	130				
Benzoic acid	1.90	0.33	2.5		76	70	130				
bis(-2-chloroethoxy)Methane	2.45	0.33	2.5		98	70	130				
bis(-2-chloroethyl)Ether	2.53	0.33	2.5		101	70	130				
bis(2-chloroisopropyl)Ether	2.53	0.33	2.5		101	70	130				
bis(2-ethylhexyl)Phthalate	2.35	0.33	2.5		94	70	130				
Butylbenzylphthalate	2.42	0.33	2.5		97	70	130				
Chrysene	2.25	0.33	2.5		90	70	130				
Dibenzo(a,h)anthracene	2.49	0.33	2.5		100	70	130				
Dibenzofuran	2.32	0.33	2.5		93	70	130				
Diethyl phthalate	2.37	0.33	2.5		95	70	130				
Dimethyl phthalate	2.34	0.33	2.5		94	70	130				
Di-n-butyl phthalate	2.28	0.33	2.5		91	70	130				
Di-n-octyl phthalate	2.43	0.33	2.5		97	80	120				
Fluoranthene	2.48	0.33	2.5		99	80	120				
Fluorene	2.33	0.33	2.5		93	70	130				
Hexachlorobenzene	2.34	0.33	2.5		94	70	130				
Hexachlorocyclopentadiene	2.32	0.33	2.5		93	70	130				
Hexachloroethane	2.28	0.33	2.5		91	70	130				
Indeno(1,2,3-cd)pyrene	2.51	0.33	2.5		100	70	130				
Isophorone	2.39	0.33	2.5		96	70	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

**ANALYTICAL QC SUMMARY REPORT**  
Prepared by Billings, MT Branch  
**BatchID: R191365**

Date: 03-Oct-12

Run ID :Run Order: <b>SV5973.I_120906A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>06-Sep-12_CCV_2</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/06/12 13:01</b>		Units: <b>mg/kg</b>			Prep Info:		Prep Date:		Prep Method:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m+p-Cresols	2.49	0.33	2.5		100	70	130				
Nitrobenzene	2.23	0.33	2.5		89	70	130				
n-Nitrosodimethylamine	2.30	0.33	2.5		92	70	130				
n-Nitroso-di-n-propylamine	2.63	0.33	2.5		105	70	130				
n-Nitrosodiphenylamine	2.37	0.33	2.5		95	80	120				
o-Cresol	2.48	0.33	2.5		99	70	130				
p-Chloroaniline	2.23	0.33	2.5		89	70	130				
Phenanthrene	2.38	0.33	2.5		95	70	130				
Phenol	2.38	0.33	2.5		95	80	120				
Pyrene	2.33	0.33	2.5		93	70	130				
Pyridine	2.57	0.33	2.5		103	70	130				
Surr: 2,4,6-Tribromophenol	2.34	0.33	2.5		94	70	130				
Surr: 2-Fluorobiphenyl	2.21	0.33	2.5		88	70	130				
Surr: 2-Fluorophenol	2.43	0.33	2.5		97	70	130				
Surr: Nitrobenzene-d5	2.35	0.33	2.5		94	70	130				
Surr: Phenol-d5	2.42	0.33	2.5		97	70	130				
Surr: Terphenyl-d14	2.31	0.33	2.5		92	70	130				

Associated samples:

Run ID :Run Order: <b>SV5973.I_120906A: 3</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>06-Sep-12_CCV_3</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/06/12 13:32</b>		Units: <b>mg/kg</b>			Prep Info:		Prep Date:		Prep Method:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diallate	2.82	0.33	2.5		113	70	130				

Associated samples:

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID:** R191428

Run ID :Run Order: <b>SV5973.I_120907A: 1</b>		SampType: <b>MS Tuning File</b>			Sample ID: <b>07-Sep-12_TUNE_1</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/07/12 15:35</b>		Units: <b>%</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
198, Base Peak	100	0.010	100		100	100	100				
51, % of mass 198	44.2	0.010	100		44.2	30	60				
68, % of mass 69	ND	0.010	100			0	1.99				
69, % Relative Abundance	48.1	0.010	100		48.1	0.01	99.99				
70, % of mass 69	0.490	0.010	100		0.49	0	1.99				
127, % of mass 198	50.9	0.010	100		50.9	40	60				
197, % of mass 198	ND	0.010	100			0	0.99				
199, % of mass 198	7.15	0.010	100		715	5	9				
275, % of mass 198	22.7	0.010	100		22.7	10	30				
365, % of mass 198	2.41	0.010	100		241	1	99.99				
441, % of mass 443	83.3	0.010	100		83.3	0.01	99.99				
442, % of mass 198	77.2	0.010	100		77.2	40	100				
443, % of mass 442	19.2	0.010	100		19.2	17	23				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>SV5973.I_120907A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>07-Sep-12_CCV_2</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/07/12 15:58</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.53	0.33	2.5		101	70	130				
2,4,5-Trichlorophenol	2.41	0.33	2.5		97	70	130				
2,4,6-Trichlorophenol	2.75	0.33	2.5		110	80	120				
2,4-Dichlorophenol	2.44	0.33	2.5		98	80	120				
2,4-Dimethylphenol	2.48	0.33	2.5		99	70	130				
2,4-Dinitrophenol	2.43	1.7	2.5		97	70	130				
2,4-Dinitrotoluene	2.65	0.33	2.5		106	70	130				
2,6-Dinitrotoluene	2.77	0.33	2.5		111	70	130				
2-Chloronaphthalene	2.52	0.33	2.5		101	70	130				
2-Chlorophenol	2.41	0.33	2.5		97	70	130				
2-Methylnaphthalene	2.37	0.33	2.5		95	70	130				
2-Nitrophenol	2.52	0.33	2.5		101	80	120				
3,3'-Dichlorobenzidine	2.61	0.33	2.5		104	70	130				
4,6-Dinitro-2-methylphenol	2.52	1.7	2.5		101	70	130				
4-Bromophenyl phenyl ether	2.53	0.33	2.5		101	70	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191428**

Run ID :Run Order: **SV5973.I\_120907A: 2**

SampType: **Continuing Calibration Verification Standard** Sample ID: **07-Sep-12\_CCV\_2**

Method: **SW8270C**

Analysis Date: **09/07/12 15:58**

Units: **mg/kg**

Prep Info: Prep Date:

Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chloro-2-methylphenol	2.57	0.33	2.5		103	70	130				
4-Chloro-3-methylphenol	2.58	0.33	2.5		103	80	120				
4-Chlorophenol	2.24	0.33	2.5		90	70	130				
4-Chlorophenyl phenyl ether	2.51	0.33	2.5		100	70	130				
4-Nitroaniline	2.72	0.33	2.5		109	70	130				
Acenaphthene	2.49	0.33	2.5		100	80	120				
Acenaphthylene	2.37	0.33	2.5		95	70	130				
Anthracene	2.38	0.33	2.5		95	70	130				
Azobenzene	2.54	0.33	2.5		102	70	130				
Benzidine	2.46	0.33	2.5		98	70	130				
Benzo(a)anthracene	2.67	0.33	2.5		107	70	130				
Benzo(a)pyrene	2.52	0.33	2.5		101	80	120				
Benzo(b)fluoranthene	2.38	0.33	2.5		95	70	130				
Benzo(g,h,i)perylene	2.48	0.33	2.5		99	70	130				
Benzo(k)fluoranthene	2.65	0.33	2.5		106	70	130				
Benzoic acid	2.57	0.33	2.5		103	70	130				
bis(-2-chloroethoxy)Methane	2.56	0.33	2.5		103	70	130				
bis(-2-chloroethyl)Ether	2.46	0.33	2.5		99	70	130				
bis(2-chloroisopropyl)Ether	2.57	0.33	2.5		103	70	130				
bis(2-ethylhexyl)Phthalate	2.44	0.33	2.5		98	70	130				
Butylbenzylphthalate	2.53	0.33	2.5		101	70	130				
Chrysene	2.32	0.33	2.5		93	70	130				
Dibenzo(a,h)anthracene	2.61	0.33	2.5		104	70	130				
Dibenzofuran	2.53	0.33	2.5		101	70	130				
Diethyl phthalate	2.44	0.33	2.5		98	70	130				
Dimethyl phthalate	2.49	0.33	2.5		100	70	130				
Di-n-butyl phthalate	2.48	0.33	2.5		99	70	130				
Di-n-octyl phthalate	2.61	0.33	2.5		104	80	120				
Fluoranthene	2.55	0.33	2.5		102	80	120				
Fluorene	2.48	0.33	2.5		99	70	130				
Hexachlorobenzene	2.51	0.33	2.5		100	70	130				
Hexachlorocyclopentadiene	2.49	0.33	2.5		100	70	130				
Hexachloroethane	2.44	0.33	2.5		98	70	130				
Indeno(1,2,3-cd)pyrene	2.43	0.33	2.5		97	70	130				

**Qualifiers:** ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191428**

Run ID :Run Order: <b>SV5973.I_120907A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>07-Sep-12_CCV_2</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/07/12 15:58</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Isophorone	2.43	0.33	2.5		97	70	130				
m+p-Cresols	2.52	0.33	2.5		101	70	130				
Nitrobenzene	2.37	0.33	2.5		95	70	130				
n-Nitrosodimethylamine	2.28	0.33	2.5		91	70	130				
n-Nitroso-di-n-propylamine	2.68	0.33	2.5		107	70	130				
n-Nitrosodiphenylamine	2.44	0.33	2.5		98	80	120				
o-Cresol	2.47	0.33	2.5		99	70	130				
p-Chloroaniline	2.25	0.33	2.5		90	70	130				
Phenanthrene	2.59	0.33	2.5		103	70	130				
Phenol	2.43	0.33	2.5		97	80	120				
Pyrene	2.36	0.33	2.5		94	70	130				
Pyridine	2.50	0.33	2.5		100	70	130				
Triallate	2.40	0.33	2.5		96	70	130				
Surr: 2,4,6-Tribromophenol	2.55	0.33	2.5		102	70	130				
Surr: 2-Fluorobiphenyl	2.52	0.33	2.5		101	70	130				
Surr: 2-Fluorophenol	2.40	0.33	2.5		96	70	130				
Surr: Nitrobenzene-d5	2.48	0.33	2.5		99	70	130				
Surr: Phenol-d5	2.59	0.33	2.5		104	70	130				
Surr: Terphenyl-d14	2.45	0.33	2.5		98	70	130				

Associated samples:

Run ID :Run Order: <b>SV5973.I_120907A: 3</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>07-Sep-12_CCV_3</b>			Method: <b>SW8270C</b>			
Analysis Date: <b>09/07/12 16:29</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diallate	2.51	0.33	2.5		100	70	130				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch  
BatchID: R191499

Date: 03-Oct-12

Run ID :Run Order: SV5973.I_120910A: 1		SampType: MS Tuning File			Sample ID: 10-Sep-12_TUNE_1			Method: SW8270C			
Analysis Date: 09/10/12 15:36		Units: %			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
198, Base Peak	100	0.010	100		100	100	100				
51, % of mass 198	48.6	0.010	100		48.6	30	60				
68, % of mass 69	1.52	0.010	100		152	0	1.99				
69, % Relative Abundance	51.2	0.010	100		51.2	0.01	99.99				
70, % of mass 69	0.390	0.010	100		0.39	0	1.99				
127, % of mass 198	50.7	0.010	100		50.7	40	60				
197, % of mass 198	ND	0.010	100			0	0.99				
199, % of mass 198	7.61	0.010	100		761	5	9				
275, % of mass 198	22.1	0.010	100		22.1	10	30				
365, % of mass 198	2.86	0.010	100		286	1	99.99				
441, % of mass 443	79.7	0.010	100		79.7	0.01	99.99				
442, % of mass 198	77.8	0.010	100		77.8	40	100				
443, % of mass 442	18.3	0.010	100		18.3	17	23				

Associated samples: B12082900-001A

Run ID :Run Order: SV5973.I_120910A: 2		SampType: Continuing Calibration Verification Standard			Sample ID: 10-Sep-12_CCV_2			Method: SW8270C			
Analysis Date: 09/10/12 15:59		Units: ug/L			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Triallate	78.8	10	75		105	70	130				
Surr: 2,4,6-Tribromophenol	75.8	10	75		101	70	130				
Surr: 2-Fluorobiphenyl	74.2	10	75		99	70	130				
Surr: 2-Fluorophenol	74.4	10	75		99	70	130				
Surr: Nitrobenzene-d5	76.0	10	75		101	70	130				
Surr: Phenol-d5	81.6	10	75		109	70	130				
Surr: Terphenyl-d14	75.2	10	75		100	70	130				

Associated samples:

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: 65180**

Run ID :Run Order: <b>CECD.I_120911A: 3</b>		SampType: <b>Method Blank</b>			Sample ID: <b>MB-65180</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 16:40</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/5/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	ND	0.0040									
2,4,5-TP (Silvex)	ND	0.0040									
2,4-D	ND	0.020									
2,4-DB	ND	0.050									
3,5-Dichlorobenzoic Acid	ND	0.010									
4-Nitrophenol	ND	0.010									
Acifluorfen	ND	0.010									
Bentazon	ND	0.050									
Chloramben	ND	0.010									
Dacthal	ND	0.020									
Dalapon	ND	0.050									
Dicamba	ND	0.0050									
Dichlorprop	ND	0.020									
Dinoseb	ND	0.020									
MCPA	ND	4.0									
MCPP	ND	4.0									
Pentachlorophenol	ND	0.0020									
Picloram	ND	0.010									
Surr: DCAA	0.156	0.0020	0.2		78	53	114				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120911A: 4</b>		SampType: <b>Laboratory Control Sample</b>			Sample ID: <b>LCS-65180</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 17:12</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/6/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	0.0952	0.0040	0.1		95	16	120				
2,4,5-TP (Silvex)	0.0860	0.0040	0.1		86	32	119				
2,4-D	0.0968	0.020	0.1		97	25	117				
2,4-DB	0.0926	0.050	0.1		93	10	147				
3,5-Dichlorobenzoic Acid	0.102	0.010	0.1		102	53	116				
4-Nitrophenol	0.0630	0.010	0.1		63	9	94				
Acifluorfen	0.0822	0.010	0.1		82	55	121				
Bentazon	0.0742	0.050	0.1		74	41	125				
Chloramben	0.0798	0.010	0.1		80	7	131				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

**ANALYTICAL QC SUMMARY REPORT**  
Prepared by Billings, MT Branch  
**BatchID: 65180**

**Date:** 03-Oct-12

Run ID :Run Order: <b>CECD.I_120911A: 4</b>		SampType: <b>Laboratory Control Sample</b>			Sample ID: <b>LCS-65180</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 17:12</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/6/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dacthal	0.100	0.020	0.1		100	68	127				
Dalapon	0.0632	0.050	0.1		63	32	119				
Dicamba	0.0952	0.0050	0.1		95	62	119				
Dichlorprop	0.107	0.020	0.1		107	28	134				
Dinoseb	0.0682	0.020	0.1		68	7	112				
MCPA	8.14	4.0	10		81	11	120				
MCPP	7.80	4.0	10		78	8	134				
Pentachlorophenol	0.0802	0.0020	0.1		80	52	101				
Picloram	0.0904	0.010	0.1		90	60	119				
Surr: DCAA	0.188	0.0020	0.2		94	53	114				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120911A: 7</b>		SampType: <b>Sample Duplicate</b>			Sample ID: <b>B12082900-002AMS</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 13:23</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/5/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	238	20						268	12	40	

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120911A: 8</b>		SampType: <b>Sample Duplicate</b>			Sample ID: <b>B12082900-002AMSD</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 13:56</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/5/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	382	20						268	35	40	

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120904B: 7</b>		SampType: <b>Sample Duplicate</b>			Sample ID: <b>B12082900-002AMS</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/06/12 15:55</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date: <b>9/5/2012</b>			Prep Method: <b>SW3550B</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorprop	6.52	2.0						7.7	17	40	

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



Client: AECOM  
Work Order: B12082900  
Project: CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

Date: 03-Oct-12

Prepared by Billings, MT Branch

BatchID: 65180

Run ID :Run Order: <b>CECD.I_120904B: 8</b>	SampType: <b>Sample Duplicate</b>	Sample ID: <b>B12082900-002AMSD</b>	Method: <b>SW8151A</b>								
Analysis Date: <b>09/06/12 16:27</b>	Units: <b>mg/kg</b>	Prep Info: Prep Date: <b>9/5/2012</b>	Prep Method: <b>SW3550B</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorprop	9.30	2.0						7.7	19	40	

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120914A: 5</b>	SampType: <b>Sample Matrix Spike</b>	Sample ID: <b>B12082900-002AMS</b>	Method: <b>SW8151A</b>								
Analysis Date: <b>09/14/12 15:26</b>	Units: <b>mg/kg</b>	Prep Info: Prep Date: <b>9/5/2012</b>	Prep Method: <b>SW3550B</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
3,5-Dichlorobenzoic Acid	0.106	0.10	0.1		106	53	116				
4-Nitrophenol	0.0978	0.10	0.1		98	9	94				S
Acifluorfen	0.153	0.10	0.1		153	55	121				S
Bentazon	0.0620	0.50	0.1		62	41	125				
Chloramben	0.0710	0.10	0.1		71	7	131				
Dacthal	0.134	0.20	0.1		134	68	127				S
Dicamba	0.284	0.050	0.1	0.216	68	62	119				
Dinoseb	0.330	0.20	0.1		330	7	112				S
Picloram	0.0770	0.10	0.1		77	60	119				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120914A: 6</b>	SampType: <b>Sample Matrix Spike Duplicate</b>	Sample ID: <b>B12082900-002AMSD</b>	Method: <b>SW8151A</b>								
Analysis Date: <b>09/14/12 16:32</b>	Units: <b>mg/kg</b>	Prep Info: Prep Date: <b>9/5/2012</b>	Prep Method: <b>SW3550B</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
3,5-Dichlorobenzoic Acid	0.0742	0.010	0.1		74	53	116	0.1062	35	40	
4-Nitrophenol	0.0856	0.010	0.1		86	9	94	0.0978	13	40	
Acifluorfen	0.0824	0.010	0.1		82	55	121	0.1528	60	40	R
Bentazon	0.151	0.050	0.1		151	41	125	0.062	84	40	SR
Chloramben	0.0826	0.010	0.1		83	7	131	0.071	15	40	
Dacthal	0.133	0.020	0.1		133	68	127	0.1342	0.6	40	S
Dicamba	0.330	0.010	0.1	0.216	114	62	119	0.284	15	40	
Dinoseb	0.332	0.020	0.1		332	7	112	0.33	0.6	40	S
Picloram	0.0708	0.010	0.1		71	60	119	0.077	8.4	40	

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

## ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191690**

Run ID :Run Order: <b>CECD.I_120911A: 2</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>8151CK5</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 11:09</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	0.491	0.020	0.5		98	85	115				
2,4-DB	0.442	0.050	0.5		88	85	115				
Dichlorprop	0.495	0.020	0.5		99	85	115				
Pentachlorophenol	0.502	0.0020	0.5		100	85	115				
Surr: DCAA	0.486	0.0020	0.5		97	85	115				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A**

Run ID :Run Order: <b>CECD.I_120911A: 12</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>8151CK5</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/11/12 23:47</b>		Units: <b>mg/kg</b>			Prep Info: Prep Date:			Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-D	0.547	0.020	0.5		109	85	115				
2,4-DB	0.482	0.050	0.5		96	85	115				
Dichlorprop	0.547	0.020	0.5		109	85	115				
Pentachlorophenol	0.543	0.0020	0.5		109	85	115				
Surr: DCAA	0.543	0.0020	0.5		109	85	115				

Associated samples: **B12082900-005A**

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount

**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191694**

Run ID :Run Order: <b>CECD.I_120904B: 1</b>	SampType: <b>Continuing Calibration Verification Standard</b>				Sample ID: <b>8151ck5</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/06/12 11:38</b>	Units: <b>mg/kg</b>		Prep Info:			Prep Date:		Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	0.516	0.0040	0.5		103	85	115				
2,4,5-TP (Silvex)	0.483	0.0040	0.5		97	85	115				
2,4-D	0.500	0.020	0.5		100	85	115				
2,4-DB	0.366	0.050	0.5		73	85	115				S
3,5-Dichlorobenzoic Acid	0.489	0.010	0.5		98	85	115				
4-Nitrophenol	0.493	0.010	0.5		99	85	115				
Acifluorfen	0.595	0.010	0.5		119	85	115				S
Bentazon	0.453	0.050	0.5		91	85	115				
Chloramben	0.522	0.010	0.5		104	85	115				
Dacthal	0.515	0.020	0.5		103	85	115				
Dalapon	0.509	0.050	0.5		102	85	115				
Dicamba	0.481	0.0050	0.5		96	85	115				
Dichlorprop	0.488	0.020	0.5		98	85	115				
Dinoseb	0.514	0.020	0.5		103	85	115				
MCPA	47.5	4.0	50		95	85	115				
MCPP	46.6	4.0	50		93	85	115				
Pentachlorophenol	0.502	0.0020	0.5		100	85	115				
Picloram	0.498	0.010	0.5		100	85	115				
Surr: DCAA	0.465	0.0020	0.5		93	85	115				

Associated samples: **B12082900-001A; B12082900-002A; B12082900-003A; B12082900-004A; B12082900-005A**

Run ID :Run Order: <b>CECD.I_120904B: 9</b>	SampType: <b>Continuing Calibration Verification Standard</b>				Sample ID: <b>8151ck5</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/06/12 19:12</b>	Units: <b>mg/kg</b>		Prep Info:			Prep Date:		Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-T	0.544	0.0040	0.5		109	85	115				
2,4,5-TP (Silvex)	0.504	0.0040	0.5		101	85	115				
2,4-D	0.532	0.020	0.5		106	85	115				
2,4-DB	0.411	0.050	0.5		82	85	115				S
3,5-Dichlorobenzoic Acid	0.518	0.010	0.5		104	85	115				
4-Nitrophenol	0.509	0.010	0.5		102	85	115				
Acifluorfen	0.520	0.010	0.5		104	85	115				
Bentazon	0.426	0.050	0.5		85	85	115				
Chloramben	0.554	0.010	0.5		111	85	115				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      N - Analyte concentration was not sufficiently high to calculate RPD  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      A - Analyte concentration greater than three times the spike amount



**Client:** AECOM  
**Work Order:** B12082900  
**Project:** CPS-LPI Billings

### ANALYTICAL QC SUMMARY REPORT

**Date:** 03-Oct-12

Prepared by Billings, MT Branch

**BatchID: R191694**

Run ID :Run Order: <b>CECD.I_120904B: 9</b>		SampType: <b>Continuing Calibration Verification Standard</b>			Sample ID: <b>8151ck5</b>			Method: <b>SW8151A</b>			
Analysis Date: <b>09/06/12 19:12</b>		Units: <b>mg/kg</b>			Prep Info:		Prep Date:		Prep Method:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dacthal	0.541	0.020	0.5		108	85	115				
Dalapon	0.532	0.050	0.5		106	85	115				
Dicamba	0.504	0.0050	0.5		101	85	115				
Dichlorprop	0.518	0.020	0.5		104	85	115				
Dinoseb	0.528	0.020	0.5		106	85	115				
MCPA	49.7	4.0	50		99	85	115				
MCPP	49.0	4.0	50		98	85	115				
Pentachlorophenol	0.525	0.0020	0.5		105	85	115				
Picloram	0.535	0.010	0.5		107	85	115				
Surr: DCAA	0.491	0.0020	0.5		98	85	115				

Associated samples:

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12082900

Login completed by: Leslie S. Cadreau

Date Received: 8/31/2012

Reviewed by: BL2000\jklrier

Received by: jrj

Reviewed Date: 8/31/2012

Carrier Hand Del  
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	6.0°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None



# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **AECOM**  
 Report Mail Address: **207 N. BROADWAY  
STE 315  
BILLINGS, MT 59108**  
 Invoice Address: **SAME AS ABOVE**

Project Name, PWS, Permit, Etc.: **CPS-LP1 BILLINGS**  
 Sample Origin: **MT**  
 State: **MT**

Contact Name: **Shelly Young** Phone/Fax: **406.896-4582** Email: **shelly.young@aecom.com**  
 Invoice Contact & Phone: **SAME AS ABOVE** Purchase Order: **40371** Quote/Bottle Order: **61597**

EPA/State Compliance: Yes  No   
 Sampler: (Please Print) **SHELLY YOUNG**

Special Report/Formats:  
 DW  
 POTW/MWTP  
 EDD/EDT (Electronic Data) Format: **EQALS**  
 State:  LEVEL IV  
 Other:  NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED				Standard Turaround (TAT)	Comments:	Shipped by: Cooler ID(s):	Receipt Temp
				VOL 8260	SRC 8270	HERB. 8151	SEE ATTACHED				
<del>SI A-1A</del>	<del>08/31/12</del>	<del>1018</del>	<del>S</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>STACKE TAT</del>	<del>6.0 °C</del>	
<del>SI A-2A</del>	<del>08/31/12</del>	<del>1002</del>	<del>S</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>		<del>200</del>	
<del>SI A-3A</del>	<del>08/31/12</del>	<del>1015</del>	<del>S</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>		<del>203</del>	
<del>SI A-3AD</del>	<del>08/31/12</del>	<del>1011</del>	<del>S</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>		<del>204</del>	
<del>SI A-4B</del>	<del>08/31/12</del>	<del>1008</del>	<del>S</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>	<del>XX</del>		<del>205</del>	
7											
8											
9											
10											

Number of Containers: \_\_\_\_\_  
 Air Water: \_\_\_\_\_  
 Vegetation Bioassay: \_\_\_\_\_  
 DW - Drinking Water: \_\_\_\_\_

Signature: *Shelly Young* Date/Time: **08/31/12 11:10**  
 Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by Laboratory: **SPZORNEIR 8/31/12 11:0A** Signature: \_\_\_\_\_

**Custody Record MUST be Signed**

Sample Disposal: \_\_\_\_\_ Return to Client: \_\_\_\_\_ Lab Disposal: \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly noted on your analytical report. Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.

## ANALYTICAL SUMMARY REPORT

October 09, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12092040

Project Name: CPS-LPI Billings

Energy Laboratories Inc Billings MT received the following 4 samples for AECOM on 9/25/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12092040-001	SI B-1A	09/25/12 11:09	09/25/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture prep Sonication Extraction Soil Sonication Extraction Semi-Volatile Organic Compounds, Extended List Volatile Organics, Methanol Extraction 8260-Volatile Organic Compounds- Extended List
B12092040-002	SI B-2A	09/25/12 11:00	09/25/12	Soil	Same As Above
B12092040-003	SI B-2AD	09/25/12 11:05	09/25/12	Soil	Same As Above
B12092040-004	SI B-3B	09/25/12 10:45	09/25/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-001  
**Client Sample ID** SI B-1A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:09  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.8	wt%		0.2		SW3550A	10/03/12 07:58 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/08/12 11:33 / j/rj
Acrolein	ND	mg/kg		4.0		SW8260B	10/08/12 11:33 / j/rj
Benzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Bromoform	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Chloroform	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / j/rj

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-001  
**Client Sample ID** SI B-1A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:09  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/08/12 11:33 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/08/12 11:33 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/08/12 11:33 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
1,2,4-Trimethylbenzene	0.055	mg/kg	J	0.20		SW8260B	10/08/12 11:33 / jri
1,3,5-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
o-Xylene	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/08/12 11:33 / jri
Surr: 1,2-Dichloroethane-d4	84.0	%REC		60-136		SW8260B	10/08/12 11:33 / jri
Surr: Dibromofluoromethane	88.0	%REC		70-132		SW8260B	10/08/12 11:33 / jri
Surr: p-Bromofluorobenzene	84.0	%REC		78-160		SW8260B	10/08/12 11:33 / jri
Surr: Toluene-d8	84.0	%REC		75-138		SW8260B	10/08/12 11:33 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,4-Dichlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	10/03/12 18:45 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-001  
**Client Sample ID** SI B-1A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:09  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	10/03/12 18:45 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
4-Chloro-2-methylphenol	2.7	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
4-Chlorophenol	0.19	mg/kg	J	0.33		SW8270C	10/03/12 18:45 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Diallate	0.70	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-001  
**Client Sample ID** SI B-1A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:09  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
o-Cresol	0.14	mg/kg	J	0.33		SW8270C	10/03/12 18:45 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	10/03/12 18:45 / dsm
Triallate	14	mg/kg		1.7		SW8270C	10/05/12 15:19 / dsm
Surr: 2,4,6-Tribromophenol	91.0	%REC		65-124		SW8270C	10/03/12 18:45 / dsm
Surr: 2-Fluorobiphenyl	79.0	%REC		67-102		SW8270C	10/03/12 18:45 / dsm
Surr: 2-Fluorophenol	80.0	%REC		50-108		SW8270C	10/03/12 18:45 / dsm
Surr: Nitrobenzene-d5	77.0	%REC		62-95		SW8270C	10/03/12 18:45 / dsm
Surr: Phenol-d5	83.0	%REC		56-102		SW8270C	10/03/12 18:45 / dsm
Surr: Terphenyl-d14	103	%REC		65-121		SW8270C	10/03/12 18:45 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.0040		SW8151A	10/01/12 20:05 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	10/01/12 20:05 / ldw
2,4-D	0.069	mg/kg		0.020		SW8151A	10/01/12 20:05 / ldw
2,4-DB	0.12	mg/kg		0.050		SW8151A	10/01/12 20:05 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	10/01/12 20:05 / ldw
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	10/01/12 15:09 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	10/01/12 20:05 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	10/01/12 20:05 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	10/01/12 20:05 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	10/01/12 20:05 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	10/01/12 20:05 / ldw
Dicamba	0.034	mg/kg		0.0050		SW8151A	10/01/12 20:05 / ldw
Dichlorprop	ND	mg/kg		0.20		SW8151A	10/01/12 15:09 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	10/01/12 20:05 / ldw
MCPA	ND	mg/kg		40		SW8151A	10/01/12 15:09 / ldw
MCPP	ND	mg/kg		4.0		SW8151A	10/01/12 20:38 / ldw
Pentachlorophenol	ND	mg/kg		0.0020		SW8151A	10/01/12 20:05 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	10/01/12 20:05 / ldw
Surr: DCAA	89.0	%REC		53-114		SW8151A	10/01/12 20:05 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-002  
**Client Sample ID** SI B-2A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:00  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/03/12 08:01 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	0.98	mg/kg	J	4.0		SW8260B	10/03/12 16:27 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/03/12 16:27 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-002  
**Client Sample ID** SI B-2A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:00  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/03/12 16:27 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 16:27 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 16:27 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
1,2,4-Trimethylbenzene	0.11	mg/kg	J	0.20		SW8260B	10/03/12 16:27 / jri
1,3,5-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
o-Xylene	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/03/12 16:27 / jri
Surr: 1,2-Dichloroethane-d4	89.0	%REC		60-136		SW8260B	10/03/12 16:27 / jri
Surr: Dibromofluoromethane	99.0	%REC		70-132		SW8260B	10/03/12 16:27 / jri
Surr: p-Bromofluorobenzene	91.0	%REC		78-160		SW8260B	10/03/12 16:27 / jri
Surr: Toluene-d8	101	%REC		75-138		SW8260B	10/03/12 16:27 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2,4,6-Trichlorophenol	0.12	mg/kg	J	0.33		SW8270C	10/03/12 20:18 / dsm
2,4-Dichlorophenol	8.8	mg/kg		0.84		SW8270C	10/05/12 16:52 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	10/03/12 20:18 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-002  
**Client Sample ID** SI B-2A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:00  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	10/03/12 20:18 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
4-Chloro-2-methylphenol	4.8	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
4-Chlorophenol	7.8	mg/kg		0.84		SW8270C	10/05/12 16:52 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Benzoic acid	0.42	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Diallate	0.88	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
m+p-Cresols	0.13	mg/kg	J	0.33		SW8270C	10/03/12 20:18 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-002  
**Client Sample ID** SI B-2A

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:00  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
o-Cresol	2.9	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Triallate	0.68	mg/kg		0.33		SW8270C	10/03/12 20:18 / dsm
Surr: 2,4,6-Tribromophenol	91.0	%REC		65-124		SW8270C	10/03/12 20:18 / dsm
Surr: 2-Fluorobiphenyl	86.0	%REC		67-102		SW8270C	10/03/12 20:18 / dsm
Surr: 2-Fluorophenol	89.0	%REC		50-108		SW8270C	10/03/12 20:18 / dsm
Surr: Nitrobenzene-d5	87.0	%REC		62-95		SW8270C	10/03/12 20:18 / dsm
Surr: Phenol-d5	87.0	%REC		56-102		SW8270C	10/03/12 20:18 / dsm
Surr: Terphenyl-d14	104	%REC		65-121		SW8270C	10/03/12 20:18 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.040		SW8151A	10/01/12 13:31 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.040		SW8151A	10/01/12 13:31 / ldw
2,4-D	50	mg/kg		20		SW8151A	09/27/12 14:15 / ldw
2,4-DB	0.77	mg/kg		0.50		SW8151A	10/01/12 13:31 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	10/01/12 18:26 / ldw
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	10/01/12 13:31 / ldw
Acifluorfen	ND	mg/kg		0.10		SW8151A	10/01/12 13:31 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	10/01/12 18:26 / ldw
Chloramben	ND	mg/kg		0.10		SW8151A	10/01/12 13:31 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	10/01/12 18:26 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	10/01/12 18:26 / ldw
Dicamba	1.0	mg/kg		0.50		SW8151A	09/27/12 19:10 / ldw
Dichlorprop	2.8	mg/kg		2.0		SW8151A	09/27/12 19:10 / ldw
Dinoseb	ND	mg/kg		0.20		SW8151A	10/01/12 13:31 / ldw
MCPA	ND	mg/kg		40		SW8151A	10/01/12 13:31 / ldw
MCPP	ND	mg/kg		40		SW8151A	10/01/12 13:31 / ldw
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/27/12 19:10 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	10/01/12 18:26 / ldw
Surr: DCAA	91.0	%REC		53-114		SW8151A	10/01/12 18:26 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-003  
**Client Sample ID** SI B-2AD

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:05  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/03/12 08:02 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/03/12 16:00 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/03/12 16:00 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-003  
**Client Sample ID** SI B-2AD

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:05  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/03/12 16:00 / jrj
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 16:00 / jrj
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 16:00 / jrj
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Naphthalene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Styrene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Toluene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
1,2,4-Trimethylbenzene	0.095	mg/kg	J	0.20		SW8260B	10/03/12 16:00 / jrj
1,3,5-Trimethylbenzene	0.026	mg/kg	J	0.20		SW8260B	10/03/12 16:00 / jrj
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
o-Xylene	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/03/12 16:00 / jrj
Surr: 1,2-Dichloroethane-d4	97.0	%REC		60-136		SW8260B	10/03/12 16:00 / jrj
Surr: Dibromofluoromethane	107	%REC		70-132		SW8260B	10/03/12 16:00 / jrj
Surr: p-Bromofluorobenzene	95.0	%REC		78-160		SW8260B	10/03/12 16:00 / jrj
Surr: Toluene-d8	107	%REC		75-138		SW8260B	10/03/12 16:00 / jrj
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2,4,6-Trichlorophenol	0.15	mg/kg	J	0.33		SW8270C	10/03/12 20:49 / dsm
2,4-Dichlorophenol	9.6	mg/kg		0.84		SW8270C	10/05/12 17:23 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	10/03/12 20:49 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-003  
**Client Sample ID** SI B-2AD

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:05  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	10/03/12 20:49 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
4-Chloro-2-methylphenol	5.4	mg/kg		0.84		SW8270C	10/05/12 17:23 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
4-Chlorophenol	9.0	mg/kg		0.84		SW8270C	10/05/12 17:23 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Benzoic acid	0.39	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Diallate	0.99	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
m+p-Cresols	0.078	mg/kg	J	0.33		SW8270C	10/03/12 20:49 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-003  
**Client Sample ID** SI B-2AD

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 11:05  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
o-Cresol	2.6	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Triallate	0.83	mg/kg		0.33		SW8270C	10/03/12 20:49 / dsm
Surr: 2,4,6-Tribromophenol	96.0	%REC		65-124		SW8270C	10/03/12 20:49 / dsm
Surr: 2-Fluorobiphenyl	87.0	%REC		67-102		SW8270C	10/03/12 20:49 / dsm
Surr: 2-Fluorophenol	87.0	%REC		50-108		SW8270C	10/03/12 20:49 / dsm
Surr: Nitrobenzene-d5	83.0	%REC		62-95		SW8270C	10/03/12 20:49 / dsm
Surr: Phenol-d5	73.0	%REC		56-102		SW8270C	10/03/12 20:49 / dsm
Surr: Terphenyl-d14	102	%REC		65-121		SW8270C	10/03/12 20:49 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.040		SW8151A	10/01/12 14:03 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.040		SW8151A	10/01/12 14:03 / ldw
2,4-D	49	mg/kg		20		SW8151A	09/27/12 14:48 / ldw
2,4-DB	0.81	mg/kg		0.50		SW8151A	10/01/12 14:03 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	10/01/12 18:59 / ldw
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	10/01/12 14:03 / ldw
Acifluorfen	ND	mg/kg		0.10		SW8151A	10/01/12 14:03 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	10/01/12 18:59 / ldw
Chloramben	ND	mg/kg		0.10		SW8151A	10/01/12 14:03 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	10/01/12 18:59 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	10/01/12 18:59 / ldw
Dicamba	1.1	mg/kg		0.50		SW8151A	09/27/12 19:43 / ldw
Dichlorprop	3.0	mg/kg		2.0		SW8151A	09/27/12 19:43 / ldw
Dinoseb	ND	mg/kg		0.20		SW8151A	10/01/12 14:03 / ldw
MCPA	ND	mg/kg		40		SW8151A	10/01/12 14:03 / ldw
MCPP	ND	mg/kg		40		SW8151A	10/01/12 14:03 / ldw
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	09/27/12 19:43 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	10/01/12 18:59 / ldw
Surr: DCAA	93.0	%REC		53-114		SW8151A	10/01/12 18:59 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-004  
**Client Sample ID** SI B-3B

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 10:45  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	20	wt%		0.2		SW3550A	10/03/12 08:04 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/03/12 15:34 / jrj
Acrolein	ND	mg/kg		4.0		SW8260B	10/03/12 15:34 / jrj
Benzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Bromoform	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Chloroform	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / jrj

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-004  
**Client Sample ID** SI B-3B

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 10:45  
**Date Received:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/03/12 15:34 / j/rj
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 15:34 / j/rj
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/03/12 15:34 / j/rj
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Naphthalene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Styrene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Toluene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,2,4-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
1,3,5-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
o-Xylene	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/03/12 15:34 / j/rj
Surr: 1,2-Dichloroethane-d4	88.0	%REC		60-136		SW8260B	10/03/12 15:34 / j/rj
Surr: Dibromofluoromethane	98.0	%REC		70-132		SW8260B	10/03/12 15:34 / j/rj
Surr: p-Bromofluorobenzene	88.0	%REC		78-160		SW8260B	10/03/12 15:34 / j/rj
Surr: Toluene-d8	86.0	%REC		75-138		SW8260B	10/03/12 15:34 / j/rj
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,4-Dichlorophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	10/05/12 17:54 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-004  
**Client Sample ID** SI B-3B

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 10:45  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	10/05/12 17:54 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4-Chloro-2-methylphenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4-Chlorophenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Diallate	ND	mg/kg		0.33		SW8270C	10/03/12 21:20 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings  
**Lab ID:** B12092040-004  
**Client Sample ID** SI B-3B

**Report Date:** 10/09/12  
**Collection Date:** 09/25/12 10:45  
**DateReceived:** 09/25/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
o-Cresol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Triallate	ND	mg/kg		0.33		SW8270C	10/05/12 17:54 / dsm
Surr: 2,4,6-Tribromophenol	83.0	%REC		65-124		SW8270C	10/05/12 17:54 / dsm
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	10/05/12 17:54 / dsm
Surr: 2-Fluorophenol	91.0	%REC		50-108		SW8270C	10/05/12 17:54 / dsm
Surr: Nitrobenzene-d5	83.0	%REC		62-95		SW8270C	10/05/12 17:54 / dsm
Surr: Phenol-d5	86.0	%REC		56-102		SW8270C	10/05/12 17:54 / dsm
Surr: Terphenyl-d14	115	%REC		65-121		SW8270C	10/05/12 17:54 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.0040		SW8151A	10/01/12 19:32 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	10/01/12 19:32 / ldw
2,4-D	0.29	mg/kg		0.020		SW8151A	10/01/12 19:32 / ldw
2,4-DB	ND	mg/kg		0.050		SW8151A	10/01/12 19:32 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	10/01/12 19:32 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	10/01/12 19:32 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	10/01/12 19:32 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	10/01/12 19:32 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	10/01/12 19:32 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	10/01/12 19:32 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	10/01/12 19:32 / ldw
Dicamba	0.039	mg/kg		0.0050		SW8151A	10/01/12 19:32 / ldw
Dichlorprop	ND	mg/kg		0.020		SW8151A	10/01/12 19:32 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	10/01/12 19:32 / ldw
MCPA	ND	mg/kg		4.0		SW8151A	10/01/12 19:32 / ldw
MCPP	ND	mg/kg		4.0		SW8151A	10/01/12 19:32 / ldw
Pentachlorophenol	ND	mg/kg		0.0020		SW8151A	10/01/12 19:32 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	10/01/12 19:32 / ldw
Surr: DCAA	78.0	%REC		53-114		SW8151A	10/01/12 19:32 / ldw

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b> <span style="float: right;">Batch: 65731</span>									
<b>Sample ID: MB-65731</b>	Method Blank		Run: CECD.I_120927A			09/27/12 12:37			
2,4,5-T	ND	mg/kg	0.0040						
2,4,5-TP (Silvex)	ND	mg/kg	0.0040						
2,4-D	ND	mg/kg	0.020						
2,4-DB	ND	mg/kg	0.050						
3,5-Dichlorobenzoic Acid	ND	mg/kg	0.010						
4-Nitrophenol	ND	mg/kg	0.010						
Acifluorfen	ND	mg/kg	0.010						
Bentazon	ND	mg/kg	0.050						
Chloramben	ND	mg/kg	0.010						
Dacthal	ND	mg/kg	0.020						
Dalapon	ND	mg/kg	0.050						
Dicamba	ND	mg/kg	0.0050						
Dichlorprop	ND	mg/kg	0.020						
Dinoseb	ND	mg/kg	0.020						
MCPA	ND	mg/kg	4.0						
MCPP	ND	mg/kg	4.0						
Pentachlorophenol	ND	mg/kg	0.0020						
Picloram	ND	mg/kg	0.010						
Surr: DCAA			0.0020	72	53	114			
<b>Sample ID: LCS-65731</b>	Laboratory Control Sample		Run: CECD.I_120927A			09/27/12 13:10			
2,4,5-T	0.0790	mg/kg	0.0040	79	16	120			
2,4,5-TP (Silvex)	0.0780	mg/kg	0.0040	78	32	119			
2,4-D	0.102	mg/kg	0.020	102	25	117			
2,4-DB	0.0850	mg/kg	0.050	85	10	147			
3,5-Dichlorobenzoic Acid	0.0888	mg/kg	0.010	89	53	116			
4-Nitrophenol	0.0612	mg/kg	0.010	61	9	94			
Acifluorfen	0.0872	mg/kg	0.010	87	55	121			
Bentazon	0.0930	mg/kg	0.050	93	41	125			
Chloramben	0.0460	mg/kg	0.010	46	7	131			
Dacthal	0.0980	mg/kg	0.020	98	68	127			
Dalapon	0.0614	mg/kg	0.050	61	32	119			
Dicamba	0.0846	mg/kg	0.0050	85	62	119			
Dichlorprop	0.0964	mg/kg	0.020	96	28	134			
Dinoseb	0.0518	mg/kg	0.020	52	7	112			
MCPA	7.92	mg/kg	4.0	79	11	120			
MCPP	7.00	mg/kg	4.0	70	8	134			
Pentachlorophenol	0.0740	mg/kg	0.0020	74	52	101			
Picloram	0.0836	mg/kg	0.010	84	60	119			
Surr: DCAA			0.0020	82	53	114			
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike		Run: CECD.I_121001A			10/01/12 15:42			
4-Nitrophenol	0.0902	mg/kg	0.10	90	9	94			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>									
Batch: 65731									
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike			Run: CECD.I_121001A			10/01/12 15:42		
Dichlorprop	0.118	mg/kg	0.20	118	28	134			
MCPA	8.30	mg/kg	40	83	11	120			
<b>Sample ID: B12092040-001AMSD</b>	Sample Matrix Spike Duplicate			Run: CECD.I_121001A			10/01/12 16:14		
4-Nitrophenol	0.0784	mg/kg	0.10	78	9	94			40
Dichlorprop	0.130	mg/kg	0.20	130	28	134			40
MCPA	7.80	mg/kg	40	78	11	120			40
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike			Run: CECD.I_121001A			10/01/12 20:38		
2,4,5-T	0.0792	mg/kg	0.0040	79	16	120			
2,4,5-TP (Silvex)	0.0798	mg/kg	0.0040	80	32	119			
2,4-D	0.169	mg/kg	0.020	99	25	117			
2,4-DB	0.175	mg/kg	0.050	59	10	147			
3,5-Dichlorobenzoic Acid	0.100	mg/kg	0.010	100	53	116			
Acifluorfen	0.0968	mg/kg	0.010	97	55	121			
Bentazon	0.0816	mg/kg	0.050	82	41	125			
Chloramben	0.0670	mg/kg	0.010	67	7	131			
Dacthal	0.111	mg/kg	0.020	111	68	127			
Dalapon	0.0534	mg/kg	0.050	53	32	119			
Dicamba	0.121	mg/kg	0.0050	87	62	119			
Dinoseb	0.0392	mg/kg	0.020	39	7	112			
Pentachlorophenol	0.0756	mg/kg	0.0020	76	52	101			
Picloram	0.0680	mg/kg	0.010	68	60	119			
Surr: DCAA			0.0020	86	53	114			
-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.									
<b>Sample ID: B12092040-001AMSD</b>	Sample Matrix Spike Duplicate			Run: CECD.I_121001A			10/01/12 21:11		
2,4,5-T	0.0784	mg/kg	0.0040	78	16	120	1.0		40
2,4,5-TP (Silvex)	0.0852	mg/kg	0.0040	85	32	119	6.5		40
2,4-D	0.544	mg/kg	0.020	475	25	117	110		40 SR
2,4-DB	0.163	mg/kg	0.050	46	10	147	7.3		40
3,5-Dichlorobenzoic Acid	0.105	mg/kg	0.010	105	53	116	4.7		40
Acifluorfen	0.0940	mg/kg	0.010	94	55	121	2.9		40
Bentazon	0.0774	mg/kg	0.050	77	41	125	5.3		40
Chloramben	0.0630	mg/kg	0.010	63	7	131	6.2		40
Dacthal	0.109	mg/kg	0.020	109	68	127	2.4		40
Dalapon	0.0736	mg/kg	0.050	74	32	119	32		40
Dicamba	0.117	mg/kg	0.0050	82	62	119	3.7		40
Dinoseb	0.0420	mg/kg	0.020	42	7	112	6.9		40
Pentachlorophenol	0.0746	mg/kg	0.0020	75	52	101	1.3		40
Picloram	0.0650	mg/kg	0.010	65	60	119	4.5		40
Surr: DCAA			0.0020	85	53	114			
-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.									

**Qualifiers:**

RL - Analyte reporting limit.  
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.  
S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Batch: 65731		
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike				Run: DECD.I_121001A		10/01/12 21:11		
MCPP	5.66	mg/kg	4.0	57	8	134			
<b>Sample ID: B12092040-001AMSD</b>	Sample Matrix Spike Duplicate				Run: DECD.I_121001A		10/01/12 21:44		
MCPP	5.14	mg/kg	4.0	51	8	134	9.6	40	
<b>Method: SW8151A</b>							Analytical Run: R192527		
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard						09/27/12 12:04		
2,4-D	0.487	mg/kg	0.020	97	85	115			
Dicamba	0.482	mg/kg	0.0050	96	85	115			
Dichlorprop	0.486	mg/kg	0.020	97	85	115			
Pentachlorophenol	0.480	mg/kg	0.0020	96	85	115			
Surr: DCAA			0.0020	95	85	115			
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard						09/27/12 18:04		
2,4-D	0.523	mg/kg	0.020	105	85	115			
Dicamba	0.509	mg/kg	0.0050	102	85	115			
Dichlorprop	0.525	mg/kg	0.020	105	85	115			
Pentachlorophenol	0.513	mg/kg	0.0020	103	85	115			
Surr: DCAA			0.0020	104	85	115			
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard						09/27/12 23:00		
2,4-D	0.568	mg/kg	0.020	114	85	115			
Dicamba	0.546	mg/kg	0.0050	109	85	115			
Dichlorprop	0.569	mg/kg	0.020	114	85	115			
Pentachlorophenol	0.550	mg/kg	0.0020	110	85	115			
Surr: DCAA			0.0020	113	85	115			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Analytical Run: R192825		
<b>Sample ID: 8151ck3</b>	Continuing Calibration Verification Standard							10/01/12 11:52	
2,4,5-T	0.0435	mg/kg	0.0040	87	85	115			
2,4,5-TP (Silvex)	0.0444	mg/kg	0.0040	89	85	115			
2,4-D	0.0481	mg/kg	0.020	96	85	115			
2,4-DB	0.0455	mg/kg	0.050	91	85	115			
3,5-Dichlorobenzoic Acid	0.0491	mg/kg	0.010	98	85	115			
4-Nitrophenol	0.0513	mg/kg	0.010	103	85	115			
Acifluorfen	0.0476	mg/kg	0.010	95	85	115			
Bentazon	0.0489	mg/kg	0.050	98	85	115			
Chloramben	0.0426	mg/kg	0.010	85	85	115			
Dacthal	0.0500	mg/kg	0.020	100	85	115			
Dalapon	0.0549	mg/kg	0.050	110	85	115			
Dicamba	0.0483	mg/kg	0.0050	97	85	115			
Dichlorprop	0.0473	mg/kg	0.020	95	85	115			
Dinoseb	0.0502	mg/kg	0.020	100	85	115			
MCPA	6.21	mg/kg	4.0	124	85	115			S
MCPP	5.15	mg/kg	4.0	103	85	115			
Pentachlorophenol	0.0466	mg/kg	0.0020	93	85	115			
Picloram	0.0401	mg/kg	0.010	80	85	115			S
Surr: DCAA			0.0020	96	85	115			
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard							10/01/12 17:20	
2,4,5-T	0.546	mg/kg	0.0040	109	85	115			
2,4,5-TP (Silvex)	0.531	mg/kg	0.0040	106	85	115			
2,4-D	0.549	mg/kg	0.020	110	85	115			
2,4-DB	0.436	mg/kg	0.050	87	85	115			
3,5-Dichlorobenzoic Acid	0.543	mg/kg	0.010	109	85	115			
4-Nitrophenol	0.559	mg/kg	0.010	112	85	115			
Acifluorfen	0.575	mg/kg	0.010	115	85	115			
Bentazon	0.532	mg/kg	0.050	106	85	115			
Chloramben	0.538	mg/kg	0.010	108	85	115			
Dacthal	0.563	mg/kg	0.020	113	85	115			
Dalapon	0.543	mg/kg	0.050	109	85	115			
Dicamba	0.528	mg/kg	0.0050	106	85	115			
Dichlorprop	0.541	mg/kg	0.020	108	85	115			
Dinoseb	0.553	mg/kg	0.020	111	85	115			
MCPA	51.7	mg/kg	4.0	103	85	115			
MCPP	52.0	mg/kg	4.0	104	85	115			
Pentachlorophenol	0.527	mg/kg	0.0020	105	85	115			
Picloram	0.540	mg/kg	0.010	108	85	115			
Surr: DCAA			0.0020	107	85	115			
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard							10/01/12 22:49	
2,4,5-T	0.541	mg/kg	0.0040	108	85	115			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>							Analytical Run: R192825		
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard							10/01/12 22:49	
2,4,5-TP (Silvex)	0.524	mg/kg	0.0040	105	85	115			
2,4-D	0.544	mg/kg	0.020	109	85	115			
2,4-DB	0.440	mg/kg	0.050	88	85	115			
3,5-Dichlorobenzoic Acid	0.536	mg/kg	0.010	107	85	115			
4-Nitrophenol	0.540	mg/kg	0.010	108	85	115			
Acifluorfen	0.561	mg/kg	0.010	112	85	115			
Bentazon	0.516	mg/kg	0.050	103	85	115			
Chloramben	0.535	mg/kg	0.010	107	85	115			
Dacthal	0.556	mg/kg	0.020	111	85	115			
Dalapon	0.538	mg/kg	0.050	108	85	115			
Dicamba	0.521	mg/kg	0.0050	104	85	115			
Dichlorprop	0.531	mg/kg	0.020	106	85	115			
Dinoseb	0.547	mg/kg	0.020	109	85	115			
MCPA	50.1	mg/kg	4.0	100	85	115			
MCPP	51.0	mg/kg	4.0	102	85	115			
Pentachlorophenol	0.517	mg/kg	0.0020	103	85	115			
Picloram	0.546	mg/kg	0.010	109	85	115			
Surr: DCAA			0.0020	106	85	115			
<b>Method: SW8151A</b>							Analytical Run: R192830		
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard							10/01/12 17:53	
MCPP	60.5	mg/kg	4.0	121	85	115			S
<b>Sample ID: 8151ck5</b>	Continuing Calibration Verification Standard							10/01/12 23:22	
MCPP	47.1	mg/kg	4.0	94	85	115			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 65875		
<b>Sample ID:</b> Ics-65875	Laboratory Control Sample			Run: CS5972A.I_121002A			10/02/12 14:54		
Acetone	7.83	mg/kg	4.0	78	49	145			
Acrolein	7.54	mg/kg	4.0	75	20	197			
Benzene	1.02	mg/kg	0.20	102	70	127			
Bromobenzene	1.05	mg/kg	0.20	105	70	135			
Bromochloromethane	0.912	mg/kg	0.20	91	60	130			
Bromodichloromethane	0.888	mg/kg	0.20	89	56	136			
Bromoform	0.888	mg/kg	0.20	89	59	132			
Bromomethane	0.648	mg/kg	0.20	65	18	134			
n-Butylbenzene	0.864	mg/kg	0.20	86	71	134			
sec-Butylbenzene	0.960	mg/kg	0.20	96	67	132			
tert-Butylbenzene	1.01	mg/kg	0.20	101	68	134			
Carbon disulfide	0.856	mg/kg	0.20	86	32	141			
Carbon tetrachloride	0.944	mg/kg	0.20	94	60	140			
Chlorobenzene	1.14	mg/kg	0.20	114	75	132			
Chlorodibromomethane	0.944	mg/kg	0.20	94	62	133			
Chloroethane	0.880	mg/kg	0.20	88	45	139			
Chloroform	0.888	mg/kg	0.20	89	62	132			
Chloromethane	0.920	mg/kg	0.20	92	41	138			
2-Chloroethyl vinyl ether	0.888	mg/kg	0.20	89	41	149			
1,2-Dibromo-3-chloropropane	0.630	mg/kg	0.20	63	57	123			
1,2-Dibromoethane	0.992	mg/kg	0.20	99	60	135			
2-Chlorotoluene	1.12	mg/kg	0.20	112	74	135			
Dibromomethane	0.912	mg/kg	0.20	91	60	135			
1,2-Dichlorobenzene	0.992	mg/kg	0.20	99	70	130			
4-Chlorotoluene	1.05	mg/kg	0.20	105	75	136			
1,3-Dichlorobenzene	0.992	mg/kg	0.20	99	71	132			
1,4-Dichlorobenzene	1.00	mg/kg	0.20	100	71	131			
Dichlorodifluoromethane	0.766	mg/kg	0.20	77	31	123			
1,1-Dichloroethane	0.928	mg/kg	0.20	93	66	130			
1,2-Dichloroethane	0.848	mg/kg	0.20	85	51	140			
1,1-Dichloroethene	1.00	mg/kg	0.20	100	64	133			
cis-1,2-Dichloroethene	1.01	mg/kg	0.20	101	63	131			
trans-1,2-Dichloroethene	0.968	mg/kg	0.20	97	66	133			
1,2-Dichloropropane	1.01	mg/kg	0.20	101	60	130			
1,3-Dichloropropane	0.944	mg/kg	0.20	94	59	135			
2,2-Dichloropropane	0.976	mg/kg	0.20	98	39	157			
1,1-Dichloropropene	1.09	mg/kg	0.20	109	65	132			
cis-1,3-Dichloropropene	1.04	mg/kg	0.20	104	55	134			
trans-1,3-Dichloropropene	1.01	mg/kg	0.20	101	58	146			
Ethylbenzene	1.16	mg/kg	0.20	116	74	136			
Hexachlorobutadiene	0.912	mg/kg	0.20	91	52	133			
2-Hexanone	8.16	mg/kg	4.0	82	54	129			
Isopropylbenzene	1.34	mg/kg	0.20	134	70	133			S

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 65875		
<b>Sample ID: Ics-65875</b>	Laboratory Control Sample			Run: CS5972A.I_121002A			10/02/12 14:54		
p-Isopropyltoluene	0.952	mg/kg	0.20	95	70	131			
Methyl tert-butyl ether (MTBE)	0.816	mg/kg	0.20	82	43	152			
Methyl ethyl ketone	8.40	mg/kg	4.0	84	43	148			
Methyl isobutyl ketone	8.64	mg/kg	4.0	86	54	127			
Methylene chloride	0.824	mg/kg	0.20	82	51	134			
Naphthalene	0.832	mg/kg	0.20	83	15	171			
n-Propylbenzene	1.10	mg/kg	0.20	110	72	134			
Styrene	1.10	mg/kg	0.20	110	70	135			
1,1,1,2-Tetrachloroethane	0.984	mg/kg	0.20	98	35	156			
1,1,2,2-Tetrachloroethane	0.976	mg/kg	0.20	98	59	135			
Tetrachloroethene	1.14	mg/kg	0.20	114	64	139			
Toluene	1.22	mg/kg	0.20	122	73	137			
1,2,4-Trichlorobenzene	0.776	mg/kg	0.20	78	34	150			
1,1,1-Trichloroethane	0.968	mg/kg	0.20	97	63	134			
1,1,2-Trichloroethane	0.976	mg/kg	0.20	98	56	136			
Trichloroethene	1.10	mg/kg	0.20	110	65	134			
Trichlorofluoromethane	0.880	mg/kg	0.20	88	48	140			
1,2,3-Trichloropropane	0.928	mg/kg	0.20	93	56	142			
1,2,4-Trimethylbenzene	1.02	mg/kg	0.20	102	67	125			
1,3,5-Trimethylbenzene	1.02	mg/kg	0.20	102	71	131			
Vinyl acetate	0.952	mg/kg	0.20	95	28	123			
Vinyl chloride	0.936	mg/kg	0.20	94	32	136			
m+p-Xylenes	2.37	mg/kg	0.20	118	75	136			
o-Xylene	1.14	mg/kg	0.20	114	72	134			
Surr: 1,2-Dichloroethane-d4			0.20	95	60	136			
Surr: Dibromofluoromethane			0.20	104	70	132			
Surr: p-Bromofluorobenzene			0.20	102	78	160			
Surr: Toluene-d8			0.20	108	75	138			
<b>Sample ID: mb-65875</b>	Method Blank			Run: CS5972A.I_121002A			10/02/12 15:47		
Acetone	ND	mg/kg	4.0						
Acrolein	ND	mg/kg	4.0						
Benzene	ND	mg/kg	0.20						
Bromobenzene	ND	mg/kg	0.20						
Bromochloromethane	ND	mg/kg	0.20						
Bromodichloromethane	ND	mg/kg	0.20						
Bromoform	ND	mg/kg	0.20						
Bromomethane	ND	mg/kg	0.20						
n-Butylbenzene	ND	mg/kg	0.20						
sec-Butylbenzene	ND	mg/kg	0.20						
tert-Butylbenzene	ND	mg/kg	0.20						
Carbon disulfide	ND	mg/kg	0.20						
Carbon tetrachloride	ND	mg/kg	0.20						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 65875		
<b>Sample ID: mb-65875</b>	Method Blank		Run: CS5972A.I_121002A				10/02/12 15:47		
Chlorobenzene	ND	mg/kg	0.20						
Chlorodibromomethane	ND	mg/kg	0.20						
Chloroethane	ND	mg/kg	0.20						
Chloroform	ND	mg/kg	0.20						
Chloromethane	ND	mg/kg	0.20						
2-Chloroethyl vinyl ether	ND	mg/kg	0.20						
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.20						
1,2-Dibromoethane	ND	mg/kg	0.20						
2-Chlorotoluene	ND	mg/kg	0.20						
Dibromomethane	ND	mg/kg	0.20						
1,2-Dichlorobenzene	ND	mg/kg	0.20						
4-Chlorotoluene	ND	mg/kg	0.20						
1,3-Dichlorobenzene	ND	mg/kg	0.20						
1,4-Dichlorobenzene	ND	mg/kg	0.20						
Dichlorodifluoromethane	ND	mg/kg	0.20						
1,1-Dichloroethane	ND	mg/kg	0.20						
1,2-Dichloroethane	ND	mg/kg	0.20						
1,1-Dichloroethene	ND	mg/kg	0.20						
cis-1,2-Dichloroethene	ND	mg/kg	0.20						
trans-1,2-Dichloroethene	ND	mg/kg	0.20						
1,2-Dichloropropane	ND	mg/kg	0.20						
1,3-Dichloropropane	ND	mg/kg	0.20						
2,2-Dichloropropane	ND	mg/kg	0.20						
1,1-Dichloropropene	ND	mg/kg	0.20						
cis-1,3-Dichloropropene	ND	mg/kg	0.20						
trans-1,3-Dichloropropene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Hexachlorobutadiene	ND	mg/kg	0.20						
2-Hexanone	ND	mg/kg	4.0						
Isopropylbenzene	ND	mg/kg	0.20						
p-Isopropyltoluene	ND	mg/kg	0.20						
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Methyl ethyl ketone	ND	mg/kg	4.0						
Methyl isobutyl ketone	ND	mg/kg	4.0						
Methylene chloride	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
n-Propylbenzene	ND	mg/kg	0.20						
Styrene	ND	mg/kg	0.20						
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.20						
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.20						
Tetrachloroethene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
1,2,4-Trichlorobenzene	ND	mg/kg	0.20						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b> <span style="float: right;">Batch: 65875</span>									
<b>Sample ID: mb-65875</b>	Method Blank			Run: CS5972A.I_121002A			10/02/12 15:47		
1,1,1-Trichloroethane	ND	mg/kg	0.20						
1,1,2-Trichloroethane	ND	mg/kg	0.20						
Trichloroethene	ND	mg/kg	0.20						
Trichlorofluoromethane	ND	mg/kg	0.20						
1,2,3-Trichloropropane	ND	mg/kg	0.20						
1,2,4-Trimethylbenzene	ND	mg/kg	0.20						
1,3,5-Trimethylbenzene	ND	mg/kg	0.20						
Vinyl acetate	ND	mg/kg	0.20						
Vinyl chloride	ND	mg/kg	0.20						
m+p-Xylenes	ND	mg/kg	0.20						
o-Xylene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: 1,2-Dichloroethane-d4			0.20	114	60	136			
Surr: Dibromofluoromethane			0.20	115	70	132			
Surr: p-Bromofluorobenzene			0.20	102	78	160			
Surr: Toluene-d8			0.20	112	75	138			
<b>Sample ID: b12092040-002ams</b> <span style="float: right;">Run: CS5972A.I_121002A 10/02/12 19:47</span>									
Sample Matrix Spike									
Acetone	8.48	mg/kg	4.0	75	49	145			
Acrolein	4.61	mg/kg	4.0	46	19	197			
Benzene	1.02	mg/kg	0.20	102	70	127			
Bromobenzene	0.936	mg/kg	0.20	94	70	135			
Bromochloromethane	0.912	mg/kg	0.20	91	60	130			
Bromodichloromethane	0.864	mg/kg	0.20	86	56	136			
Bromoform	0.795	mg/kg	0.20	80	59	132			
Bromomethane	0.456	mg/kg	0.20	46	18	134			
n-Butylbenzene	0.799	mg/kg	0.20	80	71	134			
sec-Butylbenzene	0.928	mg/kg	0.20	93	67	132			
tert-Butylbenzene	0.912	mg/kg	0.20	91	68	134			
Carbon disulfide	0.872	mg/kg	0.20	87	32	141			
Carbon tetrachloride	0.856	mg/kg	0.20	86	60	140			
Chlorobenzene	1.10	mg/kg	0.20	110	75	132			
Chlorodibromomethane	0.920	mg/kg	0.20	92	62	133			
Chloroethane	0.691	mg/kg	0.20	69	45	139			
Chloroform	0.864	mg/kg	0.20	86	62	132			
Chloromethane	0.936	mg/kg	0.20	94	41	138			
2-Chloroethyl vinyl ether	0.928	mg/kg	0.20	93	41	149			
1,2-Dibromo-3-chloropropane	0.712	mg/kg	0.20	71	57	123			
1,2-Dibromoethane	0.992	mg/kg	0.20	99	60	135			
2-Chlorotoluene	0.976	mg/kg	0.20	98	74	135			
Dibromomethane	0.864	mg/kg	0.20	86	60	135			
1,2-Dichlorobenzene	0.840	mg/kg	0.20	84	70	130			
4-Chlorotoluene	0.960	mg/kg	0.20	96	75	136			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 65875		
<b>Sample ID: b12092040-002ams</b>	Sample Matrix Spike			Run: CS5972A.L_121002A			10/02/12 19:47		
1,3-Dichlorobenzene	0.960	mg/kg	0.20	96	71	132			
1,4-Dichlorobenzene	0.936	mg/kg	0.20	94	71	131			
Dichlorodifluoromethane	0.611	mg/kg	0.20	61	31	123			
1,1-Dichloroethane	0.912	mg/kg	0.20	91	66	130			
1,2-Dichloroethane	0.774	mg/kg	0.20	77	51	140			
1,1-Dichloroethene	0.960	mg/kg	0.20	96	64	133			
cis-1,2-Dichloroethene	0.944	mg/kg	0.20	94	63	131			
trans-1,2-Dichloroethene	0.992	mg/kg	0.20	99	66	133			
1,2-Dichloropropane	0.960	mg/kg	0.20	96	60	130			
1,3-Dichloropropane	0.944	mg/kg	0.20	94	59	135			
2,2-Dichloropropane	0.888	mg/kg	0.20	89	39	157			
1,1-Dichloropropene	1.02	mg/kg	0.20	102	65	132			
cis-1,3-Dichloropropene	0.992	mg/kg	0.20	99	55	134			
trans-1,3-Dichloropropene	0.968	mg/kg	0.20	97	58	146			
Ethylbenzene	1.09	mg/kg	0.20	109	74	136			
Hexachlorobutadiene	0.776	mg/kg	0.20	78	52	133			
2-Hexanone	8.32	mg/kg	4.0	83	54	129			
Isopropylbenzene	1.14	mg/kg	0.20	114	70	133			
p-Isopropyltoluene	0.928	mg/kg	0.20	93	69	131			
Methyl tert-butyl ether (MTBE)	0.848	mg/kg	0.20	85	43	152			
Methyl ethyl ketone	8.64	mg/kg	4.0	86	43	148			
Methyl isobutyl ketone	8.56	mg/kg	4.0	86	54	127			
Methylene chloride	0.880	mg/kg	0.20	88	51	134			
Naphthalene	0.896	mg/kg	0.20	90	15	171			
n-Propylbenzene	0.936	mg/kg	0.20	94	72	134			
Styrene	1.08	mg/kg	0.20	108	70	135			
1,1,1,2-Tetrachloroethane	0.960	mg/kg	0.20	96	35	156			
1,1,2,2-Tetrachloroethane	1.00	mg/kg	0.20	100	59	135			
Tetrachloroethene	1.06	mg/kg	0.20	106	64	139			
Toluene	1.16	mg/kg	0.20	116	73	137			
1,2,4-Trichlorobenzene	0.711	mg/kg	0.20	71	34	150			
1,1,1-Trichloroethane	0.880	mg/kg	0.20	88	63	134			
1,1,2-Trichloroethane	0.936	mg/kg	0.20	94	56	136			
Trichloroethene	1.00	mg/kg	0.20	100	65	134			
Trichlorofluoromethane	0.788	mg/kg	0.20	79	48	140			
1,2,3-Trichloropropane	0.864	mg/kg	0.20	86	56	142			
1,2,4-Trimethylbenzene	1.11	mg/kg	0.20	100	67	125			
1,3,5-Trimethylbenzene	0.968	mg/kg	0.20	97	71	130			
Vinyl acetate	0.864	mg/kg	0.20	86	28	123			
Vinyl chloride	0.904	mg/kg	0.20	90	32	136			
m+p-Xylenes	2.30	mg/kg	0.20	115	75	136			
o-Xylene	1.10	mg/kg	0.20	110	72	134			
Surr: 1,2-Dichloroethane-d4			0.20	90	60	136			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>									
Batch: 65875									
<b>Sample ID: b12092040-002ams</b>	Sample Matrix Spike			Run: CS5972A.I_121002A			10/02/12 19:47		
Surr: Dibromofluoromethane	0.20		97	70	132				
Surr: p-Bromofluorobenzene	0.20		87	78	160				
Surr: Toluene-d8	0.20		98	75	138				
<b>Sample ID: b12092040-002amsd</b>	Sample Matrix Spike Duplicate			Run: CS5972A.I_121002A			10/02/12 20:14		
Acetone	8.80	mg/kg	4.0	78	49	145	3.7	20	
Acrolein	5.76	mg/kg	4.0	58	19	197	22	20	R
Benzene	1.06	mg/kg	0.20	106	70	127	3.8	20	
Bromobenzene	1.01	mg/kg	0.20	101	70	135	7.4	20	
Bromochloromethane	0.920	mg/kg	0.20	92	60	130	0.9	20	
Bromodichloromethane	1.00	mg/kg	0.20	100	56	136	15	20	
Bromoform	0.856	mg/kg	0.20	86	59	132	7.4	20	
Bromomethane	0.476	mg/kg	0.20	48	18	134	4.3	20	
n-Butylbenzene	0.872	mg/kg	0.20	87	71	134	8.7	20	
sec-Butylbenzene	0.992	mg/kg	0.20	99	67	132	6.7	20	
tert-Butylbenzene	1.01	mg/kg	0.20	101	68	134	10	20	
Carbon disulfide	0.888	mg/kg	0.20	89	32	141	1.8	20	
Carbon tetrachloride	0.880	mg/kg	0.20	88	60	140	2.8	20	
Chlorobenzene	1.10	mg/kg	0.20	110	75	132	0.7	20	
Chlorodibromomethane	0.976	mg/kg	0.20	98	62	133	5.9	20	
Chloroethane	0.678	mg/kg	0.20	68	45	139	2.0	20	
Chloroform	0.904	mg/kg	0.20	90	62	132	4.5	20	
Chloromethane	1.03	mg/kg	0.20	103	41	138	9.8	20	
2-Chloroethyl vinyl ether	0.936	mg/kg	0.20	94	41	149	0.9	20	
1,2-Dibromo-3-chloropropane	0.738	mg/kg	0.20	74	57	123	3.6	20	
1,2-Dibromoethane	1.02	mg/kg	0.20	102	60	135	3.2	20	
2-Chlorotoluene	1.04	mg/kg	0.20	104	74	135	6.3	20	
Dibromomethane	0.976	mg/kg	0.20	98	60	135	12	20	
1,2-Dichlorobenzene	0.904	mg/kg	0.20	90	70	130	7.3	20	
4-Chlorotoluene	1.02	mg/kg	0.20	102	75	136	5.7	20	
1,3-Dichlorobenzene	1.04	mg/kg	0.20	104	71	132	8.0	20	
1,4-Dichlorobenzene	0.984	mg/kg	0.20	98	71	131	5.0	20	
Dichlorodifluoromethane	0.618	mg/kg	0.20	62	31	123	1.0	20	
1,1-Dichloroethane	0.944	mg/kg	0.20	94	66	130	3.4	20	
1,2-Dichloroethane	0.775	mg/kg	0.20	78	51	140	0.1	20	
1,1-Dichloroethene	0.984	mg/kg	0.20	98	64	133	2.5	20	
cis-1,2-Dichloroethene	0.976	mg/kg	0.20	98	63	131	3.3	20	
trans-1,2-Dichloroethene	0.976	mg/kg	0.20	98	66	133	1.6	20	
1,2-Dichloropropane	1.02	mg/kg	0.20	102	60	130	6.5	20	
1,3-Dichloropropane	0.992	mg/kg	0.20	99	59	135	5.0	20	
2,2-Dichloropropane	0.896	mg/kg	0.20	90	39	157	0.9	20	
1,1-Dichloropropene	1.04	mg/kg	0.20	104	65	132	1.6	20	
cis-1,3-Dichloropropene	1.02	mg/kg	0.20	102	55	134	3.2	20	

**Qualifiers:**

RL - Analyte reporting limit.  
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>									
Batch: 65875									
<b>Sample ID:</b> b12092040-002amsd	Sample Matrix Spike Duplicate			Run: CS5972A.L_121002A				10/02/12 20:14	
trans-1,3-Dichloropropene	1.04	mg/kg	0.20	104	58	146	7.2	20	
Ethylbenzene	1.16	mg/kg	0.20	116	74	136	6.4	20	
Hexachlorobutadiene	1.05	mg/kg	0.20	105	52	133	30	20	R
2-Hexanone	8.88	mg/kg	4.0	89	54	129	6.5	20	
Isopropylbenzene	1.22	mg/kg	0.20	122	70	133	7.5	20	
p-Isopropyltoluene	1.01	mg/kg	0.20	101	69	131	8.3	20	
Methyl tert-butyl ether (MTBE)	0.864	mg/kg	0.20	86	43	152	1.9	20	
Methyl ethyl ketone	8.88	mg/kg	4.0	89	43	148	2.7	20	
Methyl isobutyl ketone	9.12	mg/kg	4.0	91	54	127	6.3	20	
Methylene chloride	0.920	mg/kg	0.20	92	51	134	4.4	20	
Naphthalene	1.02	mg/kg	0.20	102	15	171	13	20	
n-Propylbenzene	1.02	mg/kg	0.20	102	72	134	9.0	20	
Styrene	1.13	mg/kg	0.20	113	70	135	4.3	20	
1,1,1,2-Tetrachloroethane	1.00	mg/kg	0.20	100	35	156	4.1	20	
1,1,2,2-Tetrachloroethane	1.00	mg/kg	0.20	100	59	135	0.0	20	
Tetrachloroethene	1.12	mg/kg	0.20	112	64	139	5.1	20	
Toluene	1.20	mg/kg	0.20	120	73	137	3.4	20	
1,2,4-Trichlorobenzene	0.912	mg/kg	0.20	91	34	150	25	20	R
1,1,1-Trichloroethane	0.912	mg/kg	0.20	91	63	134	3.6	20	
1,1,2-Trichloroethane	1.00	mg/kg	0.20	100	56	136	6.6	20	
Trichloroethene	1.06	mg/kg	0.20	106	65	134	5.4	20	
Trichlorofluoromethane	0.872	mg/kg	0.20	87	48	140	10	20	
1,2,3-Trichloropropane	0.912	mg/kg	0.20	91	56	142	5.4	20	
1,2,4-Trimethylbenzene	1.17	mg/kg	0.20	106	67	125	4.9	20	
1,3,5-Trimethylbenzene	1.04	mg/kg	0.20	104	71	130	7.2	20	
Vinyl acetate	0.896	mg/kg	0.20	90	28	123	3.6	20	
Vinyl chloride	0.944	mg/kg	0.20	94	32	136	4.3	20	
m+p-Xylenes	2.34	mg/kg	0.20	117	75	136	1.7	20	
o-Xylene	1.14	mg/kg	0.20	114	72	134	3.6	20	
Surr: 1,2-Dichloroethane-d4			0.20	87	60	136			
Surr: Dibromofluoromethane			0.20	99	70	132			
Surr: p-Bromofluorobenzene			0.20	91	78	160			
Surr: Toluene-d8			0.20	100	75	138			

**Qualifiers:**

RL - Analyte reporting limit.  
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 65919		
<b>Sample ID: MB-65919</b>	Method Blank		Run: SV5973.L_121003A			10/03/12 17:12			
1-Methylnaphthalene	ND	mg/kg	0.33						
2,4,5-Trichlorophenol	ND	mg/kg	0.33						
2,4,6-Trichlorophenol	ND	mg/kg	0.33						
2,4-Dichlorophenol	ND	mg/kg	0.33						
2,4-Dimethylphenol	ND	mg/kg	0.33						
2,4-Dinitrophenol	ND	mg/kg	1.7						
2,4-Dinitrotoluene	ND	mg/kg	0.33						
2,6-Dinitrotoluene	ND	mg/kg	0.33						
2-Chloronaphthalene	ND	mg/kg	0.33						
2-Chlorophenol	ND	mg/kg	0.33						
2-Methylnaphthalene	ND	mg/kg	0.33						
2-Nitrophenol	ND	mg/kg	0.33						
3,3'-Dichlorobenzidine	ND	mg/kg	0.33						
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.7						
4-Bromophenyl phenyl ether	ND	mg/kg	0.33						
4-Chloro-2-methylphenol	ND	mg/kg	0.33						
4-Chloro-3-methylphenol	ND	mg/kg	0.33						
4-Chlorophenol	ND	mg/kg	0.33						
4-Chlorophenyl phenyl ether	ND	mg/kg	0.33						
4-Nitroaniline	ND	mg/kg	0.33						
Acenaphthene	ND	mg/kg	0.33						
Acenaphthylene	ND	mg/kg	0.33						
Anthracene	ND	mg/kg	0.33						
Azobenzene	ND	mg/kg	0.33						
Benzidine	ND	mg/kg	0.33						
Benzo(a)anthracene	ND	mg/kg	0.33						
Benzo(a)pyrene	ND	mg/kg	0.33						
Benzo(b)fluoranthene	ND	mg/kg	0.33						
Benzo(g,h,i)perylene	ND	mg/kg	0.33						
Benzo(k)fluoranthene	ND	mg/kg	0.33						
Benzoic acid	ND	mg/kg	0.33						
bis(-2-chloroethoxy)Methane	ND	mg/kg	0.33						
bis(-2-chloroethyl)Ether	ND	mg/kg	0.33						
bis(2-chloroisopropyl)Ether	ND	mg/kg	0.33						
bis(2-ethylhexyl)Phthalate	ND	mg/kg	0.33						
Butylbenzylphthalate	ND	mg/kg	0.33						
Chrysene	ND	mg/kg	0.33						
Diallate	ND	mg/kg	0.33						
Dibenzo(a,h)anthracene	ND	mg/kg	0.33						
Dibenzofuran	ND	mg/kg	0.33						
Diethyl phthalate	ND	mg/kg	0.33						
Dimethyl phthalate	ND	mg/kg	0.33						
Di-n-butyl phthalate	ND	mg/kg	0.33						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 65919									
<b>Sample ID: MB-65919</b>	Method Blank			Run: SV5973.I_121003A			10/03/12 17:12		
Di-n-octyl phthalate	ND	mg/kg	0.33						
Fluoranthene	ND	mg/kg	0.33						
Fluorene	ND	mg/kg	0.33						
Hexachlorobenzene	ND	mg/kg	0.33						
Hexachlorocyclopentadiene	ND	mg/kg	0.33						
Hexachloroethane	ND	mg/kg	0.33						
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.33						
Isophorone	ND	mg/kg	0.33						
m+p-Cresols	ND	mg/kg	0.33						
Nitrobenzene	ND	mg/kg	0.33						
n-Nitrosodimethylamine	ND	mg/kg	0.33						
n-Nitroso-di-n-propylamine	ND	mg/kg	0.33						
n-Nitrosodiphenylamine	ND	mg/kg	0.33						
o-Cresol	ND	mg/kg	0.33						
p-Chloroaniline	ND	mg/kg	0.33						
Phenanthrene	ND	mg/kg	0.33						
Phenol	ND	mg/kg	0.33						
Pyrene	ND	mg/kg	0.33						
Pyridine	ND	mg/kg	0.33						
Triallate	ND	mg/kg	0.33						
Surr: 2,4,6-Tribromophenol			0.33	86	65	124			
Surr: 2-Fluorobiphenyl			0.33	80	67	102			
Surr: 2-Fluorophenol			0.33	81	50	108			
Surr: Nitrobenzene-d5			0.33	77	62	95			
Surr: Phenol-d5			0.33	77	56	102			
Surr: Terphenyl-d14			0.33	102	65	121			
<b>Sample ID: LCS-65919</b>	Laboratory Control Sample			Run: SV5973.I_121003A			10/03/12 17:43		
1-Methylnaphthalene	2.45	mg/kg	0.33	73	56	101			
2,4,5-Trichlorophenol	2.60	mg/kg	0.33	78	36	110			
2,4,6-Trichlorophenol	3.10	mg/kg	0.33	93	67	110			
2,4-Dichlorophenol	2.85	mg/kg	0.33	86	66	96			
2,4-Dimethylphenol	2.66	mg/kg	0.33	80	60	105			
2,4-Dinitrophenol	2.40	mg/kg	1.7	72	60	106			
2,4-Dinitrotoluene	3.13	mg/kg	0.33	94	67	111			
2,6-Dinitrotoluene	3.09	mg/kg	0.33	93	69	110			
2-Chloronaphthalene	2.69	mg/kg	0.33	81	64	95			
2-Chlorophenol	2.61	mg/kg	0.33	78	64	88			
2-Methylnaphthalene	2.74	mg/kg	0.33	82	49	101			
2-Nitrophenol	2.60	mg/kg	0.33	78	58	97			
3,3'-Dichlorobenzidine	2.28	mg/kg	0.33	69	41	77			
4,6-Dinitro-2-methylphenol	3.33	mg/kg	1.7	100	59	102			
4-Bromophenyl phenyl ether	2.91	mg/kg	0.33	87	66	103			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 65919		
<b>Sample ID: LCS-65919</b>	Laboratory Control Sample			Run: SV5973.L_121003A			10/03/12 17:43		
4-Chloro-2-methylphenol	2.76	mg/kg	0.33	83	53	107			
4-Chloro-3-methylphenol	2.87	mg/kg	0.33	86	63	109			
4-Chlorophenol	2.84	mg/kg	0.33	85	52	116			
4-Chlorophenyl phenyl ether	2.69	mg/kg	0.33	81	62	107			
4-Nitroaniline	3.06	mg/kg	0.33	92	53	107			
Acenaphthene	2.52	mg/kg	0.33	76	68	95			
Acenaphthylene	2.57	mg/kg	0.33	77	69	92			
Anthracene	2.79	mg/kg	0.33	84	67	109			
Azobenzene	3.05	mg/kg	0.33	92	68	99			
Benzidine	1.03	mg/kg	0.33	31	10	104			
Benzo(a)anthracene	2.90	mg/kg	0.33	87	66	115			
Benzo(a)pyrene	2.90	mg/kg	0.33	87	60	115			
Benzo(b)fluoranthene	2.85	mg/kg	0.33	86	57	123			
Benzo(g,h,i)perylene	2.89	mg/kg	0.33	87	70	108			
Benzo(k)fluoranthene	2.95	mg/kg	0.33	89	57	110			
Benzoic acid	2.77	mg/kg	0.33	83	50	120			
bis(-2-chloroethoxy)Methane	2.86	mg/kg	0.33	86	54	99			
bis(-2-chloroethyl)Ether	3.01	mg/kg	0.33	90	52	101			
bis(2-chloroisopropyl)Ether	2.41	mg/kg	0.33	72	64	84			
bis(2-ethylhexyl)Phthalate	2.89	mg/kg	0.33	87	57	123			
Butylbenzylphthalate	3.00	mg/kg	0.33	90	69	106			
Chrysene	2.85	mg/kg	0.33	85	63	107			
Dibenzo(a,h)anthracene	2.79	mg/kg	0.33	84	65	110			
Dibenzofuran	2.75	mg/kg	0.33	83	55	99			
Diethyl phthalate	2.99	mg/kg	0.33	90	66	105			
Dimethyl phthalate	3.01	mg/kg	0.33	90	68	103			
Di-n-butyl phthalate	3.13	mg/kg	0.33	94	68	106			
Di-n-octyl phthalate	3.15	mg/kg	0.33	95	67	108			
Fluoranthene	2.95	mg/kg	0.33	88	79	110			
Fluorene	2.64	mg/kg	0.33	79	69	98			
Hexachlorobenzene	2.82	mg/kg	0.33	85	65	101			
Hexachlorocyclopentadiene	2.27	mg/kg	0.33	68	57	94			
Hexachloroethane	2.19	mg/kg	0.33	66	55	78			
Indeno(1,2,3-cd)pyrene	2.69	mg/kg	0.33	81	57	126			
Isophorone	2.78	mg/kg	0.33	84	53	104			
m+p-Cresols	2.71	mg/kg	0.33	81	54	101			
Nitrobenzene	2.61	mg/kg	0.33	78	55	94			
n-Nitrosodimethylamine	2.29	mg/kg	0.33	69	44	85			
n-Nitroso-di-n-propylamine	3.04	mg/kg	0.33	91	60	99			
n-Nitrosodiphenylamine	3.37	mg/kg	0.33	101	49	115			
o-Cresol	2.67	mg/kg	0.33	80	59	101			
p-Chloroaniline	2.41	mg/kg	0.33	72	33	99			
Phenanthrene	2.84	mg/kg	0.33	85	67	105			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 65919									
<b>Sample ID: LCS-65919</b>	Laboratory Control Sample				Run: SV5973.I_121003A			10/03/12 17:43	
Phenol	2.85	mg/kg	0.33	86	59	103			
Pyrene	2.78	mg/kg	0.33	83	70	106			
Pyridine	1.52	mg/kg	0.33	46	24	62			
Triallate	2.98	mg/kg	0.33	89	59	124			
Surr: 2,4,6-Tribromophenol			0.33	88	65	124			
Surr: 2-Fluorobiphenyl			0.33	77	67	102			
Surr: 2-Fluorophenol			0.33	80	50	108			
Surr: Nitrobenzene-d5			0.33	78	62	95			
Surr: Phenol-d5			0.33	84	56	102			
Surr: Terphenyl-d14			0.33	95	65	121			
<b>Sample ID: Ap2A-65919</b>	Laboratory Control Sample				Run: SV5973.I_121003A			10/03/12 18:14	
Diallate	3.32	mg/kg	0.33	100	10	165			
Surr: 2,4,6-Tribromophenol			0.33	98	65	124			
Surr: 2-Fluorobiphenyl			0.33	84	67	102			
Surr: 2-Fluorophenol			0.33	90	50	108			
Surr: Nitrobenzene-d5			0.33	85	62	95			
Surr: Phenol-d5			0.33	84	56	102			
Surr: Terphenyl-d14			0.33	110	65	121			
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike				Run: SV5973.I_121003A			10/03/12 19:16	
1-Methylnaphthalene	2.56	mg/kg	0.33	77	56	101			
2,4,5-Trichlorophenol	2.76	mg/kg	0.33	83	36	110			
2,4,6-Trichlorophenol	3.22	mg/kg	0.33	97	67	110			
2,4-Dichlorophenol	2.86	mg/kg	0.33	86	66	96			
2,4-Dimethylphenol	2.65	mg/kg	0.33	80	60	105			
2,4-Dinitrophenol	1.35	mg/kg	1.7	41	60	106			S
2,4-Dinitrotoluene	3.22	mg/kg	0.33	97	67	111			
2,6-Dinitrotoluene	3.11	mg/kg	0.33	93	69	110			
2-Chloronaphthalene	2.94	mg/kg	0.33	88	64	95			
2-Chlorophenol	2.56	mg/kg	0.33	77	64	88			
2-Methylnaphthalene	2.88	mg/kg	0.33	86	49	101			
2-Nitrophenol	2.52	mg/kg	0.33	76	58	97			
3,3'-Dichlorobenzidine	2.87	mg/kg	0.33	86	41	77			S
4,6-Dinitro-2-methylphenol	2.85	mg/kg	1.7	86	59	102			
4-Bromophenyl phenyl ether	2.98	mg/kg	0.33	90	66	103			
4-Chloro-2-methylphenol	6.07	mg/kg	0.33	101	53	107			
4-Chloro-3-methylphenol	3.08	mg/kg	0.33	92	63	109			
4-Chlorophenol	3.26	mg/kg	0.33	92	52	116			
4-Chlorophenyl phenyl ether	2.90	mg/kg	0.33	87	62	107			
4-Nitroaniline	3.18	mg/kg	0.33	95	53	107			
Acenaphthene	2.62	mg/kg	0.33	79	68	95			
Acenaphthylene	2.60	mg/kg	0.33	78	69	92			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 65919		
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike			Run: SV5973.L_121003A			10/03/12 19:16		
Anthracene	2.79	mg/kg	0.33	84	67	109			
Azobenzene	3.13	mg/kg	0.33	94	68	99			
Benzdine	1.84	mg/kg	0.33	55	10	104			
Benzo(a)anthracene	3.19	mg/kg	0.33	96	66	115			
Benzo(a)pyrene	3.04	mg/kg	0.33	91	60	115			
Benzo(b)fluoranthene	2.78	mg/kg	0.33	84	57	123			
Benzo(g,h,i)perylene	3.05	mg/kg	0.33	91	70	108			
Benzo(k)fluoranthene	3.01	mg/kg	0.33	90	57	110			
Benzoic acid	1.57	mg/kg	0.33	47	50	120			S
bis(-2-chloroethoxy)Methane	2.81	mg/kg	0.33	84	54	99			
bis(-2-chloroethyl)Ether	3.05	mg/kg	0.33	92	52	101			
bis(2-chloroisopropyl)Ether	2.50	mg/kg	0.33	75	64	84			
bis(2-ethylhexyl)Phthalate	3.09	mg/kg	0.33	93	57	123			
Butylbenzylphthalate	3.22	mg/kg	0.33	97	69	106			
Chrysene	2.97	mg/kg	0.33	89	63	107			
Dibenzo(a,h)anthracene	2.97	mg/kg	0.33	89	65	110			
Dibenzofuran	2.89	mg/kg	0.33	87	55	99			
Diethyl phthalate	3.14	mg/kg	0.33	94	66	105			
Dimethyl phthalate	3.05	mg/kg	0.33	92	68	103			
Di-n-butyl phthalate	3.16	mg/kg	0.33	95	68	106			
Di-n-octyl phthalate	3.31	mg/kg	0.33	99	67	108			
Fluoranthene	2.88	mg/kg	0.33	86	79	110			
Fluorene	2.70	mg/kg	0.33	81	69	98			
Hexachlorobenzene	2.80	mg/kg	0.33	84	65	101			
Hexachlorocyclopentadiene	2.33	mg/kg	0.33	70	57	94			
Hexachloroethane	2.15	mg/kg	0.33	65	55	78			
Indeno(1,2,3-cd)pyrene	2.87	mg/kg	0.33	86	57	126			
Isophorone	2.81	mg/kg	0.33	84	53	104			
m+p-Cresols	2.77	mg/kg	0.33	83	54	101			
Nitrobenzene	2.70	mg/kg	0.33	81	55	94			
n-Nitrosodimethylamine	2.47	mg/kg	0.33	74	44	85			
n-Nitroso-di-n-propylamine	3.09	mg/kg	0.33	93	60	99			
n-Nitrosodiphenylamine	3.43	mg/kg	0.33	103	49	115			
o-Cresol	2.88	mg/kg	0.33	82	59	101			
p-Chloroaniline	2.57	mg/kg	0.33	77	33	99			
Phenanthrene	2.98	mg/kg	0.33	89	67	105			
Phenol	2.94	mg/kg	0.33	88	59	103			
Pyrene	3.01	mg/kg	0.33	90	70	106			
Pyridine	1.51	mg/kg	0.33	45	24	62			
Surr: 2,4,6-Tribromophenol			0.33	95	65	124			
Surr: 2-Fluorobiphenyl			0.33	81	67	102			
Surr: 2-Fluorophenol			0.33	82	50	108			
Surr: Nitrobenzene-d5			0.33	80	62	95			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 65919									
<b>Sample ID: B12092040-001AMS</b>	Sample Matrix Spike								
Surr: Phenol-d5			0.33	84	56	102			
Surr: Terphenyl-d14			0.33	103	65	121			
<b>Sample ID: B12092040-001AMS</b>	Sample Duplicate								
Diallate	0.750	mg/kg	0.33						
Surr: 2,4,6-Tribromophenol			0.33	95	65	124			
Surr: 2-Fluorobiphenyl			0.33	81	67	102			
Surr: 2-Fluorophenol			0.33	82	50	108			
Surr: Nitrobenzene-d5			0.33	80	62	95			
Surr: Phenol-d5			0.33	84	56	102			
Surr: Terphenyl-d14			0.33	103	65	121			
<b>Sample ID: B12092040-001AMSD</b>	Sample Matrix Spike								
Run: SV5973.L_121003A									
10/03/12 19:47									
1-Methylnaphthalene	2.54	mg/kg	0.33	76	56	101			
2,4,5-Trichlorophenol	2.61	mg/kg	0.33	78	36	110			
2,4,6-Trichlorophenol	3.18	mg/kg	0.33	95	67	110			
2,4-Dichlorophenol	2.82	mg/kg	0.33	85	66	96			
2,4-Dimethylphenol	2.78	mg/kg	0.33	83	60	105			
2,4-Dinitrophenol	1.52	mg/kg	1.7	46	60	106			S
2,4-Dinitrotoluene	3.20	mg/kg	0.33	96	67	111			
2,6-Dinitrotoluene	3.19	mg/kg	0.33	96	69	110			
2-Chloronaphthalene	2.80	mg/kg	0.33	84	64	95			
2-Chlorophenol	2.71	mg/kg	0.33	81	64	88			
2-Methylnaphthalene	3.07	mg/kg	0.33	92	49	101			
2-Nitrophenol	2.61	mg/kg	0.33	78	58	97			
3,3'-Dichlorobenzidine	2.69	mg/kg	0.33	81	41	77			S
4,6-Dinitro-2-methylphenol	2.90	mg/kg	1.7	87	59	102			
4-Bromophenyl phenyl ether	2.97	mg/kg	0.33	89	66	103			
4-Chloro-2-methylphenol	6.17	mg/kg	0.33	104	53	107			
4-Chloro-3-methylphenol	3.10	mg/kg	0.33	93	63	109			
4-Chlorophenol	3.18	mg/kg	0.33	90	52	116			
4-Chlorophenyl phenyl ether	2.71	mg/kg	0.33	81	62	107			
4-Nitroaniline	3.06	mg/kg	0.33	92	53	107			
Acenaphthene	2.59	mg/kg	0.33	78	68	95			
Acenaphthylene	2.52	mg/kg	0.33	76	69	92			
Anthracene	2.73	mg/kg	0.33	82	67	109			
Azobenzene	3.00	mg/kg	0.33	90	68	99			
Benzidine	1.69	mg/kg	0.33	51	10	104			
Benzo(a)anthracene	3.22	mg/kg	0.33	97	66	115			
Benzo(a)pyrene	2.97	mg/kg	0.33	89	60	115			
Benzo(b)fluoranthene	3.02	mg/kg	0.33	91	57	123			
Benzo(g,h,i)perylene	3.00	mg/kg	0.33	90	70	108			
Benzo(k)fluoranthene	2.81	mg/kg	0.33	84	57	110			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 65919									
<b>Sample ID: B12092040-001AMSD</b>	Sample Matrix Spike			Run: SV5973.I_121003A			10/03/12 19:47		
Benzoic acid	1.49	mg/kg	0.33	45	50	120	40		S
bis(-2-chloroethoxy)Methane	2.87	mg/kg	0.33	86	54	99	40		
bis(-2-chloroethyl)Ether	3.03	mg/kg	0.33	91	52	101	40		
bis(2-chloroisopropyl)Ether	2.49	mg/kg	0.33	75	64	84	40		
bis(2-ethylhexyl)Phthalate	3.09	mg/kg	0.33	93	57	123	40		
Butylbenzylphthalate	3.23	mg/kg	0.33	97	69	106	40		
Chrysene	2.89	mg/kg	0.33	87	63	107	40		
Dibenzo(a,h)anthracene	2.94	mg/kg	0.33	88	65	110	40		
Dibenzofuran	2.84	mg/kg	0.33	85	55	99	40		
Diethyl phthalate	3.12	mg/kg	0.33	94	66	105	40		
Dimethyl phthalate	3.09	mg/kg	0.33	93	68	103	40		
Di-n-butyl phthalate	3.14	mg/kg	0.33	94	68	106	40		
Di-n-octyl phthalate	3.25	mg/kg	0.33	97	67	108	40		
Fluoranthene	2.75	mg/kg	0.33	83	79	110	40		
Fluorene	2.71	mg/kg	0.33	81	69	98	40		
Hexachlorobenzene	2.70	mg/kg	0.33	81	65	101	40		
Hexachlorocyclopentadiene	2.32	mg/kg	0.33	70	57	94	40		
Hexachloroethane	2.13	mg/kg	0.33	64	55	78	40		
Indeno(1,2,3-cd)pyrene	2.80	mg/kg	0.33	84	57	126	40		
Isophorone	2.76	mg/kg	0.33	83	53	104	40		
m+p-Cresols	2.75	mg/kg	0.33	82	54	101	40		
Nitrobenzene	2.65	mg/kg	0.33	79	55	94	40		
n-Nitrosodimethylamine	2.13	mg/kg	0.33	64	44	85	40		
n-Nitroso-di-n-propylamine	3.06	mg/kg	0.33	92	60	99	40		
n-Nitrosodiphenylamine	3.31	mg/kg	0.33	99	49	115	40		
o-Cresol	2.84	mg/kg	0.33	81	59	101	40		
p-Chloroaniline	2.64	mg/kg	0.33	79	33	99	40		
Phenanthrene	2.90	mg/kg	0.33	87	67	105	40		
Phenol	2.86	mg/kg	0.33	86	59	103	40		
Pyrene	2.81	mg/kg	0.33	84	70	106	40		
Pyridine	1.51	mg/kg	0.33	45	24	62	40		
Triallate	13.4	mg/kg	0.33	58	59	124	40		S
Surr: 2,4,6-Tribromophenol			0.33	90	65	124			
Surr: 2-Fluorobiphenyl			0.33	78	67	102			
Surr: 2-Fluorophenol			0.33	81	50	108			
Surr: Nitrobenzene-d5			0.33	80	62	95			
Surr: Phenol-d5			0.33	78	56	102			
Surr: Terphenyl-d14			0.33	96	65	121			
<b>Sample ID: B12092040-001AMSD</b>	Sample Duplicate			Run: SV5973.I_121003A			10/03/12 19:47		
Diallate	0.731	mg/kg	0.33						
Surr: 2,4,6-Tribromophenol			0.33	90	65	124			
Surr: 2-Fluorobiphenyl			0.33	78	67	102			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI Billings

**Report Date:** 10/09/12  
**Work Order:** B12092040

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
---------	--------	-------	----	------	-----------	------------	-----	----------	------

**Method:** SW8270C Batch: 65919

**Sample ID:** B12092040-001AMSD Sample Duplicate Run: SV5973.I\_121003A 10/03/12 19:47

Surr: 2-Fluorophenol			0.33	81	50	108			
Surr: Nitrobenzene-d5			0.33	80	62	95			
Surr: Phenol-d5			0.33	78	56	102			
Surr: Terphenyl-d14			0.33	96	65	121			

**Sample ID:** B12092040-001AMS Sample Duplicate Run: SV5973.I\_121005A 10/05/12 15:50

Triallate 16.1 mg/kg 1.7 11 40

- Because the sample amount was significantly higher than the spike amount for this analyte, the MS and MSD spike samples for this analyte are calculated as Duplicate samples based on the spike amount added plus the original sample concentration.

**Sample ID:** B12092040-001AMSD Sample Duplicate Run: SV5973.I\_121005A 10/05/12 16:21

Triallate 15.9 mg/kg 1.7 9.9 40

- Because the sample amount was significantly higher than the spike amount for this analyte, the MS and MSD spike samples for this analyte are calculated as Duplicate samples based on the spike amount added plus the original sample concentration.

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12092040

Login completed by: Randa Nees

Date Received: 9/25/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 9/26/2012

Carrier Hand Del  
name:

- |   |   |  |  |
|---|---|--|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Temp Blank received?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 16.2°C On Ice                           |  |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None



# ANALYTICAL SUMMARY REPORT

November 15, 2012

AECOM

207 N Broadway Ste 315  
Billings, MT 59101-1951

Workorder No.: B12102190

Quote ID: B2723 - Loveland Products 2012 Soil Remediation

Project Name: CPS-LPI-Billings

Energy Laboratories Inc Billings MT received the following 12 samples for AECOM on 10/24/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B12102190-001	SI C-1A	10/24/12 13:48	10/24/12	Soil	8151-Herbicides, Chlorinated Moisture Moisture prep Sonication Extraction Soil Sonication Extraction Semi-Volatile Organic Compounds, Extended List Volatile Organics, Methanol Extraction 8260-Volatile Organic Compounds- Extended List
B12102190-002	SI C-2A	10/24/12 13:54	10/24/12	Soil	Same As Above
B12102190-003	SI C-3A	10/24/12 13:58	10/24/12	Soil	Same As Above
B12102190-004	SI C-4A	10/24/12 14:10	10/24/12	Soil	Same As Above
B12102190-005	SI C-5A	10/24/12 14:13	10/24/12	Soil	Same As Above
B12102190-006	SI C-6A	10/24/12 14:17	10/24/12	Soil	Same As Above
B12102190-007	SI C-7A	10/24/12 14:32	10/24/12	Soil	Same As Above
B12102190-008	SI C-8A	10/24/12 14:37	10/24/12	Soil	Same As Above
B12102190-009	SI C-9A	10/24/12 14:41	10/24/12	Soil	Same As Above
B12102190-010	SI C-10B	10/24/12 14:24	10/24/12	Soil	Same As Above
B12102190-011	SI C-10BD	10/24/12 14:28	10/24/12	Soil	Same As Above
B12102190-012	SI C-11B	10/24/12 14:04	10/24/12	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

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

Report Approved By:

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-001  
**Client Sample ID** SI C-1A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:48  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.5	wt%		0.2		SW3550A	10/29/12 08:41 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 10:47 / jrj
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 10:47 / jrj
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jrj

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-001  
**Client Sample ID** SI C-1A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:48  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 10:47 / jri
Isopropylbenzene	0.028	mg/kg	J	0.20		SW8260B	10/30/12 10:47 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 10:47 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 10:47 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Naphthalene	0.083	mg/kg	J	0.20		SW8260B	10/30/12 10:47 / jri
n-Propylbenzene	0.080	mg/kg	J	0.20		SW8260B	10/30/12 10:47 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,2,4-Trimethylbenzene	0.77	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
1,3,5-Trimethylbenzene	0.35	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 10:47 / jri
o-Xylene	0.067	mg/kg	J	0.20		SW8260B	10/30/12 10:47 / jri
Xylenes, Total	0.067	mg/kg	J	0.20		SW8260B	10/30/12 10:47 / jri
Surr: 1,2-Dichloroethane-d4	91.0	%REC		60-136		SW8260B	10/30/12 10:47 / jri
Surr: Dibromofluoromethane	95.0	%REC		70-132		SW8260B	10/30/12 10:47 / jri
Surr: p-Bromofluorobenzene	101	%REC		78-160		SW8260B	10/30/12 10:47 / jri
Surr: Toluene-d8	102	%REC		75-138		SW8260B	10/30/12 10:47 / jri

### SEMI-VOLATILE ORGANIC COMPOUNDS

1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2,4,6-Trichlorophenol	0.22	mg/kg	J	0.33		SW8270C	11/02/12 19:12 / dsm
2,4-Dichlorophenol	6.2	mg/kg		0.84		SW8270C	11/06/12 16:54 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 19:12 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-001  
**Client Sample ID** SI C-1A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:48  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.088	mg/kg	J	0.33		SW8270C	11/02/12 19:12 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 19:12 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
4-Chloro-2-methylphenol	0.56	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
4-Chlorophenol	6.4	mg/kg		0.84		SW8270C	11/06/12 16:54 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Diallate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-001  
**Client Sample ID** SI C-1A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:48  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
o-Cresol	0.37	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Phenol	1.3	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Triallate	3.9	mg/kg		0.33		SW8270C	11/02/12 19:12 / dsm
Surr: 2,4,6-Tribromophenol	84.0	%REC		65-124		SW8270C	11/02/12 19:12 / dsm
Surr: 2-Fluorobiphenyl	75.0	%REC		67-102		SW8270C	11/02/12 19:12 / dsm
Surr: 2-Fluorophenol	82.0	%REC		50-108		SW8270C	11/02/12 19:12 / dsm
Surr: Nitrobenzene-d5	73.0	%REC		62-95		SW8270C	11/02/12 19:12 / dsm
Surr: Phenol-d5	80.0	%REC		56-102		SW8270C	11/02/12 19:12 / dsm
Surr: Terphenyl-d14	93.0	%REC		65-121		SW8270C	11/02/12 19:12 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.080	mg/kg		0.0040		SW8151A	11/05/12 14:52 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 10:31 / ldw
2,4-D	258	mg/kg		20		SW8151A	11/06/12 23:50 / ldw
2,4-DB	3.1	mg/kg		1.0		SW8151A	11/13/12 01:07 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 14:52 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 14:52 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 10:31 / ldw
Bentazon	ND	mg/kg		5.0		SW8151A	11/09/12 10:31 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	11/05/12 14:52 / ldw
Dacthal	ND	mg/kg		2.0		SW8151A	11/09/12 10:31 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 14:52 / ldw
Dicamba	1.3	mg/kg		0.50		SW8151A	11/09/12 10:31 / ldw
Dichlorprop	4.1	mg/kg		2.0		SW8151A	11/09/12 10:31 / ldw
Dinoseb	ND	mg/kg		2.0		SW8151A	11/09/12 10:31 / ldw
MCPA	25	mg/kg		4.0		SW8151A	11/05/12 14:52 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 10:31 / ldw
Pentachlorophenol	ND	mg/kg		2.0		SW8151A	11/06/12 23:50 / ldw
Picloram	ND	mg/kg		1.0		SW8151A	11/09/12 10:31 / ldw
Surr: DCAA	110	%REC		53-114		SW8151A	11/05/12 14:52 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-002  
**Client Sample ID** SI C-2A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:54  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/29/12 08:42 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 11:40 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 11:40 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-002  
**Client Sample ID** SI C-2A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:54  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 11:40 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 11:40 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 11:40 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
1,2,4-Trimethylbenzene	0.15	mg/kg	J	0.20		SW8260B	10/30/12 11:40 / jri
1,3,5-Trimethylbenzene	0.058	mg/kg	J	0.20		SW8260B	10/30/12 11:40 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
o-Xylene	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/30/12 11:40 / jri
Surr: 1,2-Dichloroethane-d4	111	%REC		60-136		SW8260B	10/30/12 11:40 / jri
Surr: Dibromofluoromethane	114	%REC		70-132		SW8260B	10/30/12 11:40 / jri
Surr: p-Bromofluorobenzene	122	%REC		78-160		SW8260B	10/30/12 11:40 / jri
Surr: Toluene-d8	120	%REC		75-138		SW8260B	10/30/12 11:40 / jri

### SEMI-VOLATILE ORGANIC COMPOUNDS

1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
2,4,6-Trichlorophenol	0.31	mg/kg	J	0.33		SW8270C	11/02/12 20:46 / dsm
2,4-Dichlorophenol	15	mg/kg		1.7		SW8270C	11/06/12 17:25 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 20:46 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-002  
**Client Sample ID** SI C-2A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:54  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.13	mg/kg	J	0.33		SW8270C	11/02/12 20:46 / dsm
2-Methylnaphthalene	0.067	mg/kg	J	0.33		SW8270C	11/02/12 20:46 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 20:46 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
4-Chloro-2-methylphenol	6.1	mg/kg		1.7		SW8270C	11/06/12 17:25 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
4-Chlorophenol	33	mg/kg		1.7		SW8270C	11/06/12 17:25 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Diallate	0.91	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
m+p-Cresols	0.28	mg/kg	J	0.33		SW8270C	11/02/12 20:46 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-002  
**Client Sample ID** SI C-2A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:54  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
o-Cresol	0.082	mg/kg	J	0.33		SW8270C	11/02/12 20:46 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Phenol	0.48	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 20:46 / dsm
Triallate	10	mg/kg		1.7		SW8270C	11/06/12 17:25 / dsm
Surr: 2,4,6-Tribromophenol	81.0	%REC		65-124		SW8270C	11/02/12 20:46 / dsm
Surr: 2-Fluorobiphenyl	77.0	%REC		67-102		SW8270C	11/02/12 20:46 / dsm
Surr: 2-Fluorophenol	80.0	%REC		50-108		SW8270C	11/02/12 20:46 / dsm
Surr: Nitrobenzene-d5	75.0	%REC		62-95		SW8270C	11/02/12 20:46 / dsm
Surr: Phenol-d5	80.0	%REC		56-102		SW8270C	11/02/12 20:46 / dsm
Surr: Terphenyl-d14	98.0	%REC		65-121		SW8270C	11/02/12 20:46 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.023	mg/kg		0.0040		SW8151A	11/05/12 16:34 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 11:04 / ldw
2,4-D	87	mg/kg		20		SW8151A	11/07/12 00:22 / ldw
2,4-DB	1.5	mg/kg		0.50		SW8151A	11/13/12 01:39 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 16:34 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 16:34 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 11:04 / ldw
Bentazon	ND	mg/kg		5.0		SW8151A	11/09/12 11:04 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	11/05/12 16:34 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 16:34 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 16:34 / ldw
Dicamba	0.78	mg/kg		0.50		SW8151A	11/09/12 11:04 / ldw
Dichlorprop	3.2	mg/kg		2.0		SW8151A	11/09/12 11:04 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 16:34 / ldw
MCPA	12	mg/kg		4.0		SW8151A	11/05/12 16:34 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 11:04 / ldw
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	11/09/12 11:04 / ldw
Picloram	ND	mg/kg		1.0		SW8151A	11/09/12 11:04 / ldw
Surr: DCAA	112	%REC		53-114		SW8151A	11/05/12 16:34 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.  
QCL - Quality control limit.  
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-003  
**Client Sample ID** SI C-3A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:58  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	15	wt%		0.2		SW3550A	10/29/12 08:51 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 12:34 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 12:34 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-003  
**Client Sample ID** SI C-3A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:58  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 12:34 / jri
Isopropylbenzene	0.098	mg/kg	J	0.20		SW8260B	10/30/12 12:34 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 12:34 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 12:34 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Naphthalene	0.21	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
n-Propylbenzene	0.32	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Toluene	0.11	mg/kg	J	0.20		SW8260B	10/30/12 12:34 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,2,4-Trimethylbenzene	2.9	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
1,3,5-Trimethylbenzene	1.2	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
m+p-Xylenes	0.11	mg/kg	J	0.20		SW8260B	10/30/12 12:34 / jri
o-Xylene	0.27	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Xylenes, Total	0.37	mg/kg		0.20		SW8260B	10/30/12 12:34 / jri
Surr: 1,2-Dichloroethane-d4	95.0	%REC		60-136		SW8260B	10/30/12 12:34 / jri
Surr: Dibromofluoromethane	103	%REC		70-132		SW8260B	10/30/12 12:34 / jri
Surr: p-Bromofluorobenzene	102	%REC		78-160		SW8260B	10/30/12 12:34 / jri
Surr: Toluene-d8	101	%REC		75-138		SW8260B	10/30/12 12:34 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	0.23	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
2,4,6-Trichlorophenol	0.23	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
2,4-Dichlorophenol	17	mg/kg		8.4		SW8270C	11/06/12 17:56 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 21:17 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-003  
**Client Sample ID** SI C-3A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:58  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.10	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
2-Methylnaphthalene	0.36	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 21:17 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
4-Chloro-2-methylphenol	1.2	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
4-Chloro-3-methylphenol	0.65	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
4-Chlorophenol	22	mg/kg		8.4		SW8270C	11/06/12 17:56 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
bis(2-ethylhexyl)Phthalate	0.35	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Diallate	0.24	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
m+p-Cresols	0.17	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-003  
**Client Sample ID** SI C-3A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 13:58  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
o-Cresol	0.058	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Phenol	0.29	mg/kg	J	0.33		SW8270C	11/02/12 21:17 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 21:17 / dsm
Triallate	63	mg/kg		8.4		SW8270C	11/06/12 17:56 / dsm
Surr: 2,4,6-Tribromophenol	86.0	%REC		65-124		SW8270C	11/02/12 21:17 / dsm
Surr: 2-Fluorobiphenyl	82.0	%REC		67-102		SW8270C	11/02/12 21:17 / dsm
Surr: 2-Fluorophenol	81.0	%REC		50-108		SW8270C	11/02/12 21:17 / dsm
Surr: Nitrobenzene-d5	77.0	%REC		62-95		SW8270C	11/02/12 21:17 / dsm
Surr: Phenol-d5	84.0	%REC		56-102		SW8270C	11/02/12 21:17 / dsm
Surr: Terphenyl-d14	100	%REC		65-121		SW8270C	11/02/12 21:17 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.059	mg/kg		0.0040		SW8151A	11/05/12 17:07 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 11:36 / ldw
2,4-D	216	mg/kg		20		SW8151A	11/07/12 00:55 / ldw
2,4-DB	3.8	mg/kg		1.0		SW8151A	11/13/12 02:11 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 17:07 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 17:07 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 17:07 / ldw
Bentazon	ND	mg/kg		5.0		SW8151A	11/09/12 11:36 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 11:36 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 17:07 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 17:07 / ldw
Dicamba	0.69	mg/kg		0.50		SW8151A	11/09/12 11:36 / ldw
Dichlorprop	4.5	mg/kg		2.0		SW8151A	11/09/12 11:36 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 17:07 / ldw
MCPA	26	mg/kg		4.0		SW8151A	11/05/12 17:07 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 11:36 / ldw
Pentachlorophenol	ND	mg/kg		2.0		SW8151A	11/07/12 00:55 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 17:07 / ldw
Surr: DCAA	96.0	%REC		53-114		SW8151A	11/05/12 17:07 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-004  
**Client Sample ID** SI C-4A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:10  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	11	wt%		0.2		SW3550A	10/29/12 08:54 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 13:27 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 13:27 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-004  
**Client Sample ID** SI C-4A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:10  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 13:27 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 13:27 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 13:27 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
1,2,4-Trimethylbenzene	0.13	mg/kg	J	0.20		SW8260B	10/30/12 13:27 / jri
1,3,5-Trimethylbenzene	0.047	mg/kg	J	0.20		SW8260B	10/30/12 13:27 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
o-Xylene	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/30/12 13:27 / jri
Surr: 1,2-Dichloroethane-d4	104	%REC		60-136		SW8260B	10/30/12 13:27 / jri
Surr: Dibromofluoromethane	107	%REC		70-132		SW8260B	10/30/12 13:27 / jri
Surr: p-Bromofluorobenzene	109	%REC		78-160		SW8260B	10/30/12 13:27 / jri
Surr: Toluene-d8	108	%REC		75-138		SW8260B	10/30/12 13:27 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2,4,6-Trichlorophenol	0.26	mg/kg	J	0.33		SW8270C	11/02/12 21:48 / dsm
2,4-Dichlorophenol	8.2	mg/kg		1.7		SW8270C	11/06/12 18:27 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 21:48 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-004  
**Client Sample ID** SI C-4A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:10  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.17	mg/kg	J	0.33		SW8270C	11/02/12 21:48 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 21:48 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
4-Chloro-2-methylphenol	3.3	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
4-Chlorophenol	7.1	mg/kg		1.7		SW8270C	11/06/12 18:27 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Diallate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-004  
**Client Sample ID** SI C-4A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:10  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
o-Cresol	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Phenol	0.16	mg/kg	J	0.33		SW8270C	11/02/12 21:48 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 21:48 / dsm
Triallate	12	mg/kg		1.7		SW8270C	11/06/12 18:27 / dsm
Surr: 2,4,6-Tribromophenol	96.0	%REC		65-124		SW8270C	11/02/12 21:48 / dsm
Surr: 2-Fluorobiphenyl	87.0	%REC		67-102		SW8270C	11/02/12 21:48 / dsm
Surr: 2-Fluorophenol	81.0	%REC		50-108		SW8270C	11/02/12 21:48 / dsm
Surr: Nitrobenzene-d5	79.0	%REC		62-95		SW8270C	11/02/12 21:48 / dsm
Surr: Phenol-d5	80.0	%REC		56-102		SW8270C	11/02/12 21:48 / dsm
Surr: Terphenyl-d14	105	%REC		65-121		SW8270C	11/02/12 21:48 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.064	mg/kg		0.0040		SW8151A	11/05/12 17:40 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 12:09 / ldw
2,4-D	150	mg/kg		20		SW8151A	11/07/12 01:28 / ldw
2,4-DB	4.0	mg/kg		2.5		SW8151A	11/13/12 10:37 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 17:40 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 17:40 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 12:09 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 17:40 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 12:09 / ldw
Dacthal	ND	mg/kg		2.0		SW8151A	11/09/12 12:09 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 17:40 / ldw
Dicamba	2.8	mg/kg		0.50		SW8151A	11/09/12 12:09 / ldw
Dichlorprop	5.8	mg/kg		2.0		SW8151A	11/09/12 12:09 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 17:40 / ldw
MCPA	31	mg/kg		4.0		SW8151A	11/05/12 17:40 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 12:09 / ldw
Pentachlorophenol	ND	mg/kg		0.20		SW8151A	11/09/12 12:09 / ldw
Picloram	ND	mg/kg		1.0		SW8151A	11/09/12 12:09 / ldw
Surr: DCAA	114	%REC		53-114		SW8151A	11/05/12 17:40 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-005  
**Client Sample ID** SI C-5A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:13  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.6	wt%		0.2		SW3550A	10/29/12 08:57 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 14:21 / j/rj
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 14:21 / j/rj
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
sec-Butylbenzene	0.037	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-005  
**Client Sample ID** SI C-5A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:13  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 14:21 / j/rj
Isopropylbenzene	0.075	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
p-Isopropyltoluene	0.064	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 14:21 / j/rj
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 14:21 / j/rj
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Naphthalene	0.13	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
n-Propylbenzene	0.27	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Toluene	0.044	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,2,4-Trimethylbenzene	2.1	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
1,3,5-Trimethylbenzene	0.86	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
m+p-Xylenes	0.063	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
o-Xylene	0.16	mg/kg	J	0.20		SW8260B	10/30/12 14:21 / j/rj
Xylenes, Total	0.22	mg/kg		0.20		SW8260B	10/30/12 14:21 / j/rj
Surr: 1,2-Dichloroethane-d4	101	%REC		60-136		SW8260B	10/30/12 14:21 / j/rj
Surr: Dibromofluoromethane	103	%REC		70-132		SW8260B	10/30/12 14:21 / j/rj
Surr: p-Bromofluorobenzene	104	%REC		78-160		SW8260B	10/30/12 14:21 / j/rj
Surr: Toluene-d8	104	%REC		75-138		SW8260B	10/30/12 14:21 / j/rj
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	0.27	mg/kg	J	0.33		SW8270C	11/02/12 22:19 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2,4,6-Trichlorophenol	0.26	mg/kg	J	0.33		SW8270C	11/02/12 22:19 / dsm
2,4-Dichlorophenol	14	mg/kg		8.4		SW8270C	11/06/12 18:58 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 22:19 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-005  
**Client Sample ID** SI C-5A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:13  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2-Methylnaphthalene	0.37	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 22:19 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4-Chloro-2-methylphenol	0.89	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4-Chlorophenol	4.0	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Diallate	0.21	mg/kg	J	0.33		SW8270C	11/02/12 22:19 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Di-n-octyl phthalate	0.16	mg/kg	J	0.33		SW8270C	11/02/12 22:19 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-005  
**Client Sample ID** SI C-5A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:13  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
o-Cresol	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Phenol	0.098	mg/kg	J	0.33		SW8270C	11/02/12 22:19 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 22:19 / dsm
Triallate	100	mg/kg		8.4		SW8270C	11/06/12 18:58 / dsm
Surr: 2,4,6-Tribromophenol	91.0	%REC		65-124		SW8270C	11/02/12 22:19 / dsm
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	11/02/12 22:19 / dsm
Surr: 2-Fluorophenol	84.0	%REC		50-108		SW8270C	11/02/12 22:19 / dsm
Surr: Nitrobenzene-d5	85.0	%REC		62-95		SW8270C	11/02/12 22:19 / dsm
Surr: Phenol-d5	84.0	%REC		56-102		SW8270C	11/02/12 22:19 / dsm
Surr: Terphenyl-d14	96.0	%REC		65-121		SW8270C	11/02/12 22:19 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.23	mg/kg		0.0040		SW8151A	11/05/12 18:13 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 12:42 / ldw
2,4-D	252	mg/kg		20		SW8151A	11/07/12 02:01 / ldw
2,4-DB	6.1	mg/kg		5.0		SW8151A	11/09/12 12:42 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 18:13 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 18:13 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 12:42 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 18:13 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 12:42 / ldw
Dacthal	ND	mg/kg		2.0		SW8151A	11/09/12 12:42 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 18:13 / ldw
Dicamba	2.7	mg/kg		0.50		SW8151A	11/09/12 12:42 / ldw
Dichlorprop	9.1	mg/kg		2.0		SW8151A	11/09/12 12:42 / ldw
Dinoseb	ND	mg/kg		2.0		SW8151A	11/09/12 12:42 / ldw
MCPA	40	mg/kg		4.0		SW8151A	11/05/12 18:13 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 12:42 / ldw
Pentachlorophenol	ND	mg/kg		2.0		SW8151A	11/07/12 02:01 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 18:13 / ldw
Surr: DCAA	89.0	%REC		53-114		SW8151A	11/05/12 18:13 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-006  
**Client Sample ID** SI C-6A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:17  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	13	wt%		0.2		SW3550A	10/29/12 08:59 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 15:14 / jvj
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 15:14 / jvj
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jvj

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-006  
**Client Sample ID** SI C-6A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:17  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 15:14 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 15:14 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 15:14 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
n-Propylbenzene	0.079	mg/kg	J	0.20		SW8260B	10/30/12 15:14 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,2,4-Trimethylbenzene	0.47	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
1,3,5-Trimethylbenzene	0.19	mg/kg	J	0.20		SW8260B	10/30/12 15:14 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 15:14 / jri
o-Xylene	0.046	mg/kg	J	0.20		SW8260B	10/30/12 15:14 / jri
Xylenes, Total	0.046	mg/kg	J	0.20		SW8260B	10/30/12 15:14 / jri
Surr: 1,2-Dichloroethane-d4	105	%REC		60-136		SW8260B	10/30/12 15:14 / jri
Surr: Dibromofluoromethane	107	%REC		70-132		SW8260B	10/30/12 15:14 / jri
Surr: p-Bromofluorobenzene	110	%REC		78-160		SW8260B	10/30/12 15:14 / jri
Surr: Toluene-d8	106	%REC		75-138		SW8260B	10/30/12 15:14 / jri

### SEMI-VOLATILE ORGANIC COMPOUNDS

1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2,4,6-Trichlorophenol	0.63	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2,4-Dichlorophenol	34	mg/kg		1.7		SW8270C	11/06/12 19:29 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 22:50 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-006  
**Client Sample ID** SI C-6A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:17  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.22	mg/kg	J	0.33		SW8270C	11/02/12 22:50 / dsm
2-Methylnaphthalene	0.067	mg/kg	J	0.33		SW8270C	11/02/12 22:50 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 22:50 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
4-Chloro-2-methylphenol	8.1	mg/kg		1.7		SW8270C	11/06/12 19:29 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
4-Chlorophenol	35	mg/kg		1.7		SW8270C	11/06/12 19:29 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Diallate	0.61	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
m+p-Cresols	0.16	mg/kg	J	0.33		SW8270C	11/02/12 22:50 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-006  
**Client Sample ID** SI C-6A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:17  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
o-Cresol	0.070	mg/kg	J	0.33		SW8270C	11/02/12 22:50 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Phenol	0.27	mg/kg	J	0.33		SW8270C	11/02/12 22:50 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 22:50 / dsm
Triallate	17	mg/kg		1.7		SW8270C	11/06/12 19:29 / dsm
Surr: 2,4,6-Tribromophenol	90.0	%REC		65-124		SW8270C	11/02/12 22:50 / dsm
Surr: 2-Fluorobiphenyl	83.0	%REC		67-102		SW8270C	11/02/12 22:50 / dsm
Surr: 2-Fluorophenol	79.0	%REC		50-108		SW8270C	11/02/12 22:50 / dsm
Surr: Nitrobenzene-d5	76.0	%REC		62-95		SW8270C	11/02/12 22:50 / dsm
Surr: Phenol-d5	83.0	%REC		56-102		SW8270C	11/02/12 22:50 / dsm
Surr: Terphenyl-d14	96.0	%REC		65-121		SW8270C	11/02/12 22:50 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.10	mg/kg		0.0040		SW8151A	11/05/12 18:45 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	11/05/12 18:45 / ldw
2,4-D	204	mg/kg		20		SW8151A	11/07/12 02:33 / ldw
2,4-DB	1.8	mg/kg		0.50		SW8151A	11/13/12 03:16 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		1.0		SW8151A	11/09/12 13:14 / ldw
4-Nitrophenol	ND	mg/kg		1.0		SW8151A	11/09/12 13:14 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 18:45 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 18:45 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 13:14 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 18:45 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 18:45 / ldw
Dicamba	2.9	mg/kg		0.50		SW8151A	11/09/12 13:14 / ldw
Dichlorprop	7.2	mg/kg		2.0		SW8151A	11/09/12 13:14 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 18:45 / ldw
MCPA	24	mg/kg		4.0		SW8151A	11/05/12 18:45 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 13:14 / ldw
Pentachlorophenol	ND	mg/kg		2.0		SW8151A	11/07/12 02:33 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 18:45 / ldw
Surr: DCAA	109	%REC		53-114		SW8151A	11/05/12 18:45 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-007  
**Client Sample ID** SI C-7A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:32  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	9.6	wt%		0.2		SW3550A	10/29/12 09:02 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 16:08 / jrj
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 16:08 / jrj
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-007  
**Client Sample ID** SI C-7A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:32  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 16:08 / jrj
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 16:08 / jrj
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 16:08 / jrj
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Naphthalene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
n-Propylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Toluene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,2,4-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
1,3,5-Trimethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
o-Xylene	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/30/12 16:08 / jrj
Surr: 1,2-Dichloroethane-d4	93.0	%REC		60-136		SW8260B	10/30/12 16:08 / jrj
Surr: Dibromofluoromethane	94.0	%REC		70-132		SW8260B	10/30/12 16:08 / jrj
Surr: p-Bromofluorobenzene	95.0	%REC		78-160		SW8260B	10/30/12 16:08 / jrj
Surr: Toluene-d8	92.0	%REC		75-138		SW8260B	10/30/12 16:08 / jrj

### SEMI-VOLATILE ORGANIC COMPOUNDS

1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2,4,6-Trichlorophenol	0.22	mg/kg	J	0.33		SW8270C	11/02/12 23:21 / dsm
2,4-Dichlorophenol	13	mg/kg		1.7		SW8270C	11/06/12 20:00 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 23:21 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-007  
**Client Sample ID** SI C-7A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:32  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.23	mg/kg	J	0.33		SW8270C	11/02/12 23:21 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 23:21 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
4-Chloro-2-methylphenol	15	mg/kg		1.7		SW8270C	11/06/12 20:00 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
4-Chlorophenol	29	mg/kg		1.7		SW8270C	11/06/12 20:00 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Diallate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
m+p-Cresols	0.12	mg/kg	J	0.33		SW8270C	11/02/12 23:21 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-007  
**Client Sample ID** SI C-7A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:32  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
o-Cresol	0.12	mg/kg	J	0.33		SW8270C	11/02/12 23:21 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Phenol	0.20	mg/kg	J	0.33		SW8270C	11/02/12 23:21 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 23:21 / dsm
Triallate	6.4	mg/kg		1.7		SW8270C	11/06/12 20:00 / dsm
Surr: 2,4,6-Tribromophenol	78.0	%REC		65-124		SW8270C	11/02/12 23:21 / dsm
Surr: 2-Fluorobiphenyl	71.0	%REC		67-102		SW8270C	11/02/12 23:21 / dsm
Surr: 2-Fluorophenol	73.0	%REC		50-108		SW8270C	11/02/12 23:21 / dsm
Surr: Nitrobenzene-d5	68.0	%REC		62-95		SW8270C	11/02/12 23:21 / dsm
Surr: Phenol-d5	75.0	%REC		56-102		SW8270C	11/02/12 23:21 / dsm
Surr: Terphenyl-d14	94.0	%REC		65-121		SW8270C	11/02/12 23:21 / dsm

### HERBICIDES, CHLORINATED

2,4,5-T	ND	mg/kg		0.40		SW8151A	11/09/12 13:47 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 13:47 / ldw
2,4-D	98	mg/kg		20		SW8151A	11/07/12 03:06 / ldw
2,4-DB	0.30	mg/kg		0.25		SW8151A	11/13/12 03:48 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		1.0		SW8151A	11/09/12 13:47 / ldw
4-Nitrophenol	ND	mg/kg		1.0		SW8151A	11/09/12 13:47 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 19:18 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 19:18 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 13:47 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 19:18 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 19:18 / ldw
Dicamba	3.3	mg/kg		0.50		SW8151A	11/09/12 13:47 / ldw
Dichlorprop	7.0	mg/kg		2.0		SW8151A	11/09/12 13:47 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 19:18 / ldw
MCPA	14	mg/kg		4.0		SW8151A	11/05/12 19:18 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 13:47 / ldw
Pentachlorophenol	ND	mg/kg		2.0		SW8151A	11/07/12 03:06 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 19:18 / ldw
Surr: DCAA	106	%REC	1	53-114		SW8151A	11/05/12 19:51 / ldw

-1-The surrogate recovery is reported off of the confirmation column due to an interference peak on the primary column.

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-008  
**Client Sample ID** SI C-8A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:37  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	13	wt%		0.2		SW3550A	10/29/12 09:05 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 17:01 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 17:01 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
sec-Butylbenzene	0.090	mg/kg	J	0.20		SW8260B	10/30/12 17:01 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Ethylbenzene	0.040	mg/kg	J	0.20		SW8260B	10/30/12 17:01 / jri

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-008  
**Client Sample ID** SI C-8A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:37  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 17:01 / jri
Isopropylbenzene	0.20	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 17:01 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 17:01 / jri
Methylene chloride	0.042	mg/kg	J	0.20		SW8260B	10/30/12 17:01 / jri
Naphthalene	0.48	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
n-Propylbenzene	0.70	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Toluene	0.097	mg/kg	J	0.20		SW8260B	10/30/12 17:01 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
1,2,4-Trimethylbenzene	5.4	mg/kg		0.50		SW8260B	10/31/12 18:59 / jri
1,3,5-Trimethylbenzene	2.0	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
m+p-Xylenes	0.23	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
o-Xylene	0.55	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Xylenes, Total	0.78	mg/kg		0.20		SW8260B	10/30/12 17:01 / jri
Surr: 1,2-Dichloroethane-d4	100	%REC		60-136		SW8260B	10/30/12 17:01 / jri
Surr: Dibromofluoromethane	100	%REC		70-132		SW8260B	10/30/12 17:01 / jri
Surr: p-Bromofluorobenzene	96.0	%REC		78-160		SW8260B	10/30/12 17:01 / jri
Surr: Toluene-d8	104	%REC		75-138		SW8260B	10/30/12 17:01 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	1.5	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2,4,6-Trichlorophenol	0.68	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2,4-Dichlorophenol	35	mg/kg		17		SW8270C	11/06/12 20:32 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/02/12 23:52 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-008  
**Client Sample ID** SI C-8A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:37  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.41	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2-Methylnaphthalene	2.5	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/02/12 23:52 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
4-Chloro-2-methylphenol	4.4	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
4-Chlorophenol	29	mg/kg		17		SW8270C	11/06/12 20:32 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
bis(2-ethylhexyl)Phthalate	0.75	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Diallate	0.54	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Di-n-octyl phthalate	1.4	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
m+p-Cresols	0.12	mg/kg	J	0.33		SW8270C	11/02/12 23:52 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-008  
**Client Sample ID** SI C-8A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:37  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
o-Cresol	0.22	mg/kg	J	0.33		SW8270C	11/02/12 23:52 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Phenol	1.2	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/02/12 23:52 / dsm
Triallate	221	mg/kg		17		SW8270C	11/06/12 20:32 / dsm
Surr: 2,4,6-Tribromophenol	85.0	%REC		65-124		SW8270C	11/02/12 23:52 / dsm
Surr: 2-Fluorobiphenyl	81.0	%REC		67-102		SW8270C	11/02/12 23:52 / dsm
Surr: 2-Fluorophenol	84.0	%REC		50-108		SW8270C	11/02/12 23:52 / dsm
Surr: Nitrobenzene-d5	77.0	%REC		62-95		SW8270C	11/02/12 23:52 / dsm
Surr: Phenol-d5	87.0	%REC		56-102		SW8270C	11/02/12 23:52 / dsm
Surr: Terphenyl-d14	95.0	%REC		65-121		SW8270C	11/02/12 23:52 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	0.38	mg/kg		0.0040		SW8151A	11/05/12 19:51 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 14:19 / ldw
2,4-D	1350	mg/kg		100		SW8151A	11/07/12 09:39 / ldw
2,4-DB	4.9	mg/kg		2.5		SW8151A	11/13/12 11:10 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 19:51 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 19:51 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 14:19 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 19:51 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 14:19 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 19:51 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 19:51 / ldw
Dicamba	0.80	mg/kg		0.50		SW8151A	11/09/12 14:19 / ldw
Dichlorprop	13	mg/kg		2.0		SW8151A	11/09/12 14:19 / ldw
Dinoseb	ND	mg/kg		2.0		SW8151A	11/09/12 14:19 / ldw
MCPA	ND	mg/kg		400		SW8151A	11/09/12 14:19 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 14:19 / ldw
Pentachlorophenol	ND	mg/kg		10		SW8151A	11/07/12 09:39 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 19:51 / ldw
Surr: DCAA	102	%REC		53-114		SW8151A	11/05/12 19:51 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-009  
**Client Sample ID** SI C-9A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:41  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	15	wt%		0.2		SW3550A	10/29/12 09:07 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 17:54 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 17:54 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Ethylbenzene	0.41	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-009  
**Client Sample ID** SI C-9A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:41  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 17:54 / jri
Isopropylbenzene	0.58	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 17:54 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 17:54 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Naphthalene	0.67	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
n-Propylbenzene	1.7	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Toluene	4.5	mg/kg		0.50		SW8260B	10/31/12 19:52 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
1,2,4-Trimethylbenzene	11	mg/kg		0.50		SW8260B	10/31/12 19:52 / jri
1,3,5-Trimethylbenzene	3.9	mg/kg		0.50		SW8260B	10/31/12 19:52 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
m+p-Xylenes	1.8	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
o-Xylene	2.6	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Xylenes, Total	4.5	mg/kg		0.20		SW8260B	10/30/12 17:54 / jri
Surr: 1,2-Dichloroethane-d4	88.0	%REC		60-136		SW8260B	10/30/12 17:54 / jri
Surr: Dibromofluoromethane	95.0	%REC		70-132		SW8260B	10/30/12 17:54 / jri
Surr: p-Bromofluorobenzene	93.0	%REC		78-160		SW8260B	10/30/12 17:54 / jri
Surr: Toluene-d8	90.0	%REC		75-138		SW8260B	10/30/12 17:54 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	2.2	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2,4,6-Trichlorophenol	0.69	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2,4-Dichlorophenol	29	mg/kg		17		SW8270C	11/06/12 21:03 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/03/12 00:23 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-009  
**Client Sample ID** SI C-9A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:41  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	0.11	mg/kg	J	0.33		SW8270C	11/03/12 00:23 / dsm
2-Methylnaphthalene	3.6	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/03/12 00:23 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
4-Chloro-2-methylphenol	2.4	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
4-Chlorophenol	18	mg/kg		17		SW8270C	11/06/12 21:03 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
bis(2-ethylhexyl)Phthalate	0.84	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Diallate	0.57	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Di-n-octyl phthalate	2.2	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-009  
**Client Sample ID** SI C-9A

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:41  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
o-Cresol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/03/12 00:23 / dsm
Triallate	219	mg/kg		17		SW8270C	11/06/12 21:03 / dsm
Surr: 2,4,6-Tribromophenol	81.0	%REC		65-124		SW8270C	11/03/12 00:23 / dsm
Surr: 2-Fluorobiphenyl	78.0	%REC		67-102		SW8270C	11/03/12 00:23 / dsm
Surr: 2-Fluorophenol	78.0	%REC		50-108		SW8270C	11/03/12 00:23 / dsm
Surr: Nitrobenzene-d5	76.0	%REC		62-95		SW8270C	11/03/12 00:23 / dsm
Surr: Phenol-d5	62.0	%REC		56-102		SW8270C	11/03/12 00:23 / dsm
Surr: Terphenyl-d14	87.0	%REC		65-121		SW8270C	11/03/12 00:23 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	1.2	mg/kg		0.40		SW8151A	11/09/12 15:25 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.40		SW8151A	11/09/12 15:25 / ldw
2,4-D	3740	mg/kg		200		SW8151A	11/07/12 10:11 / ldw
2,4-DB	ND	mg/kg		5.0		SW8151A	11/09/12 15:25 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 20:24 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 20:24 / ldw
Acifluorfen	ND	mg/kg		1.0		SW8151A	11/09/12 15:25 / ldw
Bentazon	ND	mg/kg		5.0		SW8151A	11/09/12 15:25 / ldw
Chloramben	ND	mg/kg		1.0		SW8151A	11/09/12 15:25 / ldw
Dacthal	ND	mg/kg		2.0		SW8151A	11/09/12 15:25 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 20:24 / ldw
Dicamba	0.63	mg/kg		0.50		SW8151A	11/09/12 15:25 / ldw
Dichlorprop	20	mg/kg		10		SW8151A	11/09/12 14:53 / ldw
Dinoseb	ND	mg/kg		2.0		SW8151A	11/09/12 15:25 / ldw
MCPA	ND	mg/kg		400		SW8151A	11/09/12 15:25 / ldw
MCPP	ND	mg/kg		400		SW8151A	11/09/12 15:25 / ldw
Pentachlorophenol	ND	mg/kg		1.0		SW8151A	11/09/12 14:53 / ldw
Picloram	ND	mg/kg		1.0		SW8151A	11/09/12 15:25 / ldw
Surr: DCAA	80.0	%REC		53-114		SW8151A	11/05/12 20:24 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-010  
**Client Sample ID** SI C-10B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:24  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	17	wt%		0.2		SW3550A	10/29/12 09:09 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/30/12 18:48 / jrj
Acrolein	ND	mg/kg		4.0		SW8260B	10/30/12 18:48 / jrj
Benzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Bromoform	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Chloroform	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jrj

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-010  
**Client Sample ID** SI C-10B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:24  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/30/12 18:48 / jri
Isopropylbenzene	0.028	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 18:48 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/30/12 18:48 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
n-Propylbenzene	0.083	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Toluene	0.026	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,2,4-Trimethylbenzene	0.50	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
1,3,5-Trimethylbenzene	0.17	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/30/12 18:48 / jri
o-Xylene	0.036	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
Xylenes, Total	0.036	mg/kg	J	0.20		SW8260B	10/30/12 18:48 / jri
Surr: 1,2-Dichloroethane-d4	89.0	%REC		60-136		SW8260B	10/30/12 18:48 / jri
Surr: Dibromofluoromethane	90.0	%REC		70-132		SW8260B	10/30/12 18:48 / jri
Surr: p-Bromofluorobenzene	94.0	%REC		78-160		SW8260B	10/30/12 18:48 / jri
Surr: Toluene-d8	90.0	%REC		75-138		SW8260B	10/30/12 18:48 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,4-Dichlorophenol	0.58	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/06/12 21:34 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-010  
**Client Sample ID** SI C-10B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:24  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/06/12 21:34 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
4-Chloro-2-methylphenol	0.35	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
4-Chlorophenol	0.32	mg/kg	J	0.33		SW8270C	11/06/12 21:34 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Diallate	0.55	mg/kg		0.33		SW8270C	11/03/12 00:54 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-010  
**Client Sample ID** SI C-10B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:24  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
o-Cresol	0.28	mg/kg	J	0.33		SW8270C	11/06/12 21:34 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Phenol	0.077	mg/kg	J	0.33		SW8270C	11/06/12 21:34 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Triallate	ND	mg/kg		0.33		SW8270C	11/06/12 21:34 / dsm
Surr: 2,4,6-Tribromophenol	99.0	%REC		65-124		SW8270C	11/06/12 21:34 / dsm
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	11/06/12 21:34 / dsm
Surr: 2-Fluorophenol	89.0	%REC		50-108		SW8270C	11/06/12 21:34 / dsm
Surr: Nitrobenzene-d5	89.0	%REC		62-95		SW8270C	11/06/12 21:34 / dsm
Surr: Phenol-d5	84.0	%REC		56-102		SW8270C	11/06/12 21:34 / dsm
Surr: Terphenyl-d14	121	%REC		65-121		SW8270C	11/06/12 21:34 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.0040		SW8151A	11/05/12 22:35 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	11/05/12 22:35 / ldw
2,4-D	1.9	mg/kg		0.20		SW8151A	11/07/12 06:55 / ldw
2,4-DB	ND	mg/kg		0.050		SW8151A	11/05/12 22:35 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 22:35 / ldw
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	11/07/12 06:55 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 22:35 / ldw
Bentazon	ND	mg/kg		0.50		SW8151A	11/07/12 06:55 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	11/05/12 22:35 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 22:35 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 22:35 / ldw
Dicamba	0.12	mg/kg		0.050		SW8151A	11/07/12 06:55 / ldw
Dichlorprop	0.50	mg/kg		0.20		SW8151A	11/07/12 06:55 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 22:35 / ldw
MCPA	ND	mg/kg		4.0		SW8151A	11/05/12 22:35 / ldw
MCPP	ND	mg/kg		40		SW8151A	11/07/12 06:55 / ldw
Pentachlorophenol	ND	mg/kg		0.020		SW8151A	11/07/12 06:55 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 22:35 / ldw
Surr: DCAA	86.0	%REC		53-114		SW8151A	11/05/12 22:35 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-011  
**Client Sample ID** SI C-10BD

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:28  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	16	wt%		0.2		SW3550A	10/29/12 09:12 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/31/12 10:32 / jvj
Acrolein	ND	mg/kg		4.0		SW8260B	10/31/12 10:32 / jvj
Benzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Bromoform	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Bromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Chloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Chloroform	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Chloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jvj

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-011  
**Client Sample ID** SI C-10BD

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:28  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/31/12 10:32 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/31/12 10:32 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/31/12 10:32 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
n-Propylbenzene	0.061	mg/kg	J	0.20		SW8260B	10/31/12 10:32 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,2,4-Trimethylbenzene	0.39	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
1,3,5-Trimethylbenzene	0.13	mg/kg	J	0.20		SW8260B	10/31/12 10:32 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/31/12 10:32 / jri
o-Xylene	0.028	mg/kg	J	0.20		SW8260B	10/31/12 10:32 / jri
Xylenes, Total	0.028	mg/kg	J	0.20		SW8260B	10/31/12 10:32 / jri
Surr: 1,2-Dichloroethane-d4	90.0	%REC		60-136		SW8260B	10/31/12 10:32 / jri
Surr: Dibromofluoromethane	89.0	%REC		70-132		SW8260B	10/31/12 10:32 / jri
Surr: p-Bromofluorobenzene	89.0	%REC		78-160		SW8260B	10/31/12 10:32 / jri
Surr: Toluene-d8	86.0	%REC		75-138		SW8260B	10/31/12 10:32 / jri

### SEMI-VOLATILE ORGANIC COMPOUNDS

1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,4-Dichlorophenol	0.33	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/06/12 22:05 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-011  
**Client Sample ID** SI C-10BD

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:28  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/06/12 22:05 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
4-Chloro-2-methylphenol	0.29	mg/kg	J	0.33		SW8270C	11/06/12 22:05 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
4-Chlorophenol	0.28	mg/kg	J	0.33		SW8270C	11/06/12 22:05 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
bis(2-ethylhexyl)Phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Diallate	0.44	mg/kg		0.33		SW8270C	11/03/12 01:25 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-011  
**Client Sample ID** SI C-10BD

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:28  
**DateReceived:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
o-Cresol	0.41	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Phenol	0.065	mg/kg	J	0.33		SW8270C	11/06/12 22:05 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Triallate	ND	mg/kg		0.33		SW8270C	11/06/12 22:05 / dsm
Surr: 2,4,6-Tribromophenol	94.0	%REC		65-124		SW8270C	11/06/12 22:05 / dsm
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	11/06/12 22:05 / dsm
Surr: 2-Fluorophenol	93.0	%REC		50-108		SW8270C	11/06/12 22:05 / dsm
Surr: Nitrobenzene-d5	83.0	%REC		62-95		SW8270C	11/06/12 22:05 / dsm
Surr: Phenol-d5	80.0	%REC		56-102		SW8270C	11/06/12 22:05 / dsm
Surr: Terphenyl-d14	113	%REC		65-121		SW8270C	11/06/12 22:05 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.0040		SW8151A	11/05/12 23:08 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	11/05/12 23:08 / ldw
2,4-D	1.6	mg/kg		0.20		SW8151A	11/07/12 07:28 / ldw
2,4-DB	ND	mg/kg		0.050		SW8151A	11/05/12 23:08 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 23:08 / ldw
4-Nitrophenol	ND	mg/kg		0.10		SW8151A	11/07/12 07:28 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 23:08 / ldw
Bentazon	ND	mg/kg		0.50		SW8151A	11/07/12 07:28 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	11/05/12 23:08 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 23:08 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 23:08 / ldw
Dicamba	0.13	mg/kg		0.050		SW8151A	11/07/12 07:28 / ldw
Dichlorprop	0.58	mg/kg		0.20		SW8151A	11/07/12 07:28 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 23:08 / ldw
MCPA	ND	mg/kg		4.0		SW8151A	11/05/12 23:08 / ldw
MCPP	ND	mg/kg		40		SW8151A	11/07/12 07:28 / ldw
Pentachlorophenol	ND	mg/kg		0.020		SW8151A	11/07/12 07:28 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 23:08 / ldw
Surr: DCAA	84.0	%REC		53-114		SW8151A	11/05/12 23:08 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:**

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-012  
**Client Sample ID** SI C-11B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:04  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	17	wt%		0.2		SW3550A	10/29/12 09:14 / amn
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	mg/kg		4.0		SW8260B	10/31/12 11:25 / jri
Acrolein	ND	mg/kg		4.0		SW8260B	10/31/12 11:25 / jri
Benzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Bromobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Bromochloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Bromodichloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Bromoform	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Bromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
n-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
sec-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
tert-Butylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Carbon disulfide	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Carbon tetrachloride	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Chlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Chlorodibromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Chloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
2-Chloroethyl vinyl ether	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Chloroform	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Chloromethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
2-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
4-Chlorotoluene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2-Dibromo-3-chloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2-Dibromoethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Dibromomethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,3-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,4-Dichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Dichlorodifluoromethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2-Dichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
cis-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
trans-1,2-Dichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,3-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
2,2-Dichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
cis-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
trans-1,3-Dichloropropene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Ethylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-012  
**Client Sample ID** SI C-11B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:04  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Hexachlorobutadiene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
2-Hexanone	ND	mg/kg		4.0		SW8260B	10/31/12 11:25 / jri
Isopropylbenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
p-Isopropyltoluene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Methyl ethyl ketone	ND	mg/kg		4.0		SW8260B	10/31/12 11:25 / jri
Methyl isobutyl ketone	ND	mg/kg		4.0		SW8260B	10/31/12 11:25 / jri
Methylene chloride	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Naphthalene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
n-Propylbenzene	0.053	mg/kg	J	0.20		SW8260B	10/31/12 11:25 / jri
Styrene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1,1,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1,2,2-Tetrachloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Tetrachloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Toluene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2,4-Trichlorobenzene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1,1-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,1,2-Trichloroethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Trichloroethene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Trichlorofluoromethane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2,3-Trichloropropane	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,2,4-Trimethylbenzene	0.36	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
1,3,5-Trimethylbenzene	0.092	mg/kg	J	0.20		SW8260B	10/31/12 11:25 / jri
Vinyl acetate	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Vinyl chloride	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
m+p-Xylenes	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
o-Xylene	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Xylenes, Total	ND	mg/kg		0.20		SW8260B	10/31/12 11:25 / jri
Surr: 1,2-Dichloroethane-d4	89.0	%REC		60-136		SW8260B	10/31/12 11:25 / jri
Surr: Dibromofluoromethane	92.0	%REC		70-132		SW8260B	10/31/12 11:25 / jri
Surr: p-Bromofluorobenzene	95.0	%REC		78-160		SW8260B	10/31/12 11:25 / jri
Surr: Toluene-d8	88.0	%REC		75-138		SW8260B	10/31/12 11:25 / jri
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
1-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,4,5-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,4,6-Trichlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,4-Dichlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,4-Dimethylphenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,4-Dinitrophenol	ND	mg/kg		1.7		SW8270C	11/03/12 01:57 / dsm
2,4-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2,6-Dinitrotoluene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2-Chloronaphthalene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-012  
**Client Sample ID** SI C-11B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:04  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
2-Chlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2-Methylnaphthalene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
2-Nitrophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
3,3'-Dichlorobenzidine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4,6-Dinitro-2-methylphenol	ND	mg/kg		1.7		SW8270C	11/03/12 01:57 / dsm
4-Bromophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4-Chloro-2-methylphenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4-Chloro-3-methylphenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4-Chlorophenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4-Chlorophenyl phenyl ether	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
4-Nitroaniline	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Acenaphthene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Acenaphthylene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Azobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzidine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzo(a)anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzo(a)pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzo(b)fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzo(g,h,i)perylene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzo(k)fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Benzoic acid	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
bis(-2-chloroethoxy)Methane	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
bis(-2-chloroethyl)Ether	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
bis(2-chloroisopropyl)Ether	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
bis(2-ethylhexyl)Phthalate	0.65	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Butylbenzylphthalate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Chrysene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Diallate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Dibenzo(a,h)anthracene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Dibenzofuran	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Diethyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Dimethyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Di-n-butyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Di-n-octyl phthalate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Fluoranthene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Fluorene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Hexachlorobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Hexachlorocyclopentadiene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Hexachloroethane	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Isophorone	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
m+p-Cresols	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings  
**Lab ID:** B12102190-012  
**Client Sample ID** SI C-11B

**Report Date:** 11/15/12  
**Collection Date:** 10/24/12 14:04  
**Date Received:** 10/24/12  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
Nitrobenzene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
n-Nitrosodimethylamine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
n-Nitroso-di-n-propylamine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
n-Nitrosodiphenylamine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
o-Cresol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
p-Chloroaniline	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Phenanthrene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Phenol	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Pyrene	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Pyridine	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Triallate	ND	mg/kg		0.33		SW8270C	11/03/12 01:57 / dsm
Surr: 2,4,6-Tribromophenol	91.0	%REC		65-124		SW8270C	11/03/12 01:57 / dsm
Surr: 2-Fluorobiphenyl	85.0	%REC		67-102		SW8270C	11/03/12 01:57 / dsm
Surr: 2-Fluorophenol	88.0	%REC		50-108		SW8270C	11/03/12 01:57 / dsm
Surr: Nitrobenzene-d5	75.0	%REC		62-95		SW8270C	11/03/12 01:57 / dsm
Surr: Phenol-d5	86.0	%REC		56-102		SW8270C	11/03/12 01:57 / dsm
Surr: Terphenyl-d14	103	%REC		65-121		SW8270C	11/03/12 01:57 / dsm
<b>HERBICIDES, CHLORINATED</b>							
2,4,5-T	ND	mg/kg		0.0040		SW8151A	11/05/12 23:41 / ldw
2,4,5-TP (Silvex)	ND	mg/kg		0.0040		SW8151A	11/05/12 23:41 / ldw
2,4-D	0.54	mg/kg		0.20		SW8151A	11/07/12 08:00 / ldw
2,4-DB	ND	mg/kg		0.050		SW8151A	11/05/12 23:41 / ldw
3,5-Dichlorobenzoic Acid	ND	mg/kg		0.010		SW8151A	11/05/12 23:41 / ldw
4-Nitrophenol	ND	mg/kg		0.010		SW8151A	11/05/12 23:41 / ldw
Acifluorfen	ND	mg/kg		0.010		SW8151A	11/05/12 23:41 / ldw
Bentazon	ND	mg/kg		0.050		SW8151A	11/05/12 23:41 / ldw
Chloramben	ND	mg/kg		0.010		SW8151A	11/05/12 23:41 / ldw
Dacthal	ND	mg/kg		0.020		SW8151A	11/05/12 23:41 / ldw
Dalapon	ND	mg/kg		0.050		SW8151A	11/05/12 23:41 / ldw
Dicamba	0.037	mg/kg		0.0050		SW8151A	11/05/12 23:41 / ldw
Dichlorprop	ND	mg/kg		0.020		SW8151A	11/05/12 23:41 / ldw
Dinoseb	ND	mg/kg		0.020		SW8151A	11/05/12 23:41 / ldw
MCPA	ND	mg/kg		4.0		SW8151A	11/05/12 23:41 / ldw
MCPP	ND	mg/kg		4.0		SW8151A	11/05/12 23:41 / ldw
Pentachlorophenol	ND	mg/kg		0.0020		SW8151A	11/05/12 23:41 / ldw
Picloram	ND	mg/kg		0.010		SW8151A	11/05/12 23:41 / ldw
Surr: DCAA	78.0	%REC		53-114		SW8151A	11/05/12 23:41 / ldw

-The Reporting Limits reflect multiple dilutions of the sample extract at analysis.

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 66522		
<b>Sample ID:</b> Ics-66522	Laboratory Control Sample			Run: CS5972A.I_121030A			10/30/12 09:27		
Acetone	10.3	mg/kg	4.0	103	49	145			
Acrolein	10.5	mg/kg	4.0	105	20	197			
Benzene	1.05	mg/kg	0.20	105	70	127			
Bromobenzene	1.10	mg/kg	0.20	110	70	135			
Bromochloromethane	0.984	mg/kg	0.20	98	60	130			
Bromodichloromethane	1.01	mg/kg	0.20	101	56	136			
Bromoform	1.04	mg/kg	0.20	104	59	132			
Bromomethane	0.615	mg/kg	0.20	62	18	134			
n-Butylbenzene	1.14	mg/kg	0.20	114	71	134			
sec-Butylbenzene	1.10	mg/kg	0.20	110	67	132			
tert-Butylbenzene	1.11	mg/kg	0.20	111	68	134			
Carbon disulfide	0.952	mg/kg	0.20	95	32	141			
Carbon tetrachloride	1.14	mg/kg	0.20	114	60	140			
Chlorobenzene	1.09	mg/kg	0.20	109	75	132			
Chlorodibromomethane	1.04	mg/kg	0.20	104	62	133			
Chloroethane	0.992	mg/kg	0.20	99	45	139			
Chloroform	1.05	mg/kg	0.20	105	62	132			
Chloromethane	0.984	mg/kg	0.20	98	41	138			
2-Chloroethyl vinyl ether	1.18	mg/kg	0.20	118	41	149			
1,2-Dibromo-3-chloropropane	1.04	mg/kg	0.20	104	57	123			
1,2-Dibromoethane	1.05	mg/kg	0.20	105	60	135			
2-Chlorotoluene	1.09	mg/kg	0.20	109	74	135			
Dibromomethane	1.02	mg/kg	0.20	102	60	135			
1,2-Dichlorobenzene	1.05	mg/kg	0.20	105	70	130			
4-Chlorotoluene	1.15	mg/kg	0.20	115	75	136			
1,3-Dichlorobenzene	1.05	mg/kg	0.20	105	71	132			
1,4-Dichlorobenzene	1.08	mg/kg	0.20	108	71	131			
Dichlorodifluoromethane	1.07	mg/kg	0.20	107	31	123			
1,1-Dichloroethane	1.02	mg/kg	0.20	102	66	130			
1,2-Dichloroethane	1.02	mg/kg	0.20	102	51	140			
1,1-Dichloroethene	1.12	mg/kg	0.20	112	64	133			
cis-1,2-Dichloroethene	0.992	mg/kg	0.20	99	63	131			
trans-1,2-Dichloroethene	1.06	mg/kg	0.20	106	66	133			
1,2-Dichloropropane	0.984	mg/kg	0.20	98	60	130			
1,3-Dichloropropane	1.02	mg/kg	0.20	102	59	135			
2,2-Dichloropropane	1.30	mg/kg	0.20	130	39	157			
1,1-Dichloropropene	1.11	mg/kg	0.20	111	65	132			
cis-1,3-Dichloropropene	1.09	mg/kg	0.20	109	55	134			
trans-1,3-Dichloropropene	1.14	mg/kg	0.20	114	58	146			
Ethylbenzene	1.09	mg/kg	0.20	109	74	136			
Hexachlorobutadiene	1.46	mg/kg	0.20	146	52	133			S
2-Hexanone	10.3	mg/kg	4.0	103	54	129			
Isopropylbenzene	1.30	mg/kg	0.20	130	70	133			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 66522		
<b>Sample ID: Ics-66522</b>	Laboratory Control Sample			Run: CS5972A.I_121030A			10/30/12 09:27		
p-Isopropyltoluene	1.11	mg/kg	0.20	111	70	131			
Methyl tert-butyl ether (MTBE)	0.960	mg/kg	0.20	96	43	152			
Methyl ethyl ketone	11.4	mg/kg	4.0	114	43	148			
Methyl isobutyl ketone	10.2	mg/kg	4.0	102	54	127			
Methylene chloride	0.960	mg/kg	0.20	96	51	134			
Naphthalene	1.12	mg/kg	0.20	112	15	171			
n-Propylbenzene	1.11	mg/kg	0.20	111	72	134			
Styrene	1.10	mg/kg	0.20	110	70	135			
1,1,1,2-Tetrachloroethane	1.06	mg/kg	0.20	106	35	156			
1,1,2,2-Tetrachloroethane	1.04	mg/kg	0.20	104	59	135			
Tetrachloroethene	1.10	mg/kg	0.20	110	64	139			
Toluene	1.10	mg/kg	0.20	110	73	137			
1,2,4-Trichlorobenzene	1.19	mg/kg	0.20	119	34	150			
1,1,1-Trichloroethane	1.10	mg/kg	0.20	110	63	134			
1,1,2-Trichloroethane	0.992	mg/kg	0.20	99	56	136			
Trichloroethene	1.09	mg/kg	0.20	109	65	134			
Trichlorofluoromethane	1.12	mg/kg	0.20	112	48	140			
1,2,3-Trichloropropane	1.06	mg/kg	0.20	106	56	142			
1,2,4-Trimethylbenzene	1.06	mg/kg	0.20	106	67	125			
1,3,5-Trimethylbenzene	1.13	mg/kg	0.20	113	71	131			
Vinyl acetate	1.34	mg/kg	0.20	134	28	123			S
Vinyl chloride	1.06	mg/kg	0.20	106	32	136			
m+p-Xylenes	2.14	mg/kg	0.20	107	75	136			
o-Xylene	1.07	mg/kg	0.20	107	72	134			
Surr: 1,2-Dichloroethane-d4			0.20	103	60	136			
Surr: Dibromofluoromethane			0.20	107	70	132			
Surr: p-Bromofluorobenzene			0.20	119	78	160			
Surr: Toluene-d8			0.20	115	75	138			
<b>Sample ID: mb-66522</b>	Method Blank			Run: CS5972A.I_121030A			10/30/12 10:20		
Acetone	ND	mg/kg	4.0						
Acrolein	ND	mg/kg	4.0						
Benzene	ND	mg/kg	0.20						
Bromobenzene	ND	mg/kg	0.20						
Bromochloromethane	ND	mg/kg	0.20						
Bromodichloromethane	ND	mg/kg	0.20						
Bromoform	ND	mg/kg	0.20						
Bromomethane	ND	mg/kg	0.20						
n-Butylbenzene	ND	mg/kg	0.20						
sec-Butylbenzene	ND	mg/kg	0.20						
tert-Butylbenzene	ND	mg/kg	0.20						
Carbon disulfide	ND	mg/kg	0.20						
Carbon tetrachloride	ND	mg/kg	0.20						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 66522		
<b>Sample ID: mb-66522</b>	Method Blank		Run: CS5972A.L_121030A				10/30/12 10:20		
Chlorobenzene	ND	mg/kg	0.20						
Chlorodibromomethane	ND	mg/kg	0.20						
Chloroethane	ND	mg/kg	0.20						
Chloroform	ND	mg/kg	0.20						
Chloromethane	ND	mg/kg	0.20						
2-Chloroethyl vinyl ether	ND	mg/kg	0.20						
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.20						
1,2-Dibromoethane	ND	mg/kg	0.20						
2-Chlorotoluene	ND	mg/kg	0.20						
Dibromomethane	ND	mg/kg	0.20						
1,2-Dichlorobenzene	ND	mg/kg	0.20						
4-Chlorotoluene	ND	mg/kg	0.20						
1,3-Dichlorobenzene	ND	mg/kg	0.20						
1,4-Dichlorobenzene	ND	mg/kg	0.20						
Dichlorodifluoromethane	ND	mg/kg	0.20						
1,1-Dichloroethane	ND	mg/kg	0.20						
1,2-Dichloroethane	ND	mg/kg	0.20						
1,1-Dichloroethene	ND	mg/kg	0.20						
cis-1,2-Dichloroethene	ND	mg/kg	0.20						
trans-1,2-Dichloroethene	ND	mg/kg	0.20						
1,2-Dichloropropane	ND	mg/kg	0.20						
1,3-Dichloropropane	ND	mg/kg	0.20						
2,2-Dichloropropane	ND	mg/kg	0.20						
1,1-Dichloropropene	ND	mg/kg	0.20						
cis-1,3-Dichloropropene	ND	mg/kg	0.20						
trans-1,3-Dichloropropene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Hexachlorobutadiene	ND	mg/kg	0.20						
2-Hexanone	ND	mg/kg	4.0						
Isopropylbenzene	ND	mg/kg	0.20						
p-Isopropyltoluene	ND	mg/kg	0.20						
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Methyl ethyl ketone	ND	mg/kg	4.0						
Methyl isobutyl ketone	ND	mg/kg	4.0						
Methylene chloride	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
n-Propylbenzene	ND	mg/kg	0.20						
Styrene	ND	mg/kg	0.20						
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.20						
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.20						
Tetrachloroethene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
1,2,4-Trichlorobenzene	ND	mg/kg	0.20						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>									
Batch: 66522									
<b>Sample ID: mb-66522</b>	Method Blank			Run: CS5972A.I_121030A			10/30/12 10:20		
1,1,1-Trichloroethane	ND	mg/kg	0.20						
1,1,2-Trichloroethane	ND	mg/kg	0.20						
Trichloroethene	ND	mg/kg	0.20						
Trichlorofluoromethane	ND	mg/kg	0.20						
1,2,3-Trichloropropane	ND	mg/kg	0.20						
1,2,4-Trimethylbenzene	ND	mg/kg	0.20						
1,3,5-Trimethylbenzene	ND	mg/kg	0.20						
Vinyl acetate	ND	mg/kg	0.20						
Vinyl chloride	ND	mg/kg	0.20						
m+p-Xylenes	ND	mg/kg	0.20						
o-Xylene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: 1,2-Dichloroethane-d4			0.20	106	60	136			
Surr: Dibromofluoromethane			0.20	108	70	132			
Surr: p-Bromofluorobenzene			0.20	116	78	160			
Surr: Toluene-d8			0.20	113	75	138			
<b>Sample ID: b12102190-001ams</b>									
Sample Matrix Spike									
Run: CS5972A.I_121030A									
10/30/12 19:41									
Acetone	9.60	mg/kg	4.0	96	49	145			
Acrolein	7.60	mg/kg	4.0	76	19	197			
Benzene	0.952	mg/kg	0.20	95	70	127			
Bromobenzene	0.896	mg/kg	0.20	90	70	135			
Bromochloromethane	0.944	mg/kg	0.20	94	60	130			
Bromodichloromethane	0.976	mg/kg	0.20	98	56	136			
Bromoform	0.912	mg/kg	0.20	91	59	132			
Bromomethane	0.712	mg/kg	0.20	71	18	134			
n-Butylbenzene	0.960	mg/kg	0.20	96	71	134			
sec-Butylbenzene	0.920	mg/kg	0.20	92	67	132			
tert-Butylbenzene	0.896	mg/kg	0.20	90	68	134			
Carbon disulfide	0.780	mg/kg	0.20	78	32	141			
Carbon tetrachloride	0.944	mg/kg	0.20	94	60	140			
Chlorobenzene	0.896	mg/kg	0.20	90	75	132			
Chlorodibromomethane	0.968	mg/kg	0.20	97	62	133			
Chloroethane	0.920	mg/kg	0.20	92	45	139			
Chloroform	1.02	mg/kg	0.20	102	62	132			
Chloromethane	0.904	mg/kg	0.20	90	41	138			
2-Chloroethyl vinyl ether	1.10	mg/kg	0.20	110	41	149			
1,2-Dibromo-3-chloropropane	0.896	mg/kg	0.20	90	57	123			
1,2-Dibromoethane	0.936	mg/kg	0.20	94	60	135			
2-Chlorotoluene	0.872	mg/kg	0.20	87	74	135			
Dibromomethane	0.888	mg/kg	0.20	89	60	135			
1,2-Dichlorobenzene	0.880	mg/kg	0.20	88	70	130			
4-Chlorotoluene	0.952	mg/kg	0.20	95	75	136			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 66522		
<b>Sample ID: b12102190-001ams</b>	Sample Matrix Spike			Run: CS5972A.L_121030A			10/30/12 19:41		
1,3-Dichlorobenzene	0.872	mg/kg	0.20	87	71	132			
1,4-Dichlorobenzene	0.888	mg/kg	0.20	89	71	131			
Dichlorodifluoromethane	0.832	mg/kg	0.20	83	31	123			
1,1-Dichloroethane	0.944	mg/kg	0.20	94	66	130			
1,2-Dichloroethane	0.960	mg/kg	0.20	96	51	140			
1,1-Dichloroethene	0.960	mg/kg	0.20	96	64	133			
cis-1,2-Dichloroethene	0.928	mg/kg	0.20	93	63	131			
trans-1,2-Dichloroethene	0.944	mg/kg	0.20	94	66	133			
1,2-Dichloropropane	0.848	mg/kg	0.20	85	60	130			
1,3-Dichloropropane	0.952	mg/kg	0.20	95	59	135			
2,2-Dichloropropane	0.920	mg/kg	0.20	92	39	157			
1,1-Dichloropropene	0.928	mg/kg	0.20	93	65	132			
cis-1,3-Dichloropropene	0.920	mg/kg	0.20	92	55	134			
trans-1,3-Dichloropropene	0.976	mg/kg	0.20	98	58	146			
Ethylbenzene	0.912	mg/kg	0.20	91	74	136			
Hexachlorobutadiene	0.872	mg/kg	0.20	87	52	133			
2-Hexanone	9.60	mg/kg	4.0	96	54	129			
Isopropylbenzene	1.06	mg/kg	0.20	103	70	133			
p-Isopropyltoluene	0.904	mg/kg	0.20	90	69	131			
Methyl tert-butyl ether (MTBE)	0.928	mg/kg	0.20	93	43	152			
Methyl ethyl ketone	10.5	mg/kg	4.0	105	43	148			
Methyl isobutyl ketone	9.84	mg/kg	4.0	98	54	127			
Methylene chloride	0.944	mg/kg	0.20	94	51	134			
Naphthalene	0.912	mg/kg	0.20	83	15	171			
n-Propylbenzene	0.960	mg/kg	0.20	88	72	134			
Styrene	0.912	mg/kg	0.20	91	70	135			
1,1,1,2-Tetrachloroethane	0.928	mg/kg	0.20	93	35	156			
1,1,2,2-Tetrachloroethane	0.912	mg/kg	0.20	91	59	135			
Tetrachloroethene	0.920	mg/kg	0.20	92	64	139			
Toluene	0.920	mg/kg	0.20	92	73	137			
1,2,4-Trichlorobenzene	0.904	mg/kg	0.20	90	34	150			
1,1,1-Trichloroethane	0.968	mg/kg	0.20	97	63	134			
1,1,2-Trichloroethane	0.920	mg/kg	0.20	92	56	136			
Trichloroethene	0.856	mg/kg	0.20	86	65	134			
Trichlorofluoromethane	0.912	mg/kg	0.20	91	48	140			
1,2,3-Trichloropropane	0.912	mg/kg	0.20	91	56	142			
1,2,4-Trimethylbenzene	1.42	mg/kg	0.20	64	67	125			S
1,3,5-Trimethylbenzene	1.17	mg/kg	0.20	82	71	130			
Vinyl acetate	1.17	mg/kg	0.20	117	28	123			
Vinyl chloride	0.912	mg/kg	0.20	91	32	136			
m+p-Xylenes	1.82	mg/kg	0.20	91	75	136			
o-Xylene	0.952	mg/kg	0.20	88	72	134			
Surr: 1,2-Dichloroethane-d4			0.20	93	60	136			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM

Report Date: 11/15/12

Project: CPS-LPI-Billings

Work Order: B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>									
Batch: 66522									
<b>Sample ID: b12102190-001ams</b>	Sample Matrix Spike			Run: CS5972A.I_121030A				10/30/12 19:41	
Surr: Dibromofluoromethane	0.20		99	70	132				
Surr: p-Bromofluorobenzene	0.20		95	78	160				
Surr: Toluene-d8	0.20		97	75	138				
<b>Sample ID: b12102190-001amsd</b>	Sample Matrix Spike Duplicate			Run: CS5972A.I_121030A				10/30/12 20:08	
Acetone	10.6	mg/kg	4.0	106	49	145	10	20	
Acrolein	7.98	mg/kg	4.0	80	19	197	4.8	20	
Benzene	0.952	mg/kg	0.20	95	70	127	0.0	20	
Bromobenzene	0.960	mg/kg	0.20	96	70	135	6.9	20	
Bromochloromethane	0.976	mg/kg	0.20	98	60	130	3.3	20	
Bromodichloromethane	0.992	mg/kg	0.20	99	56	136	1.6	20	
Bromoform	1.01	mg/kg	0.20	101	59	132	10	20	
Bromomethane	0.547	mg/kg	0.20	55	18	134	26	20	R
n-Butylbenzene	0.984	mg/kg	0.20	98	71	134	2.5	20	
sec-Butylbenzene	0.944	mg/kg	0.20	94	67	132	2.6	20	
tert-Butylbenzene	0.936	mg/kg	0.20	94	68	134	4.4	20	
Carbon disulfide	0.840	mg/kg	0.20	84	32	141	7.4	20	
Carbon tetrachloride	1.00	mg/kg	0.20	100	60	140	5.8	20	
Chlorobenzene	0.944	mg/kg	0.20	94	75	132	5.2	20	
Chlorodibromomethane	1.04	mg/kg	0.20	104	62	133	7.2	20	
Chloroethane	0.768	mg/kg	0.20	77	45	139	18	20	
Chloroform	1.06	mg/kg	0.20	106	62	132	3.9	20	
Chloromethane	0.968	mg/kg	0.20	97	41	138	6.8	20	
2-Chloroethyl vinyl ether	1.20	mg/kg	0.20	120	41	149	9.1	20	
1,2-Dibromo-3-chloropropane	1.03	mg/kg	0.20	103	57	123	14	20	
1,2-Dibromoethane	1.03	mg/kg	0.20	103	60	135	9.8	20	
2-Chlorotoluene	0.928	mg/kg	0.20	93	74	135	6.2	20	
Dibromomethane	0.960	mg/kg	0.20	96	60	135	7.8	20	
1,2-Dichlorobenzene	0.968	mg/kg	0.20	97	70	130	9.5	20	
4-Chlorotoluene	1.01	mg/kg	0.20	101	75	136	5.7	20	
1,3-Dichlorobenzene	0.936	mg/kg	0.20	94	71	132	7.1	20	
1,4-Dichlorobenzene	0.960	mg/kg	0.20	96	71	131	7.8	20	
Dichlorodifluoromethane	0.824	mg/kg	0.20	82	31	123	1.0	20	
1,1-Dichloroethane	0.992	mg/kg	0.20	99	66	130	5.0	20	
1,2-Dichloroethane	1.06	mg/kg	0.20	106	51	140	10	20	
1,1-Dichloroethene	0.976	mg/kg	0.20	98	64	133	1.7	20	
cis-1,2-Dichloroethene	0.944	mg/kg	0.20	94	63	131	1.7	20	
trans-1,2-Dichloroethene	0.976	mg/kg	0.20	98	66	133	3.3	20	
1,2-Dichloropropane	0.896	mg/kg	0.20	90	60	130	5.5	20	
1,3-Dichloropropane	0.952	mg/kg	0.20	95	59	135	0.0	20	
2,2-Dichloropropane	0.960	mg/kg	0.20	96	39	157	4.3	20	
1,1-Dichloropropene	0.936	mg/kg	0.20	94	65	132	0.9	20	
cis-1,3-Dichloropropene	0.976	mg/kg	0.20	98	55	134	5.9	20	

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>							Batch: 66522		
<b>Sample ID: b12102190-001amsd</b>	Sample Matrix Spike Duplicate			Run: CS5972A.L_121030A			10/30/12 20:08		
trans-1,3-Dichloropropene	1.06	mg/kg	0.20	106	58	146	7.9	20	
Ethylbenzene	0.928	mg/kg	0.20	93	74	136	1.7	20	
Hexachlorobutadiene	1.10	mg/kg	0.20	110	52	133	23	20	R
2-Hexanone	11.0	mg/kg	4.0	110	54	129	13	20	
Isopropylbenzene	1.11	mg/kg	0.20	108	70	133	5.2	20	
p-Isopropyltoluene	0.944	mg/kg	0.20	94	69	131	4.3	20	
Methyl tert-butyl ether (MTBE)	1.08	mg/kg	0.20	108	43	152	15	20	
Methyl ethyl ketone	11.2	mg/kg	4.0	112	43	148	6.6	20	
Methyl isobutyl ketone	11.3	mg/kg	4.0	113	54	127	14	20	
Methylene chloride	0.952	mg/kg	0.20	95	51	134	0.8	20	
Naphthalene	1.15	mg/kg	0.20	107	15	171	23	20	R
n-Propylbenzene	0.960	mg/kg	0.20	88	72	134	0.0	20	
Styrene	0.960	mg/kg	0.20	96	70	135	5.1	20	
1,1,1,2-Tetrachloroethane	0.992	mg/kg	0.20	99	35	156	6.7	20	
1,1,2,2-Tetrachloroethane	1.00	mg/kg	0.20	100	59	135	9.2	20	
Tetrachloroethene	0.904	mg/kg	0.20	90	64	139	1.8	20	
Toluene	0.952	mg/kg	0.20	95	73	137	3.4	20	
1,2,4-Trichlorobenzene	1.13	mg/kg	0.20	113	34	150	22	20	R
1,1,1-Trichloroethane	1.02	mg/kg	0.20	102	63	134	5.6	20	
1,1,2-Trichloroethane	0.968	mg/kg	0.20	97	56	136	5.1	20	
Trichloroethene	0.912	mg/kg	0.20	91	65	134	6.3	20	
Trichlorofluoromethane	0.928	mg/kg	0.20	93	48	140	1.7	20	
1,2,3-Trichloropropane	1.01	mg/kg	0.20	101	56	142	10	20	
1,2,4-Trimethylbenzene	1.28	mg/kg	0.20	51	67	125	10	20	S
1,3,5-Trimethylbenzene	1.12	mg/kg	0.20	77	71	130	4.2	20	
Vinyl acetate	1.36	mg/kg	0.20	136	28	123	15	20	S
Vinyl chloride	1.01	mg/kg	0.20	101	32	136	10	20	
m+p-Xylenes	1.89	mg/kg	0.20	94	75	136	3.9	20	
o-Xylene	0.984	mg/kg	0.20	92	72	134	3.3	20	
Surr: 1,2-Dichloroethane-d4			0.20	94	60	136			
Surr: Dibromofluoromethane			0.20	98	70	132			
Surr: p-Bromofluorobenzene			0.20	95	78	160			
Surr: Toluene-d8			0.20	93	75	138			

**Qualifiers:**

RL - Analyte reporting limit.  
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.  
S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 66587		
<b>Sample ID: MB-66587</b>	Method Blank		Run: SV5973.L_121102B				11/02/12 17:38		
1-Methylnaphthalene	ND	mg/kg	0.33						
2,4,5-Trichlorophenol	ND	mg/kg	0.33						
2,4,6-Trichlorophenol	ND	mg/kg	0.33						
2,4-Dichlorophenol	ND	mg/kg	0.33						
2,4-Dimethylphenol	ND	mg/kg	0.33						
2,4-Dinitrophenol	ND	mg/kg	1.7						
2,4-Dinitrotoluene	ND	mg/kg	0.33						
2,6-Dinitrotoluene	ND	mg/kg	0.33						
2-Chloronaphthalene	ND	mg/kg	0.33						
2-Chlorophenol	ND	mg/kg	0.33						
2-Methylnaphthalene	ND	mg/kg	0.33						
2-Nitrophenol	ND	mg/kg	0.33						
3,3'-Dichlorobenzidine	ND	mg/kg	0.33						
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.7						
4-Bromophenyl phenyl ether	ND	mg/kg	0.33						
4-Chloro-2-methylphenol	ND	mg/kg	0.33						
4-Chloro-3-methylphenol	ND	mg/kg	0.33						
4-Chlorophenol	ND	mg/kg	0.33						
4-Chlorophenyl phenyl ether	ND	mg/kg	0.33						
4-Nitroaniline	ND	mg/kg	0.33						
Acenaphthene	ND	mg/kg	0.33						
Acenaphthylene	ND	mg/kg	0.33						
Anthracene	ND	mg/kg	0.33						
Azobenzene	ND	mg/kg	0.33						
Benzidine	ND	mg/kg	0.33						
Benzo(a)anthracene	ND	mg/kg	0.33						
Benzo(a)pyrene	ND	mg/kg	0.33						
Benzo(b)fluoranthene	ND	mg/kg	0.33						
Benzo(g,h,i)perylene	ND	mg/kg	0.33						
Benzo(k)fluoranthene	ND	mg/kg	0.33						
Benzoic acid	ND	mg/kg	0.33						
bis(-2-chloroethoxy)Methane	ND	mg/kg	0.33						
bis(-2-chloroethyl)Ether	ND	mg/kg	0.33						
bis(2-chloroisopropyl)Ether	ND	mg/kg	0.33						
bis(2-ethylhexyl)Phthalate	ND	mg/kg	0.33						
Butylbenzylphthalate	ND	mg/kg	0.33						
Chrysene	ND	mg/kg	0.33						
Diallate	ND	mg/kg	0.33						
Dibenzo(a,h)anthracene	ND	mg/kg	0.33						
Dibenzofuran	ND	mg/kg	0.33						
Diethyl phthalate	ND	mg/kg	0.33						
Dimethyl phthalate	ND	mg/kg	0.33						
Di-n-butyl phthalate	ND	mg/kg	0.33						

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b> <span style="float: right;">Batch: 66587</span>									
<b>Sample ID: MB-66587</b>	Method Blank			Run: SV5973.I_121102B			11/02/12 17:38		
Di-n-octyl phthalate	ND	mg/kg	0.33						
Fluoranthene	ND	mg/kg	0.33						
Fluorene	ND	mg/kg	0.33						
Hexachlorobenzene	ND	mg/kg	0.33						
Hexachlorocyclopentadiene	ND	mg/kg	0.33						
Hexachloroethane	ND	mg/kg	0.33						
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.33						
Isophorone	ND	mg/kg	0.33						
m+p-Cresols	ND	mg/kg	0.33						
Nitrobenzene	ND	mg/kg	0.33						
n-Nitrosodimethylamine	ND	mg/kg	0.33						
n-Nitroso-di-n-propylamine	ND	mg/kg	0.33						
n-Nitrosodiphenylamine	ND	mg/kg	0.33						
o-Cresol	ND	mg/kg	0.33						
p-Chloroaniline	ND	mg/kg	0.33						
Phenanthrene	ND	mg/kg	0.33						
Phenol	ND	mg/kg	0.33						
Pyrene	ND	mg/kg	0.33						
Pyridine	ND	mg/kg	0.33						
Triallate	ND	mg/kg	0.33						
Surr: 2,4,6-Tribromophenol			0.33	79	65	124			
Surr: 2-Fluorobiphenyl			0.33	78	67	102			
Surr: 2-Fluorophenol			0.33	80	50	108			
Surr: Nitrobenzene-d5			0.33	73	62	95			
Surr: Phenol-d5			0.33	79	56	102			
Surr: Terphenyl-d14			0.33	102	65	121			
<b>Sample ID: LCS-66587</b> <span style="float: right;">Laboratory Control Sample</span> <span style="float: right;">Run: SV5973.I_121102B</span> <span style="float: right;">11/02/12 18:10</span>									
1-Methylnaphthalene	2.72	mg/kg	0.33	82	56	101			
2,4,5-Trichlorophenol	2.92	mg/kg	0.33	88	36	110			
2,4,6-Trichlorophenol	2.96	mg/kg	0.33	89	67	110			
2,4-Dichlorophenol	3.03	mg/kg	0.33	91	66	96			
2,4-Dimethylphenol	2.94	mg/kg	0.33	88	60	105			
2,4-Dinitrophenol	2.93	mg/kg	1.7	88	60	106			
2,4-Dinitrotoluene	3.01	mg/kg	0.33	90	67	111			
2,6-Dinitrotoluene	3.09	mg/kg	0.33	93	69	110			
2-Chloronaphthalene	2.84	mg/kg	0.33	85	64	95			
2-Chlorophenol	2.71	mg/kg	0.33	81	64	88			
2-Methylnaphthalene	2.82	mg/kg	0.33	85	49	101			
2-Nitrophenol	2.97	mg/kg	0.33	89	58	97			
3,3'-Dichlorobenzidine	2.26	mg/kg	0.33	68	41	77			
4,6-Dinitro-2-methylphenol	2.99	mg/kg	1.7	90	59	102			
4-Bromophenyl phenyl ether	2.83	mg/kg	0.33	85	66	103			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 66587		
<b>Sample ID: LCS-66587</b>	Laboratory Control Sample			Run: SV5973.L_1211102B			11/02/12 18:10		
4-Chloro-2-methylphenol	2.64	mg/kg	0.33	79	53	107			
4-Chloro-3-methylphenol	3.12	mg/kg	0.33	94	63	109			
4-Chlorophenol	2.79	mg/kg	0.33	84	52	116			
4-Chlorophenyl phenyl ether	2.82	mg/kg	0.33	85	62	107			
4-Nitroaniline	2.83	mg/kg	0.33	85	53	107			
Acenaphthene	2.77	mg/kg	0.33	83	68	95			
Acenaphthylene	2.70	mg/kg	0.33	81	69	92			
Anthracene	2.98	mg/kg	0.33	89	67	109			
Azobenzene	2.78	mg/kg	0.33	84	68	99			
Benzidine	1.62	mg/kg	0.33	49	10	104			
Benzo(a)anthracene	3.16	mg/kg	0.33	95	66	115			
Benzo(a)pyrene	3.25	mg/kg	0.33	97	60	115			
Benzo(b)fluoranthene	3.26	mg/kg	0.33	98	57	123			
Benzo(g,h,i)perylene	3.30	mg/kg	0.33	99	70	108			
Benzo(k)fluoranthene	3.40	mg/kg	0.33	102	57	110			
Benzoic acid	3.33	mg/kg	0.33	100	50	120			
bis(-2-chloroethoxy)Methane	2.99	mg/kg	0.33	90	54	99			
bis(-2-chloroethyl)Ether	2.97	mg/kg	0.33	89	52	101			
bis(2-chloroisopropyl)Ether	2.64	mg/kg	0.33	79	64	84			
bis(2-ethylhexyl)Phthalate	3.10	mg/kg	0.33	93	57	123			
Butylbenzylphthalate	2.94	mg/kg	0.33	88	69	106			
Chrysene	3.10	mg/kg	0.33	93	63	107			
Dibenzo(a,h)anthracene	3.30	mg/kg	0.33	99	65	110			
Dibenzofuran	2.82	mg/kg	0.33	85	55	99			
Diethyl phthalate	2.91	mg/kg	0.33	87	66	105			
Dimethyl phthalate	2.95	mg/kg	0.33	89	68	103			
Di-n-butyl phthalate	3.08	mg/kg	0.33	92	68	106			
Di-n-octyl phthalate	3.22	mg/kg	0.33	97	67	108			
Fluoranthene	3.00	mg/kg	0.33	90	79	110			
Fluorene	2.87	mg/kg	0.33	86	69	98			
Hexachlorobenzene	2.85	mg/kg	0.33	86	65	101			
Hexachlorocyclopentadiene	2.60	mg/kg	0.33	78	57	94			
Hexachloroethane	2.32	mg/kg	0.33	70	55	78			
Indeno(1,2,3-cd)pyrene	3.53	mg/kg	0.33	106	57	126			
Isophorone	2.96	mg/kg	0.33	89	53	104			
m+p-Cresols	2.99	mg/kg	0.33	90	54	101			
Nitrobenzene	2.79	mg/kg	0.33	84	55	94			
n-Nitrosodimethylamine	2.31	mg/kg	0.33	69	44	85			
n-Nitroso-di-n-propylamine	2.88	mg/kg	0.33	86	60	99			
n-Nitrosodiphenylamine	2.79	mg/kg	0.33	84	49	115			
o-Cresol	2.89	mg/kg	0.33	87	59	101			
p-Chloroaniline	2.64	mg/kg	0.33	79	33	99			
Phenanthrene	2.90	mg/kg	0.33	87	67	105			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 66587									
<b>Sample ID: LCS-66587</b>	Laboratory Control Sample				Run: SV5973.L_121102B			11/02/12 18:10	
Phenol	2.58	mg/kg	0.33	77	59	103			
Pyrene	2.81	mg/kg	0.33	84	70	106			
Pyridine	1.26	mg/kg	0.33	38	24	62			
Triallate	2.64	mg/kg	0.33	79	59	124			
Surr: 2,4,6-Tribromophenol			0.33	87	65	124			
Surr: 2-Fluorobiphenyl			0.33	79	67	102			
Surr: 2-Fluorophenol			0.33	74	50	108			
Surr: Nitrobenzene-d5			0.33	76	62	95			
Surr: Phenol-d5			0.33	81	56	102			
Surr: Terphenyl-d14			0.33	90	65	121			
<b>Sample ID: Ap2A-66587</b>	Laboratory Control Sample				Run: SV5973.L_121102B			11/02/12 18:41	
Diallate	2.91	mg/kg	0.33	87	10	165			
Surr: 2,4,6-Tribromophenol			0.33	82	65	124			
Surr: 2-Fluorobiphenyl			0.33	78	67	102			
Surr: 2-Fluorophenol			0.33	80	50	108			
Surr: Nitrobenzene-d5			0.33	71	62	95			
Surr: Phenol-d5			0.33	79	56	102			
Surr: Terphenyl-d14			0.33	91	65	121			
<b>Sample ID: B12102190-001AMS</b>	Sample Matrix Spike				Run: SV5973.L_121102B			11/02/12 19:43	
1-Methylnaphthalene	2.70	mg/kg	0.33	81	56	101			
2,4,5-Trichlorophenol	2.86	mg/kg	0.33	86	36	110			
2,4,6-Trichlorophenol	3.47	mg/kg	0.33	98	67	110			
2,4-Dichlorophenol	9.67	mg/kg	0.33	102	66	96			S
2,4-Dimethylphenol	2.90	mg/kg	0.33	87	60	105			
2,4-Dinitrophenol	2.03	mg/kg	1.7	61	60	106			
2,4-Dinitrotoluene	2.97	mg/kg	0.33	89	67	111			
2,6-Dinitrotoluene	3.03	mg/kg	0.33	91	69	110			
2-Chloronaphthalene	2.90	mg/kg	0.33	87	64	95			
2-Chlorophenol	3.02	mg/kg	0.33	88	64	88			
2-Methylnaphthalene	2.84	mg/kg	0.33	85	49	101			
2-Nitrophenol	2.90	mg/kg	0.33	87	58	97			
3,3'-Dichlorobenzidine	2.39	mg/kg	0.33	72	41	77			
4,6-Dinitro-2-methylphenol	2.69	mg/kg	1.7	81	59	102			
4-Bromophenyl phenyl ether	2.88	mg/kg	0.33	86	66	103			
4-Chloro-2-methylphenol	3.27	mg/kg	0.33	81	53	107			
4-Chloro-3-methylphenol	3.13	mg/kg	0.33	94	63	109			
4-Chlorophenol	9.53	mg/kg	0.33	105	52	116			
4-Chlorophenyl phenyl ether	2.89	mg/kg	0.33	87	62	107			
4-Nitroaniline	3.03	mg/kg	0.33	91	53	107			
Acenaphthene	2.65	mg/kg	0.33	79	68	95			
Acenaphthylene	2.76	mg/kg	0.33	83	69	92			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 66587		
<b>Sample ID: B12102190-001AMS</b>	Sample Matrix Spike			Run: SV5973.L_121102B			11/02/12 19:43		
Anthracene	2.55	mg/kg	0.33	77	67	109			
Azobenzene	2.75	mg/kg	0.33	82	68	99			
Benzidine	2.03	mg/kg	0.33	61	10	104			
Benzo(a)anthracene	3.30	mg/kg	0.33	99	66	115			
Benzo(a)pyrene	3.21	mg/kg	0.33	96	60	115			
Benzo(b)fluoranthene	3.31	mg/kg	0.33	99	57	123			
Benzo(g,h,i)perylene	3.13	mg/kg	0.33	94	70	108			
Benzo(k)fluoranthene	3.20	mg/kg	0.33	96	57	110			
Benzoic acid	1.51	mg/kg	0.33	45	50	120			S
bis(-2-chloroethoxy)Methane	2.83	mg/kg	0.33	85	54	99			
bis(-2-chloroethyl)Ether	3.32	mg/kg	0.33	100	52	101			
bis(2-chloroisopropyl)Ether	2.69	mg/kg	0.33	81	64	84			
bis(2-ethylhexyl)Phthalate	3.17	mg/kg	0.33	95	57	123			
Butylbenzylphthalate	2.92	mg/kg	0.33	88	69	106			
Chrysene	3.01	mg/kg	0.33	90	63	107			
Dibenzo(a,h)anthracene	3.26	mg/kg	0.33	98	65	110			
Dibenzofuran	2.80	mg/kg	0.33	84	55	99			
Diethyl phthalate	2.95	mg/kg	0.33	89	66	105			
Dimethyl phthalate	2.97	mg/kg	0.33	89	68	103			
Di-n-butyl phthalate	3.00	mg/kg	0.33	90	68	106			
Di-n-octyl phthalate	3.19	mg/kg	0.33	96	67	108			
Fluoranthene	2.92	mg/kg	0.33	88	79	110			
Fluorene	2.88	mg/kg	0.33	86	69	98			
Hexachlorobenzene	2.80	mg/kg	0.33	84	65	101			
Hexachlorocyclopentadiene	2.68	mg/kg	0.33	80	57	94			
Hexachloroethane	2.32	mg/kg	0.33	70	55	78			
Indeno(1,2,3-cd)pyrene	3.43	mg/kg	0.33	103	57	126			
Isophorone	2.58	mg/kg	0.33	78	53	104			
m+p-Cresols	3.17	mg/kg	0.33	95	54	101			
Nitrobenzene	2.66	mg/kg	0.33	80	55	94			
n-Nitrosodimethylamine	2.29	mg/kg	0.33	69	44	85			
n-Nitroso-di-n-propylamine	3.11	mg/kg	0.33	93	60	99			
n-Nitrosodiphenylamine	3.04	mg/kg	0.33	91	49	115			
o-Cresol	3.63	mg/kg	0.33	98	59	101			
p-Chloroaniline	2.61	mg/kg	0.33	78	33	99			
Phenanthrene	2.82	mg/kg	0.33	85	67	105			
Phenol	4.40	mg/kg	0.33	92	59	103			
Pyrene	2.84	mg/kg	0.33	85	70	106			
Pyridine	1.47	mg/kg	0.33	44	24	62			
Triallate	4.70	mg/kg	0.33	23	59	124			S
Surr: 2,4,6-Tribromophenol			0.33	86	65	124			
Surr: 2-Fluorobiphenyl			0.33	78	67	102			
Surr: 2-Fluorophenol			0.33	77	50	108			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>									
Batch: 66587									
<b>Sample ID: B12102190-001AMS</b>	Sample Matrix Spike			Run: SV5973.L_121102B			11/02/12 19:43		
Surr: Nitrobenzene-d5			0.33	76	62	95			
Surr: Phenol-d5			0.33	81	56	102			
Surr: Terphenyl-d14			0.33	85	65	121			
<b>Sample ID: B12102190-001AMSD</b>	Sample Matrix Spike			Run: SV5973.L_121102B			11/02/12 20:14		
1-Methylnaphthalene	2.64	mg/kg	0.33	79	56	101	2.4	40	
2,4,5-Trichlorophenol	2.68	mg/kg	0.33	80	36	110	6.6	40	
2,4,6-Trichlorophenol	3.26	mg/kg	0.33	91	67	110	6.0	40	
2,4-Dichlorophenol	9.07	mg/kg	0.33	84	66	96	6.4	40	
2,4-Dimethylphenol	3.05	mg/kg	0.33	91	60	105	4.8	40	
2,4-Dinitrophenol	1.64	mg/kg	1.7	49	60	106		40	S
2,4-Dinitrotoluene	2.88	mg/kg	0.33	87	67	111	2.8	40	
2,6-Dinitrotoluene	3.02	mg/kg	0.33	91	69	110	0.2	40	
2-Chloronaphthalene	2.80	mg/kg	0.33	84	64	95	3.6	40	
2-Chlorophenol	2.86	mg/kg	0.33	83	64	88	5.3	40	
2-Methylnaphthalene	2.95	mg/kg	0.33	89	49	101	3.9	40	
2-Nitrophenol	2.96	mg/kg	0.33	89	58	97	2.1	40	
3,3'-Dichlorobenzidine	2.55	mg/kg	0.33	76	41	77	6.3	40	
4,6-Dinitro-2-methylphenol	2.50	mg/kg	1.7	75	59	102	7.4	40	
4-Bromophenyl phenyl ether	2.97	mg/kg	0.33	89	66	103	3.1	40	
4-Chloro-2-methylphenol	3.33	mg/kg	0.33	83	53	107	2.0	40	
4-Chloro-3-methylphenol	3.16	mg/kg	0.33	95	63	109	0.8	40	
4-Chlorophenol	10.3	mg/kg	0.33	129	52	116	8.1	40	S
4-Chlorophenyl phenyl ether	2.81	mg/kg	0.33	84	62	107	2.8	40	
4-Nitroaniline	2.95	mg/kg	0.33	89	53	107	2.6	40	
Acenaphthene	2.68	mg/kg	0.33	80	68	95	1.3	40	
Acenaphthylene	2.70	mg/kg	0.33	81	69	92	2.3	40	
Anthracene	2.69	mg/kg	0.33	81	67	109	5.2	40	
Azobenzene	2.97	mg/kg	0.33	89	68	99	7.9	40	
Benzidine	2.11	mg/kg	0.33	63	10	104	3.7	40	
Benzo(a)anthracene	3.30	mg/kg	0.33	99	66	115	0.0	40	
Benzo(a)pyrene	3.29	mg/kg	0.33	99	60	115	2.6	40	
Benzo(b)fluoranthene	3.50	mg/kg	0.33	105	57	123	5.7	40	
Benzo(g,h,i)perylene	3.29	mg/kg	0.33	99	70	108	4.9	40	
Benzo(k)fluoranthene	3.17	mg/kg	0.33	95	57	110	0.7	40	
Benzoic acid	1.61	mg/kg	0.33	48	50	120	6.6	40	S
bis(-2-chloroethoxy)Methane	2.94	mg/kg	0.33	88	54	99	3.7	40	
bis(-2-chloroethyl)Ether	3.24	mg/kg	0.33	97	52	101	2.6	40	
bis(2-chloroisopropyl)Ether	2.64	mg/kg	0.33	79	64	84	2.1	40	
bis(2-ethylhexyl)Phthalate	3.40	mg/kg	0.33	102	57	123	7.0	40	
Butylbenzylphthalate	3.11	mg/kg	0.33	93	69	106	6.4	40	
Chrysene	3.32	mg/kg	0.33	100	63	107	9.7	40	
Dibenzo(a,h)anthracene	3.33	mg/kg	0.33	100	65	110	2.1	40	

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8270C</b>							Batch: 66587		
<b>Sample ID: B12102190-001AMSD</b>	Sample Matrix Spike			Run: SV5973.L_121102B			11/02/12 20:14		
Dibenzofuran	2.80	mg/kg	0.33	84	55	99	0.2	40	
Diethyl phthalate	3.01	mg/kg	0.33	90	66	105	1.8	40	
Dimethyl phthalate	2.93	mg/kg	0.33	88	68	103	1.6	40	
Di-n-butyl phthalate	3.18	mg/kg	0.33	95	68	106	5.8	40	
Di-n-octyl phthalate	3.29	mg/kg	0.33	99	67	108	3.3	40	
Fluoranthene	3.07	mg/kg	0.33	92	79	110	5.1	40	
Fluorene	2.91	mg/kg	0.33	87	69	98	1.2	40	
Hexachlorobenzene	2.99	mg/kg	0.33	90	65	101	6.7	40	
Hexachlorocyclopentadiene	2.61	mg/kg	0.33	78	57	94	2.5	40	
Hexachloroethane	2.36	mg/kg	0.33	71	55	78	1.4	40	
Indeno(1,2,3-cd)pyrene	3.80	mg/kg	0.33	114	57	126	10	40	
Isophorone	2.54	mg/kg	0.33	76	53	104	1.8	40	
m+p-Cresols	3.20	mg/kg	0.33	96	54	101	1.0	40	
Nitrobenzene	2.75	mg/kg	0.33	83	55	94	3.4	40	
n-Nitrosodimethylamine	2.37	mg/kg	0.33	71	44	85	3.3	40	
n-Nitroso-di-n-propylamine	3.10	mg/kg	0.33	93	60	99	0.4	40	
n-Nitrosodiphenylamine	3.17	mg/kg	0.33	95	49	115	4.3	40	
o-Cresol	3.47	mg/kg	0.33	93	59	101	4.7	40	
p-Chloroaniline	2.59	mg/kg	0.33	78	33	99	0.8	40	
Phenanthrene	2.95	mg/kg	0.33	89	67	105	4.5	40	
Phenol	4.33	mg/kg	0.33	90	59	103	1.5	40	
Pyrene	3.01	mg/kg	0.33	90	70	106	5.9	40	
Pyridine	1.49	mg/kg	0.33	45	24	62	1.6	40	
Triallate	4.43	mg/kg	0.33	15	59	124	5.8	40	S
Surr: 2,4,6-Tribromophenol			0.33	88	65	124			
Surr: 2-Fluorobiphenyl			0.33	76	67	102			
Surr: 2-Fluorophenol			0.33	80	50	108			
Surr: Nitrobenzene-d5			0.33	76	62	95			
Surr: Phenol-d5			0.33	79	56	102			
Surr: Terphenyl-d14			0.33	95	65	121			

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b>									
Batch: 66758									
<b>Sample ID: MB-66758</b>	Method Blank		Run: CECD.I_121106A			11/06/12 22:11			
2,4,5-T	ND	mg/kg	0.0040						
2,4,5-TP (Silvex)	ND	mg/kg	0.0040						
2,4-D	ND	mg/kg	0.020						
2,4-DB	ND	mg/kg	0.050						
3,5-Dichlorobenzoic Acid	ND	mg/kg	0.010						
4-Nitrophenol	ND	mg/kg	0.010						
Acifluorfen	ND	mg/kg	0.010						
Bentazon	ND	mg/kg	0.050						
Chloramben	ND	mg/kg	0.010						
Dacthal	ND	mg/kg	0.020						
Dalapon	ND	mg/kg	0.050						
Dicamba	ND	mg/kg	0.0050						
Dichlorprop	ND	mg/kg	0.020						
Dinoseb	ND	mg/kg	0.020						
MCPA	ND	mg/kg	4.0						
MCPP	ND	mg/kg	4.0						
Pentachlorophenol	ND	mg/kg	0.0020						
Picloram	ND	mg/kg	0.010						
Surr: DCAA			0.0020	80	53	114			
<b>Sample ID: LCS-66758</b>	Laboratory Control Sample		Run: CECD.I_121106A			11/06/12 22:44			
2,4,5-T	0.0922	mg/kg	0.0040	92	16	120			
2,4,5-TP (Silvex)	0.0886	mg/kg	0.0040	89	32	119			
2,4-D	0.0986	mg/kg	0.020	99	25	117			
2,4-DB	0.0824	mg/kg	0.050	82	10	147			
3,5-Dichlorobenzoic Acid	0.0922	mg/kg	0.010	92	53	116			
4-Nitrophenol	0.0652	mg/kg	0.010	65	9	94			
Acifluorfen	0.108	mg/kg	0.010	108	55	121			
Bentazon	0.0800	mg/kg	0.050	80	41	125			
Chloramben	0.0504	mg/kg	0.010	50	7	131			
Dacthal	0.108	mg/kg	0.020	108	68	127			
Dalapon	0.0652	mg/kg	0.050	65	32	119			
Dicamba	0.0906	mg/kg	0.0050	91	62	119			
Dichlorprop	0.107	mg/kg	0.020	107	28	134			
Dinoseb	0.0722	mg/kg	0.020	72	7	112			
MCPA	8.72	mg/kg	4.0	87	11	120			
MCPP	7.86	mg/kg	4.0	79	8	134			
Pentachlorophenol	0.0786	mg/kg	0.0020	79	52	101			
Picloram	0.0926	mg/kg	0.010	93	60	119			
Surr: DCAA			0.0020	84	53	114			
<b>Sample ID: B12102190-012AMS</b>	Sample Duplicate		Run: CECD.I_121106A			11/07/12 08:33			
2,4-D	0.970	mg/kg	0.20				42	40	R

**Qualifiers:**

RL - Analyte reporting limit.  
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8151A</b> <span style="float: right;">Batch: 66758</span>									
<b>Sample ID: B12102190-012AMS</b> Sample Duplicate Run: CECD.I_121106A 11/07/12 08:33									
-Because the amount of 2,4-D detected in the sample was significantly higher than the spike amount, the matrix spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12102190-012AMSD</b> Sample Duplicate Run: CECD.I_121106A 11/07/12 09:06									
2,4-D	0.494	mg/kg	0.20				25	40	
-Because the amount of 2,4-D detected in the sample was significantly higher than the spike amount, the matrix spike samples were calculated as Duplicate samples based on the spike amount added plus the original sample concentration.									
<b>Sample ID: B12102190-012AMS</b> Sample Matrix Spike Run: CECD.I_121105A 11/06/12 00:14									
2,4,5-T	0.0750	mg/kg	0.0040	75	16	120			
2,4,5-TP (Silvex)	0.0724	mg/kg	0.0040	72	32	119			
2,4-DB	0.0732	mg/kg	0.050	73	10	147			
3,5-Dichlorobenzoic Acid	0.0968	mg/kg	0.010	97	53	116			
4-Nitrophenol	0.0748	mg/kg	0.010	75	9	94			
Acifluorfen	0.0894	mg/kg	0.010	89	55	121			
Bentazon	0.0706	mg/kg	0.050	71	41	125			
Chloramben	0.0708	mg/kg	0.010	71	7	131			
Dacthal	0.0940	mg/kg	0.020	94	68	127			
Dalapon	0.0752	mg/kg	0.050	75	32	119			
Dicamba	0.123	mg/kg	0.0050	85	62	119			
Dichlorprop	0.102	mg/kg	0.020	102	28	134			
Dinoseb	0.0632	mg/kg	0.020	63	7	112			
MCPA	6.78	mg/kg	4.0	68	11	120			
MCPP	7.96	mg/kg	4.0	80	8	134			
Pentachlorophenol	0.0744	mg/kg	0.0020	74	52	101			
Picloram	0.0740	mg/kg	0.010	74	60	119			
Surr: DCAA			0.0020	86	53	114			
<b>Sample ID: B12102190-012AMSD</b> Sample Matrix Spike Duplicate Run: CECD.I_121105A 11/06/12 00:46									
2,4,5-T	0.0768	mg/kg	0.0040	77	16	120	2.4	40	
2,4,5-TP (Silvex)	0.0740	mg/kg	0.0040	74	32	119	2.2	40	
2,4-DB	0.0796	mg/kg	0.050	80	10	147	8.4	40	
3,5-Dichlorobenzoic Acid	0.0968	mg/kg	0.010	97	53	116	0.0	40	
4-Nitrophenol	0.0880	mg/kg	0.010	88	9	94	16	40	
Acifluorfen	0.101	mg/kg	0.010	101	55	121	12	40	
Bentazon	0.0758	mg/kg	0.050	76	41	125	7.1	40	
Chloramben	0.0696	mg/kg	0.010	70	7	131	1.7	40	
Dacthal	0.0970	mg/kg	0.020	97	68	127	3.1	40	
Dalapon	0.0620	mg/kg	0.050	62	32	119	19	40	
Dicamba	0.129	mg/kg	0.0050	91	62	119	4.8	40	
Dichlorprop	0.106	mg/kg	0.020	106	28	134	4.2	40	
Dinoseb	0.0620	mg/kg	0.020	62	7	112	1.9	40	
MCPA	6.92	mg/kg	4.0	69	11	120	2.0	40	
MCPP	8.54	mg/kg	4.0	85	8	134	7.0	40	
Pentachlorophenol	0.0748	mg/kg	0.0020	75	52	101	0.5	40	
Picloram	0.0748	mg/kg	0.010	75	60	119	1.1	40	

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** AECOM  
**Project:** CPS-LPI-Billings

**Report Date:** 11/15/12  
**Work Order:** B12102190

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8151A							Batch: 66758		
<b>Sample ID:</b> B12102190-012AMSD	Sample Matrix Spike Duplicate		Run: CECD.I_121105A		11/06/12 00:46				
Surr: DCAA	0.0020		87	53	114				

**Qualifiers:**

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

AECOM

B12102190

Login completed by: Jill M. Lippard

Date Received: 10/24/2012

Reviewed by: BL2000\kmcDonald

Received by: jrj

Reviewed Date: 10/25/2012

Carrier Hand Del  
name:

- |   |   |                             |  |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Custody seals intact on sample bottles?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?<br>(Exclude analyses that are considered field parameters<br>such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temp Blank received?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/>                    |
| Container/Temp Blank temperature:   | 5.0°C On Ice                            |                             |  |
| Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/>         |

Contact and Corrective Action Comments:

None





# Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>AECOM</b>		Project Name, PWS, Permit, Etc. <b>CPS-LPI Billings</b>		Sample Origin State: <b>MT</b>		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Report Mail Address: <b>207 N. Broadway, Suite 315 Billings, MT 59101</b>		Contact Name: <b>Shelly Young (406) 896-4582</b>		Email: <b>Shelly.Young@AECOM.COM</b>		Sampler: (Please Print) <b>Shelly Young</b>	
Invoice Address: <b>Same as above</b>		Invoice Contact & Phone: <b>Same as above</b>		Purchase Order: <b>40371</b>		Quoter/Bottle Order: <b>601597</b>	
Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POTW/MWTP <input type="checkbox"/> State: <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> EDD/EDT (Electronic Data) Format: <b>EQWIS</b> <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC		ANALYSIS REQUESTED SEE ATTACHED VOC BARD X SVOC BARD X Herbicides BIRD X		Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments: Collection date = 10/24/12 per call with Shelly Young. 31 10/24/12	
Number of Containers Sample Type: A W S V B D DW Air Water: Soils/Solids Vegetation: Bioassay Other DW - Drinking Water		MATRIX		Standard Turnaround (TAT)		Shipped by: <b>Hand</b>	
1 <b>SI-C-10B D</b> 2 <b>SI-C-11B</b> 3 4 5 6 7 8 9 10		Collection Date 10/28 10/04		Collection Time 1438 1404		Receipt Temp <b>5.0 °C</b> On Ice: <b>Y N</b> Custody Seal On Bottle <b>Y N</b> On Cooler <b>Y N</b> Intact <b>Y N</b> Signature Match <b>Y N</b>	
Relinquished by (print): Shelly Young 10/24/12 1:55 Date/Time:		Signature: 		Received by (print): ARZARMEK STAVI... 10/24/12 Date/Time:		Signature: 	
Relinquished by (print): Shelly Young 10/24/12 1:55 Date/Time:		Signature: 		Received by (print): ARZARMEK STAVI... 10/24/12 Date/Time:		Signature: 	
Sample Disposal: <b>Custody Record MUST be Signed</b>		Return to Client: <b>ARZARMEK STAVI... 10/24/12 1:55 PM</b>		Lab Disposal: <b>ARZARMEK STAVI... 10/24/12 1:53 PM</b>		Laboratory USE ONLY <b>2102190-011</b> <b>-012</b>	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at [www.enlab.com](http://www.enlab.com) for additional information, downloadable fee schedule, forms, and links.

# **Appendix E**

## **Data Validation Reports**



Environment

Submitted to:  
Loveland Products, Inc.

Submitted by:  
AECOM  
Fort Collins, CO  
60266033-04026  
November 2012

November 18, 2012

Organic  
Limited Data Validation Report

Loveland Products, Inc. – Billings, MT  
Surface Impoundment Excavation  
Soil Samples  
Energy Laboratories, Inc. data  
August – October 2012

**Prepared By Sue Milcan  
Environmental Scientist/Quality Assurance**

## **Overview**

The samples analyzed for the Loveland Products, Inc. Billings Surface Impoundment Excavation sampling event of August – October 2012 are listed in the Table of Samples Analyzed (pages 2-3). Limited data validation was performed on a total of 61 soil samples.

Samples were submitted to and analyzed by Energy Laboratories, Inc. of Billings, MT. The reviewed analysis was analyte 2,4-D by SW-846 GC/ECD method 8151A. Percent Moisture data were also reported.

The Analytical Limited Data Validation Checklist is presented as pages 4-9. Data were evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as they applied to the reported methodology. Field duplicate RPD review and applicable control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

The following data components were reviewed during the limited data validation procedure:

<b>Submitted Deliverables</b>
Chain-of-Custody form(s) and sample integrity
Case Narratives (including any laboratory flags)
Sample results, reporting limits, dilution factors
Holding times
Laboratory blank results
Organic surrogate recoveries
LCS (blank spike) results
MS, MSD (matrix spike, matrix spike duplicate) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate results (calculated RPDs)
Electronic data deliverables (EDDs)

## **Data Validation Qualifiers Assigned During this Review**

J      estimated concentration

Assigned qualifiers are detailed in the Analytical Limited Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 10).

## **Overall Data Assessment**

Precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable based on the data reported. The reported data are suitable for their intended use with the qualifications and clarifications noted.

**Table of Samples Analyzed**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Matrix	Sample ID	Sample Date	Sample Time	Laboratory SDG	Laboratory ID
Soil	B-L1-C1	8/16/2012	08:55	B12081498	B12081498-001A
Soil	B-L1-C2	8/16/2012	09:00	B12081498	B12081498-002A
Soil	B-L2-C1	8/20/2012	10:30	B12081789	B12081789-001A
Soil	B-L2-C2	8/20/2012	10:55	B12081789	B12081789-002A
Soil	B-L3-C1	8/20/2012	11:05	B12081789	B12081789-003A
Soil	B-L4-C1	8/20/2012	11:20	B12081789	B12081789-004A
Soil	B-L2-C2-D	8/20/2012	10:55	B12081789	B12081789-005A
Soil	A-L1-C1	8/24/2012	08:45	B12082217	B12082217-001A
Soil	A-L2-C1	8/27/2012	09:05	B12082351	B12082351-001A
Soil	A-L3-C1	8/27/2012	09:30	B12082351	B12082351-002A
Soil	A-S-S-1	8/31/2012	08:28	B12082849	B12082849-001A
Soil	A-S-E-1	8/31/2012	08:33	B12082849	B12082849-002A
Soil	A-S-N-1	8/31/2012	08:18	B12082849	B12082849-003A
Soil	A-S-W-1	8/31/2012	08:24	B12082849	B12082849-004A
Soil	A-F-1	8/31/2012	08:40	B12082849	B12082849-005A
Soil	A-F-2	8/31/2012	08:44	B12082849	B12082849-006A
Soil	A-F-3	8/31/2012	08:48	B12082849	B12082849-007A
Soil	A-F-4	8/31/2012	08:51	B12082849	B12082849-008A
Soil	A-F-4-D	8/31/2012	08:51	B12082849	B12082849-009A
Soil	C-1TP	9/18/2012	11:45	B12091458	B12091458-001A
Soil	C-2TP	9/19/2012	06:50	B12091458	B12091458-002A
Soil	C-3TP	9/19/2012	10:30	B12091458	B12091458-003A
Soil	C-4TP	9/19/2012	11:35	B12091593	B12091593-001A
Soil	C-6TP	9/20/2012	08:15	B12091593	B12091593-002A
Soil	C-6TPD	9/20/2012	08:15	B12091593	B12091593-003A
Soil	B-F-1	9/25/2012	10:01	B12092004	B12092004-001A
Soil	B-F-2	9/25/2012	10:05	B12092004	B12092004-002A
Soil	B-F-3	9/25/2012	09:50	B12092004	B12092004-003A
Soil	B-F-4	9/25/2012	09:54	B12092004	B12092004-004A
Soil	B-F-4D	9/25/2012	09:54	B12092004	B12092004-005A
Soil	B-S-S-1	9/25/2012	09:44	B12092004	B12092004-006A
Soil	B-S-E-1	9/25/2012	09:40	B12092004	B12092004-007A
Soil	B-S-N-1	9/25/2012	09:35	B12092004	B12092004-008A
Soil	B-S-W-1	9/25/2012	09:47	B12092004	B12092004-009A

Continued on next page

**Table of Samples Analyzed**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Matrix	Sample ID	Sample Date	Sample Time	Laboratory SDG	Laboratory ID
Soil	B-F-2R	9/26/2012	09:15	B12092101	B12092101-001A
Soil	C-L1-C1	9/28/2012	09:30	B12092390	B12092390-001A
Soil	C-L1-C1-D	9/28/2012	09:30	B12092390	B12092390-002A
Soil	C-L2-C1	9/28/2012	10:00	B12092390	B12092390-003A
Soil	C-L2-C2	10/2/2012	08:55	B12100140	B12100140-001A
Soil	C-L1-C2	10/2/2012	09:25	B12100140	B12100140-002A
Soil	C-L1-S3	10/9/2012	08:45	B12100760	B12100760-001A
Soil	C-L2-S3	10/9/2012	09:00	B12100760	B12100760-002A
Soil	C-L3-S1	10/22/2012	10:10	B12101942	B12101942-001A
Soil	C-F-1	10/23/2012	16:45	B12102090	B12102090-001A
Soil	C-F-2	10/23/2012	15:45	B12102090	B12102090-002A
Soil	C-F-3	10/23/2012	16:52	B12102090	B12102090-003A
Soil	C-F-3D	10/23/2012	16:52	B12102090	B12102090-004A
Soil	C-F-4	10/23/2012	15:51	B12102090	B12102090-005A
Soil	C-S-N-2D	10/23/2012	15:40	B12102090	B12102090-006A
Soil	C-F-6	10/23/2012	16:37	B12102090	B12102090-007A
Soil	C-S-E-1	10/23/2012	15:36	B12102090	B12102090-008A
Soil	C-S-N-2	10/23/2012	15:40	B12102090	B12102090-009A
Soil	C-S-N-1	10/24/2012	11:12	B12102180	B12102180-001A
Soil	C-F-7	10/24/2012	11:03	B12102180	B12102180-002A
Soil	C-F-8	10/24/2012	12:18	B12102180	B12102180-003A
Soil	C-F-5	10/24/2012	12:43	B12102180	B12102180-004A
Soil	C-S-W-1	10/24/2012	12:06	B12102180	B12102180-005A
Soil	C-S-S-1	10/24/2012	12:33	B12102180	B12102180-006A
Soil	C-S-S-2	10/24/2012	12:25	B12102180	B12102180-007A
Soil	C-F-6R	10/25/2012	10:01	B12102244	B12102244-001A
Soil	C-F-4R	10/25/2012	09:56	B12102244	B12102244-002A

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Loveland Products, Inc.		Laboratory: Energy Laboratories, Inc. of Billings, MT				
Project Reference: Surface Impoundment Excavation		Sample Matrix: Soil Samples				
AECOM Project:		Sample Start Date: 08/16/2012				
Validated By/Date Validated: Sue Milcan 11/18/2012 (completed)		Sample End Date: 10/25/2012				
Samples Analyzed: see Table of Samples Analyzed, Loveland Products, Inc. – Billings Surface Impoundment Excavation, Soil Samples, August – October 2012 (pages 2-3).						
Parameters Reviewed: Analyte 2,4-D by SW-846 GC/ECD method 8151A. Percent Moisture by SW3550A was also reported.						
Laboratory Project IDs (SDGs): see Table of Samples Analyzed, Loveland Products, Inc. – Billings Surface Impoundment Excavation, Soil Samples, August – October 2012 (pages 2-3).						
<b>PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT</b>						
Precision:		<b>X</b>	Acceptable		Unacceptable	SM Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision was determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of field and laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced EPA published or laboratory control charted QC limits. Although some data require qualification based on laboratory RPDs (see item 17), or field duplicate RPDs (see item 21), overall field and laboratory precision is acceptable since a majority of the data are unqualified and no data are rejected. Precision measurements are reviewed in items 17 and 21.						
Accuracy:		<b>X</b>	Acceptable		Unacceptable	SM Initials
Comments: Field accuracy, a measure of the sampling bias, was not determined since equipment rinse, field, and trip blank samples were not submitted for analysis/not required. Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample (LCS), matrix spike, matrix spike duplicate (MS, MSD), and organic system monitoring compound (surrogate) percent recoveries (%Rs). LCS %Rs demonstrated the overall performance of the extraction/analysis. MS and MSD %Rs provided information on sample matrix interferences. System monitoring compound or surrogate recoveries measured system performance and efficiency during organic analysis. The %Rs were compared to EPA published and/or laboratory control charted QC limits. Although some data require qualification based on surrogate outliers (see item 14), overall laboratory accuracy is acceptable since a majority of the data are unqualified and no data are rejected. Accuracy measurements are reviewed in items 12, 14, 15, 16, and 20.						
Method Compliance:		<b>X</b>	Acceptable		Unacceptable	SM Initials
Comments: For this data set, method compliance was determined by evaluating sample integrity, holding time, reporting limits, and laboratory blanks against method specified requirements. No data require qualification based on these measurements, and overall method compliance is acceptable based on the data reported. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20, and 22.						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Completeness:	<b>X</b>	Acceptable		Unacceptable	SM	Initials
<p>Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and detection limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.</p> <p>All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.</p>						
<b>VALIDATION CRITERIA CHECK</b>						
<p>Data validation qualifiers assigned during this review:</p> <p>J        estimated concentration</p> <p>The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary.</p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).</b></p>						
1. Did the laboratory identify any non-conformances related to the analytical results?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: There were no analytical problems noted in the case narrative (cover page) comments. Any assigned laboratory flags were reviewed during the limited validation procedure.</p> <p>Data qualification, if any, related to the comments and/or assigned laboratory data flags are discussed in the following sections.</p>						
2. Were sample Chain-of-Custody forms complete?	<b>X – see notes</b>	Yes		No	SM	Initials
<p>Comments: The COC records were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.</p> <p>Sample C-F-5 (label) was listed as sample C-S-5 on the COC for SDG B12102180. The sample was logged in with the correct sample designation of C-F-5 per AECOM instructions.</p> <p>Sample collection times on bottle labels were listed as 12:33 for sample C-S-S-1 and 12:25 for sample C-S-S-2. The COC entries for these samples (received under SDG B12102180) were reversed. The sample times provided on the container labels were used as the correct entries per AECOM instructions.</p> <p>No action is required other than to document these COC/sample container discrepancies and resolution.</p>						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: All requested analyses as documented on the original COCs were completed.</p>						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

4. Were samples received in good condition and at the appropriate temperature?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Samples were hand delivered to the laboratory directly from the field, on ice, and in good condition as noted on the signed and accepted COC records and the Workorder Receipt Checklists provided. The recorded temperatures of the samples upon receipt at the laboratory were 1.3°C, 1.4°C, 2.2°C, 3.3°C, 3.8°C, 4.4°C, 5.8°C, 8.6°C, 11.2°C, 11.8°C, 12.0°C, 12.4°C, 15.4°C, and 18.6°C. Samples received at less than 2°C were determined to be in acceptable condition since sample containers were intact, no other preservation or condition issues were noted, and samples themselves were not frozen. Samples received at greater than 6°C were determined to be in acceptable condition since ice had not expired, samples were delivered directly from the field, and the recorded temperatures are below room temperature of 24°C.</p>						
5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: The reported method is appropriate for the requested target analyte.</p>						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: The reporting limits (RLs) are achievable by the quoted method. All samples were reported on an as-received (wet weight) basis. Some samples were analyzed at diluted levels due to high target analyte concentration. These dilution factors could only be reviewed in the submitted EDDs, since dilution factors were not noted on the sample data pages of the laboratory report. The RLs were raised appropriately for diluted data.</p> <p>Note that a base dilution of 1:100 with a resulting RL of 2.0 mg/kg was reported for all method blanks and lest dilute soil samples.</p> <p>Note that the laboratory did not report any trace analyte concentrations <math>\geq</math> method detection limit (MDL) but &lt; practical quantitation limit/reporting limit (PQL/RL).</p>						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: The requested target analyte was reported.</p>						
8. Were sample holding times met?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Method-required sample preparation/extraction and analytical holding times were met for all samples and analyses.</p>						
9. Were correct concentration units reported?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Results for 2,4-D were reported as mg/kg wet weight (ppm).</p>						
10. Were the reporting requirements for flagged data met?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Any assigned laboratory flags were reviewed and evaluated during the limited validation process. Data validation qualifiers override any assigned laboratory data flags.</p>						
11. Were laboratory blank samples free of target analyte contamination?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Reported laboratory blanks were free of target analyte contamination.</p>						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?		Yes		No	SM	Initials
Comments: Not applicable - trip blank, field blank, and/or equipment rinse blank samples were not submitted for analysis/not required. Field accuracy was not evaluated.						
13. Were instrument calibrations within method or data validation control limits?		Yes		No	SM	Initials
Comments: Not applicable for this level of limited data validation – Sufficient instrument calibration data were not supplied in analytical laboratory reports and were therefore not included in this data review.						
14. Were surrogate recoveries within control limits?		Yes	X	No	SM	Initials
<p>Comments: Surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples, or the following requirements were met, except as noted. Non-volatile surrogate recoveries affected by required sample dilution did not require qualification, since extraction/analytical efficiency was demonstrated in associated blank and LCS surrogate %Rs. Surrogate outliers in internal laboratory QC samples did not initiate qualification of project sample results that had compliant surrogate %Rs.</p> <p><b>The %Rs for surrogate DCAA were below the 53-114% laboratory QC limits in samples B-L3-C1 (47%), B-L4-C1 (51%), B-L2-C2-D (51%), A-L2-C1 (50%), and A-L3-C1 (50%). The reported results for these samples require J qualifiers to indicate estimated concentrations due to the indicated matrix interference at 1:1000 dilutions, resulting in a possible low bias.</b> Note: Since the laboratory knowingly began analysis with a base dilution factor of 1:100 (see item 6) and accounted for this when determining the surrogate spike concentration, only those surrogates specifically noted as being diluted out at dilutions greater than 100 were determined to be compliant with the surrogate recovery ruling stated above. All low surrogate %Rs not specifically identified as being “diluted out” at &gt;100 dilution, initiated data qualification of the sample result.</p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).</b></p>						
15. Were laboratory control sample recoveries within control limits?	X	Yes		No	SM	Initials
Comments: Submitted LCS %Rs were within data validation QC limits (70-130% for organics) and/or were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods.						
16. Were matrix spike recoveries within control limits?	X	Yes		No	SM	Initials
Comments: Project specific MS, MSD %Rs for reported target analytes were within laboratory control charted QC limits for organics as allowed for SW-846 methods, or the following requirement was met. Where sample concentrations were significantly higher than the amount spiked, the MS samples were instead evaluated as laboratory duplicate samples (first by taking into account the spike amount added). See item 17 for duplicate precision evaluation.						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

17. Were duplicate RPDs and/or serial dilution %Ds within control limits?		Yes	<b>X</b>	No	SM	Initials
<p>Comments: RPDs for target analytes in project-specific duplicate or spiked duplicate samples were within data validation and laboratory control charted QC limits, except as noted.</p> <p><b>The RPD for 2,4-D was high (51%) above the 0-40% laboratory QC limits in the duplicate analysis of sample C-L1-S3. The positive 2,4-D result reported for this sample requires a J qualifier to indicate an estimated concentration due to the laboratory precision outlier.</b></p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).</b></p>						
18. Were organic system performance criteria met?		Yes		No	SM	Initials
<p><i>Comments: Not applicable for this level of limited data validation – Organic system performance data were not supplied in analytical laboratory reports and were therefore not included in this data review.</i></p>						
19. Were internal standards within method criteria for GC/MS and/or ICP-MS sample analyses?		Yes		No	SM	Initials
<p><i>Comments: Not applicable for this level of limited data validation or for the method reported.</i></p>						
20. Were inorganic system performance criteria met?		Yes		No	SM	Initials
<p><i>Comments: Not applicable for this level of limited data validation or for the method reported.</i></p>						
21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	<b>X</b>	Yes		No	SM	Initials
Duplicate Sample No.	A-F-4-D	Primary Sample No.		A-F-4		
Duplicate Sample No.	B-F-4D	Primary Sample No.		B-F-4		
Duplicate Sample No.	B-L2-C2-D	Primary Sample No.		B-L2-C2		
Duplicate Sample No.	C-6TPD	Primary Sample No.		C-6TP		
Duplicate Sample No.	C-F-3D	Primary Sample No.		C-F-3		
Duplicate Sample No.	C-L1-C1-D	Primary Sample No.		C-L1-C1		
Duplicate Sample No.	C-S-N-2D	Primary Sample No.		C-S-N-2		
<p>Comments: Field duplicate RPDs were within data validation QC limits of 0-50% for soil matrices, except as noted below.</p> <p>The following RPD was calculated:</p>						
Method	Units	Analyte	A-F-4	A-F-4-D	RPD	Qualifier
8151A	mg/kg	2,4-D	3960	2300	<b>53.0</b>	<b>J/J</b>
Method	Units	Analyte	B-F-4	B-F-4D	RPD	Qualifier
8151A	mg/kg	2,4-D	338	304	10.6	
Continued on next page						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Method	Units	Analyte	B-L2-C2	B-L2-C2-D	RPD	Qualifier
8151A	mg/kg	2,4-D	164	100	48.5	
Method	Units	Analyte	C-6TP	C-6TPD	RPD	Qualifier
8151A	mg/kg	2,4-D	138	166	18.4	
Method	Units	Analyte	C-F-3	C-F-3D	RPD	Qualifier
8151A	mg/kg	2,4-D	720	864	18.2	
Method	Units	Analyte	C-L1-C1	C-L1-C1-D	RPD	Qualifier
8151A	mg/kg	2,4-D	17	18	5.7	
Method	Units	Analyte	C-S-N-2	C-S-N-2D	RPD	Qualifier
8151A	mg/kg	2,4-D	706	574	20.6	

**Target analytes associated with the highlighted RPD require J qualifiers in the native sample and in the field duplicate sample to indicate estimated concentrations due to variability between field duplicate results (RPD exceeded QC limit).**

**Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

22. Were qualitative criteria for organic target analyte identification met?		Yes		No	SM	Initials
--	--	-----	--	----	----	----------

*Comments: Not applicable for this level of limited data validation – Chromatograms, library searches, and quantitation reports were not supplied in analytical laboratory reports and were therefore not included in this data review. There were no analyte qualitative flags assigned by the laboratory.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	<b>X</b>	Yes		No	SM	Initials
---	----------	-----	--	----	----	----------

Comments: The submitted EDD files were reviewed 100% for positive concentrations and RLs. The data validator corrected any significant figure discrepancies between hardcopy report and EDD entries. According to validation protocol, the hardcopy data report was accepted as the correct reference. All EDDs were consolidated and converted to correct EQUIS format as necessary.

The data validator added correct matrix codes and location assignments to the EDD.

The AECOM Environment project manager was informed of all changes made to the EDD files via this Checklist. The EDD files, with corrections made and qualifiers and reason codes added, were imported to the project database on 11/19/2012 by the data validator.

24. General Comments: Data were evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as applied to the reported methodology. Field duplicate RPD review and applicable control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

**Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Sample ID	Lab ID	Method	Diln	QC Batch	Analyte	Concentration		Qualifier	Reason Code
B-L3-C1	B12081789-003A	8151A	1000	64764	2,4-D	60	mg/kg	J	SUR
B-L4-C1	B12081789-004A	8151A	1000	64764	2,4-D	64	mg/kg	J	SUR
B-L2-C2-D	B12081789-005A	8151A	1000	64764	2,4-D	100	mg/kg	J	SUR
A-L2-C1	B12082351-001A	8151A	1000	64953	2,4-D	159	mg/kg	J	SUR
A-L3-C1	B12082351-002A	8151A	1000	64953	2,4-D	280	mg/kg	J	SUR
A-F-4	B12082849-008A	8151A	10000	65116	2,4-D	3960	mg/kg	J	FD
A-F-4-D	B12082849-009A	8151A	10000	65116	2,4-D	2300	mg/kg	J	FD
C-L1-S3	B12100760-001A	8151A	100	66064	2,4-D	27	mg/kg	J	RPD

**Reason Codes:**

FD – relative percent difference between field duplicates exceeds QC limits; field precision outlier

RPD - relative percent difference between laboratory duplicates (or spiked duplicates) exceeds QC limits; laboratory precision outlier

SUR - surrogate spike recovery outlier; indicated or confirmed matrix interference



Environment

Submitted to:  
Loveland Products, Inc.

Submitted by:  
AECOM  
Fort Collins, CO  
December 2012

December 5, 2012

Organic  
Limited Data Validation Report

Loveland Products, Inc. – Billings, MT  
Surface Impoundment Excavation  
Soil Samples  
Energy Laboratories, Inc. data  
August – October 2012

Prepared By Sue Milcan  
Environmental Scientist/Quality Assurance

## **Overview**

The samples analyzed for the Loveland Products, Inc. Billings Surface Impoundment Excavation sampling event of August – October 2012 are listed in the Table of Samples Analyzed (page 2). Limited data validation was performed on a total of 21 soil samples.

Samples were submitted to and analyzed by Energy Laboratories, Inc. of Billings, MT. The reviewed analyses were Volatile Organic Compounds (VOCs) by SW-846 GC/MS method 8260B; Semivolatile Organic Compounds (SVOCs) by SW-846 GC/MS method 8270C; and Chlorinated Herbicides by SW-846 GC/ECD method 8151A. Percent Moisture by SW3550A data were also reported.

The Analytical Limited Data Validation Checklist is presented as pages 3-10. Data were evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as applied to the reported methodology. Field duplicate RPD review and applicable control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

The following data components were reviewed during the limited data validation procedure:

<b>Submitted Deliverables</b>
Chain-of-Custody form(s) and sample integrity
Case Narratives (including any laboratory flags)
Sample results, reporting detection limits, dilution factors
Holding times
Laboratory blank results
Organic surrogate recoveries
LCS (blank spike) results
MS, MSD (matrix spike, matrix spike duplicate) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate results (calculated RPDs)
Select summarized instrument performance data
Select summarized instrument calibration data
Electronic data deliverables (EDDs)

## **Data Validation Qualifiers Assigned During this Review**

- J        estimated concentration
- UJ      undetected, reporting limit is estimated

Assigned qualifiers are detailed in the Analytical Limited Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (pages 11-15).

## **Overall Data Assessment**

Precision, accuracy, method compliance, and completeness of the data set have been determined to be acceptable based on the data reported. No data were missing, and no reported data were rejected. The reported data are suitable for their intended use with the qualifications and clarifications noted.

**Table of Samples Analyzed**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Matrix	Sample ID	Sample Date	Sample Time	Laboratory SDG	Laboratory ID
Soil	SI A-1A	8/31/2012	10:18	B12082900	B12082900-001A
Soil	SI A-2A	8/31/2012	10:02	B12082900	B12082900-002A
Soil	SI A-3A	8/31/2012	10:15	B12082900	B12082900-003A
Soil	SI A-3AD	8/31/2012	10:15	B12082900	B12082900-004A
Soil	SI A-4B	8/31/2012	10:08	B12082900	B12082900-005A
Soil	SI B-1A	9/25/2012	11:09	B12092040	B12092040-001A
Soil	SI B-2A	9/25/2012	11:00	B12092040	B12092040-002A
Soil	SI B-2AD	9/25/2012	11:00	B12092040	B12092040-003A
Soil	SI B-3B	9/25/2012	10:45	B12092040	B12092040-004A
Soil	SI C-1A	10/24/2012	13:48	B12102190	B12102190-001A
Soil	SI C-2A	10/24/2012	13:54	B12102190	B12102190-002A
Soil	SI C-3A	10/24/2012	13:58	B12102190	B12102190-003A
Soil	SI C-4A	10/24/2012	14:10	B12102190	B12102190-004A
Soil	SI C-5A	10/24/2012	14:13	B12102190	B12102190-005A
Soil	SI C-6A	10/24/2012	14:17	B12102190	B12102190-006A
Soil	SI C-7A	10/24/2012	14:32	B12102190	B12102190-007A
Soil	SI C-8A	10/24/2012	14:37	B12102190	B12102190-008A
Soil	SI C-9A	10/24/2012	14:41	B12102190	B12102190-009A
Soil	SI C-10B	10/24/2012	14:24	B12102190	B12102190-010A
Soil	SI C-10BD	10/24/2012	14:24	B12102190	B12102190-011A
Soil	SI C-11B	10/24/2012	14:04	B12102190	B12102190-012A

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Project Name: Loveland Products, Inc.	Laboratory: Energy Laboratories, Inc. of Billings, MT					
Project Reference: Surface Impoundment Excavation	Sample Matrix: Soil Samples					
AECOM Project: 60266033-04026	Sample Start Date: 08/31/2012					
Validated By/Date Validated: Sue Milcan 12/5/2012 (completed)	Sample End Date: 10/24/2012					
Samples Analyzed: see Table of Samples Analyzed, Loveland Products, Inc. – Billings Surface Impoundment Excavation, Soil Samples, August – October 2012 (page 2).						
Parameters Reviewed: Volatile Organic Compounds (VOCs) by SW-846 GC/MS method 8260B; Semivolatile Organic Compounds (SVOCs) by SW-846 GC/MS method 8270C; and Chlorinated Herbicides by SW-846 GC/ECD method 8151A. Percent Moisture by SW3550A data were also reported.						
Laboratory Project IDs (SDGs): B12082900, B12092040, B12102190						
<b>PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT</b>						
Precision:	<b>X</b>	Acceptable		Unacceptable	SM	Initials
Comments: Precision is the measure of variability of individual sample measurements. Field precision was determined by comparison of field duplicate sample results. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation of field and laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. RPD limits referenced EPA published or laboratory control charted QC limits. Although some data require qualification based on laboratory RPDs (see item 17), overall field and laboratory precision is acceptable since a majority of the data are unqualified and no data are rejected. Precision measurements are reviewed in items 17 and 21.						
Accuracy:	<b>X</b>	Acceptable		Unacceptable	SM	Initials
Comments: Field accuracy, a measure of the sampling bias, was not determined since equipment rinse, field, and trip blank samples were not submitted for analysis/not required. Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample (LCS), matrix spike, matrix spike duplicate (MS, MSD), and organic system monitoring compound (surrogate) percent recoveries (%Rs). LCS %Rs demonstrated the overall performance of the extraction/analysis. MS and MSD %Rs provided information on sample matrix interferences. System monitoring compound or surrogate recoveries measured system performance and efficiency during organic analysis. The %Rs were compared to EPA published and/or laboratory control charted QC limits. Although some data require qualification based on surrogate outliers (see item 14), or matrix spike outliers (see item 16), overall laboratory accuracy is acceptable since a majority of the data are unqualified and no data are rejected. Accuracy measurements are reviewed in items 12, 14, 15, 16, and 20.						
Method Compliance:	<b>X</b>	Acceptable		Unacceptable	SM	Initials
Comments: For this data set, method compliance was determined by evaluating sample integrity, holding time, reporting limits, and laboratory blanks against method specified requirements. Additionally, summarized instrument performance and calibration results were also considered, even though full QC criteria and supporting documentation to fully evaluate these measurements were not provided in this level of data package submittal. Although some data require qualification based on estimated quantitation (see item 6), and/or indicated calibration outliers (see item 13), overall method compliance is acceptable based on the data submitted since a majority of the data are unqualified and no data points are rejected. Method compliance measurements are reviewed in items 4, 6, 8, 11, 13, 18, 19, 20, and 22.						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Completeness:	<b>X</b>	Acceptable		Unacceptable	SM	Initials
<p>Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Review completeness goals were set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods, and detection limits. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.</p> <p>All of the reported data are usable, some with qualification. Since no data are missing or rejected, completeness of the dataset is calculated to be 100% and is acceptable.</p>						
<b>VALIDATION CRITERIA CHECK</b>						
<p>Data validation qualifiers assigned during this review:</p> <p>J        estimated concentration</p> <p>UJ      undetected, reporting limit is estimated</p> <p>The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary.</p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).</b></p>						
1. Did the laboratory identify any non-conformances related to the analytical results?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Required dilutions due to high analyte concentration and/or matrix interference were identified. Matrix spike recoveries affected by high source sample results were noted. Any assigned laboratory flags were reviewed during the limited validation procedure.</p> <p>Data qualification, if any, related to the comments and/or assigned laboratory data flags are discussed in the following sections.</p>						
2. Were sample Chain-of-Custody forms complete?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: The COC records were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.</p>						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: All requested analyses as documented on the original COCs were completed.</p>						
4. Were samples received in good condition and at the appropriate temperature?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Samples were hand delivered to the laboratory directly from the field, on ice, and in good condition as noted on the signed and accepted COC record and the Workorder Receipt Checklist provided with each sample delivery group (SDG). The recorded temperatures of the samples upon receipt at the laboratory were 5.0°C, 6.0°C, and 16.2°C. Samples received at greater than 6°C were determined to be in acceptable condition since ice had not expired, samples were delivered directly from the field, and the recorded temperature is below room temperature of 24°C.</p>						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	<b>X</b>	Yes		No	SM	Initials
Comments: The reported methods are appropriate for all target analytes reported and for the sample matrix.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: The reporting limits (RLs) are achievable by the quoted method. All samples were reported on an as-received (wet weight) basis. Some samples were analyzed at diluted levels due to high target analyte concentration. These dilution factors could only be reviewed in the submitted EDDs, since dilution factors were not noted on the sample data pages of the laboratory reports. The RLs were raised appropriately for diluted data.</p> <p><u>All Methods -</u></p> <p><b>Sample results reported at concentrations <math>\geq</math> the method detection limit (MDL) but <math>&lt;</math> the practical quantitation limit or reporting limit (PQL/RL), require J qualifiers to indicate estimated concentrations. The analyte cannot be accurately quantitated at this trace concentration level.</b></p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).</b></p>						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	<b>X – see note</b>	Yes		No	SM	Initials
<p>Comments: Only analytes applicable to the requested methods were reported.</p> <p>Note that one extra analyte, 1,2,3-Trichlorobenzene, was reported in method 8260B for sample SI A-3AD. This analyte was not reported for any other samples. No action is required for this review level other than to note this observation.</p>						
8. Were sample holding times met?	<b>X</b>	Yes		No	SM	Initials
Comments: Method-required sample preparation/extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	<b>X</b>	Yes		No	SM	Initials
Comments: Organic data were reported as mg/kg wet weight (ppm). The percent moisture data were reported as a percentage (%).						
10. Were the reporting requirements for flagged data met?	<b>X</b>	Yes		No	SM	Initials
Comments: All assigned laboratory flags were reviewed and evaluated during the limited validation process. Data validation qualifiers override any assigned laboratory data flags.						
11. Were laboratory blank samples free of target analyte contamination?	<b>X</b>	Yes		No	SM	Initials
Comments: Reported laboratory blanks were free of target analyte contamination.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?		Yes		No	SM	Initials
Comments: Not applicable - trip blank, field blank, and/or equipment rinse blank samples were not submitted for analysis/not required. Field accuracy was not evaluated.						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

13. Were instrument calibrations within method or data validation control limits?		Yes	<b>X – limited review</b>	No	SM	Initials
<p><i>Comments: Not applicable for this level of limited data validation – Instrument calibration data were not supplied in analytical laboratory reports and were therefore not included in this data review, except as indicated below.</i></p> <p>Select summarized CCV recoveries were provided. A general review to verify that the reported %Rs were within laboratory, method, and/or data validation QC criteria was conducted. No relevant calibration outliers were noted based on the supplied data, except as noted.</p> <p><u>Method 8260B –</u></p> <p><b>The %R for n-butylbenzene (133%) was above the 70-130% QC limits in the CCV of 9/4/12 at 09:15 on instrument 5971A.I. Based on this very limited information, results for this analyte in project samples associated with this CCV require UJ qualifiers to indicate estimated reporting limits due to possible system bias. Note that no positive n-butylbenzene results were associated with this CCV.</b></p> <p><u>Method 8151A –</u></p> <p><b>The %R for 2,4-DB was below the 85--115% QC limits in the CCVs of 9/6/12 at 11:38 and 19:12 at 73% and 82% respectively. Based on this very limited information, results for this analyte in project samples associated with these CCVs require UJ qualifiers to indicate estimated reporting limits due to possible system bias. Note that no positive 2,4-DB results were associated with these CCVs.</b></p> <p><b>The %R for MCPA was above the 85--115% QC limits in the CCV of 10/1/12 at 11:52 at 124%. Based on this very limited information, results for this analyte in project samples associated with this CCV require UJ qualifiers to indicate estimated reporting limits due to possible system bias. Note that no positive MCPA results were associated with this CCV.</b></p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).</b></p>						
14. Were surrogate recoveries within control limits?		Yes	<b>X</b>	No	SM	Initials
<p><i>Comments: Surrogate %Rs for organic analyses were within laboratory control-charted QC limits (as allowed for SW-846 methods) for all project samples and associated laboratory QC samples, or the following requirements were met, except as noted. Method 8270C allows for one surrogate per fraction (acid or base/neutral) to be outside QC limits as long as the recovery is greater than or equal to 10%. Non-volatile surrogate recoveries affected by required sample dilution did not require qualification, since extraction/analytical efficiency was demonstrated in associated blank and LCS surrogate %Rs. Surrogate outliers in internal laboratory QC samples did not initiate qualification of project sample results that had compliant surrogate %Rs.</i></p> <p><u>Method 8151A –</u></p> <p><b>The %R for surrogate DCAA was above the 53-114% laboratory QC limits at 116% in sample SI A-2A. The surrogate data were reported without reference to dilution level. Positive results reported for this sample require J qualifiers to indicate estimated concentrations due to the indicated matrix interference at all dilution levels, resulting in a possible high bias.</b></p> <p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).</b></p>						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

15. Were laboratory control sample recoveries within control limits?	<b>X</b>	Yes		No	SM	Initials
<p>Comments: Submitted LCS %Rs were within data validation QC limits (70-130% for organics) for reported target analytes, and/or were within laboratory control-charted QC limits for organic target analytes as allowed for SW-846 organic methods, or the following requirement was met. High LCS %Rs associated with undetected sample results did not initiate qualification of data since the indicated high system bias was not realized.</p>						
16. Were matrix spike recoveries within control limits?		Yes	<b>X</b>	No	SM	Initials
<p>Comments: Project specific MS, MSD %Rs for reported target analytes were within laboratory control charted QC limits for organics as allowed for SW-846 methods, or the following requirements were met, except as noted. Where sample concentrations were significantly higher than the amount spiked, the MS samples were instead evaluated as laboratory duplicate samples (first by taking into account the spike amount added) - see item 17 for duplicate precision evaluation. High spike %Rs associated with undetected sample results did not initiate qualification of data since the indicated high bias was not realized. Organic MS/MSD %Rs must both be outside of QC limits in order for organic results to be qualified based on matrix. If organic matrix effect was not confirmed (either MS or MSD was compliant), data did not require qualification and are not outlined in this report. MS, MSD %Rs from non-project samples were considered, but were not utilized to qualify project samples since matrix similarity to project samples could not be guaranteed.</p>						
<p><u>Method 8260B –</u></p>						
<p><b>Both MS and MSD %Rs for 1,2,4-trimethylbenzene (51-64%) were below the 67-125% laboratory QC limits in the spiked analysis of source sample SI C-1A. This analyte was detected in the source sample and requires a J qualifier to indicate an estimated concentration due to confirmed matrix interference, low bias indicated.</b></p>						
<p><u>Method 8270C –</u></p>						
<p><b>Both MS and MSD %Rs for 2,4-dinitrophenol (41-46%) and benzoic acid (45-47%) were below the laboratory QC limits in the spiked analysis of source sample SI B-1A. The MSD %R for triallate (58%) was also below QC limits and was not reported in the MS analysis. These analytes require J/UJ qualifiers in sample SI B-1A to indicate estimated concentrations or reporting limits (as applicable) due to confirmed or indicated matrix interference.</b></p>						
<p><b>Both MS and MSD %Rs for benzoic acid (45-48%) and triallate (15-23%) were below the laboratory QC limits in the spiked analysis of source sample SI C-1A. These analytes require J/UJ qualifiers in sample SI C-1A to indicate estimated concentrations or reporting limits (as applicable) due to confirmed matrix interference, low bias indicated.</b></p>						
<p><b>Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).</b></p>						
17. Were duplicate RPDs and/or serial dilution %Ds within control limits?		Yes	<b>X</b>	No	SM	Initials
<p>Comments: RPDs for target analytes in project-specific duplicate or spiked duplicate samples were within data validation and laboratory control charted QC limits, or RPDs met the following requirement, except as noted. High RPDs associated with undetected project sample results did not initiate data qualification and are not detailed in this report since the precision of the reporting limit is not in question.</p>						
<p><b>The RPD for 2,4-D was high (110%) above the 0-40% laboratory QC limits in the spiked duplicate analysis of sample SI B-1A. The positive 2,4-D result reported for this sample requires a J qualifier to indicate an estimated concentration due to the laboratory precision outlier.</b></p>						
<p>Continued on next page</p>						

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

**The RPD for 2,4-D was high (42%) above the 0-40% laboratory QC limits in the duplicate analysis of sample SI C-11B. The positive 2,4-D result reported for this sample requires a J qualifier to indicate an estimated concentration due to the laboratory precision outlier.**

**Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).**

18. Were organic system performance criteria met?	<b>X – limited review</b>	Yes		No	SM	Initials
---	---------------------------	-----	--	----	----	----------

*Comments: Not applicable for this level of limited data validation – Organic system performance data were not supplied in analytical laboratory reports and were therefore not included in this data review except as indicated below.*

Summarized GC/MS tunes were within ion abundance method criteria based on the limited information provided in this level of laboratory deliverable package. No qualification of data was assigned based on system performance summaries provided.

19. Were internal standards within method criteria for GC/MS and/or ICP-MS sample analyses?		Yes		No	SM	Initials
---	--	-----	--	----	----	----------

*Comments: Not applicable for this level of limited data validation – GC/MS internal standard data were not supplied in analytical laboratory reports and were therefore not included in this data review.*

20. Were inorganic system performance criteria met?		Yes		No	SM	Initials
---	--	-----	--	----	----	----------

*Comments: Not applicable for this level of limited data validation or for the methods reported.*

21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	<b>X</b>	Yes		No	SM	Initials
---	----------	-----	--	----	----	----------

Duplicate Sample No.	SI A-3AD	Primary Sample No.	SI A-3A
----------------------	----------	--------------------	---------

Duplicate Sample No.	SI B-2AD	Primary Sample No.	SI B-2A
----------------------	----------	--------------------	---------

Duplicate Sample No.	SI C-10BD	Primary Sample No.	SI C-10B
----------------------	-----------	--------------------	----------

Comments: Field duplicate RPDs were within data validation QC limits of 0-50% for soil matrices, or RPDs were not applicable due to results that were  $\pm$  the detection limit or were undetected in both samples. Field duplicate and native sample concentrations that were both undetected are not reflected in the table below since RPDs are not applicable.

The following RPDs were calculated:

Method	Units	Analyte	SI A-3A	SI A-3AD	RPD	Qualifiers
3550A	percent	Percent Moisture	12	13	8.0	
8151A	mg/kg	2,4-D	666	858	25.2	
8151A	mg/kg	Dicamba	2.0	2.4	18.2	
8151A	mg/kg	Dichloroprop	21	26	21.3	
8260B	mg/kg	1,2,4-Trimethylbenzene	5.9	7.5	23.9	
8260B	mg/kg	1,3,5-Trimethylbenzene	2.0	2.3	14.0	

Continued on next page

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Method	Units	Analyte	SI A-3A	SI A-3AD	RPD	Qualifiers
8260B	mg/kg	4-Isopropyl toluene	0.059	0.066	11.2	
8260B	mg/kg	Isopropylbenzene	0.12	0.14	15.4	
8260B	mg/kg	m,p-Xylene	0.087	0.096	9.8	
8260B	mg/kg	n-Propylbenzene	0.40	0.47	16.1	
8260B	mg/kg	o-Xylene	0.15	0.16	6.5	
8260B	mg/kg	sec-Butylbenzene	0.075	0.088	16.0	
8260B	mg/kg	Xylene, total	0.087	0.096	9.8	
8270C	mg/kg	1-Methylnaphthalene	0.38	0.40	5.1	
8270C	mg/kg	2,4,6-Trichlorophenol	0.97	0.76	24.3	
8270C	mg/kg	2,4-Dichlorophenol	23	18	24.4	
8270C	mg/kg	2-Chlorophenol	0.30	0.28	6.9	
8270C	mg/kg	2-Methylnaphthalene	0.62	0.62	0.0	
8270C	mg/kg	3,4-Methylphenol	0.097	< 0.33	+/- RL	
8270C	mg/kg	4-Chloro-2-methylphenol	1.8	1.7	5.7	
8270C	mg/kg	4-Chlorophenol	5.6	3.9	35.8	
8270C	mg/kg	bis(2-Ethylhexyl)phthalate	0.45	0.44	2.2	
8270C	mg/kg	Diallate	17	16	6.1	
8270C	mg/kg	Di-n-octylphthalate	0.40	0.36	10.5	
8270C	mg/kg	Hexachlorobenzene	0.079	0.072	9.3	
8270C	mg/kg	Triallate	217	233	7.1	
Method	Units	Analyte	SI B-2A	SI B-2AD	RPD	Qualifiers
3550A	percent	Percent Moisture	11	11	0.0	
8151A	mg/kg	2,4-D	50	49	2.0	
8151A	mg/kg	2,4-DB	0.77	0.81	5.1	
8151A	mg/kg	Dicamba	1.0	1.1	9.5	
8151A	mg/kg	Dichloroprop	2.8	3.0	6.9	
8260B	mg/kg	1,2,4-Trimethylbenzene	0.11	0.095	14.6	
8260B	mg/kg	1,3,5-Trimethylbenzene	< 0.20	0.026	+/- RL	
8260B	mg/kg	Acetone	0.98	< 4.0	+/- RL	
8270C	mg/kg	2,4,6-Trichlorophenol	0.12	0.15	22.2	
8270C	mg/kg	2,4-Dichlorophenol	8.8	9.6	8.7	
8270C	mg/kg	2-Methylphenol	2.9	2.6	10.9	
8270C	mg/kg	3,4-Methylphenol	0.13	0.078	50.0	
8270C	mg/kg	4-Chloro-2-methylphenol	4.8	5.4	11.8	
8270C	mg/kg	4-Chlorophenol	7.8	9.0	14.3	
8270C	mg/kg	Benzoic acid	0.42	0.39	7.4	
8270C	mg/kg	Diallate	0.88	0.99	11.8	
8270C	mg/kg	Triallate	0.68	0.83	19.9	

Continued on next page

## ANALYTICAL LIMITED DATA VALIDATION CHECKLIST

Method	Units	Analyte	SI C-10B	SI C-10BD	RPD	Qualifiers
3550A	percent	Percent Moisture	17	16	6.1	
8151A	mg/kg	2,4-D	1.9	1.6	17.1	
8151A	mg/kg	Dicamba	0.12	0.13	8.0	
8151A	mg/kg	Dichloroprop	0.50	0.58	14.8	
8260B	mg/kg	1,2,4-Trimethylbenzene	0.50	0.39	24.7	
8260B	mg/kg	1,3,5-Trimethylbenzene	0.17	0.13	26.7	
8260B	mg/kg	Isopropylbenzene	0.028	< 0.20	+/- RL	
8260B	mg/kg	n-Propylbenzene	0.083	0.061	30.6	
8260B	mg/kg	o-Xylene	0.036	0.028	25.0	
8260B	mg/kg	Toluene	0.026	< 0.20	+/- RL	
8270C	mg/kg	2,4-Dichlorophenol	0.58	0.33	+/- RL	
8270C	mg/kg	2-Methylphenol	0.28	0.41	37.7	
8270C	mg/kg	4-Chloro-2-methylphenol	0.35	0.29	18.8	
8270C	mg/kg	4-Chlorophenol	0.32	0.28	13.3	
8270C	mg/kg	Diallate	0.55	0.44	22.2	
8270C	mg/kg	Phenol	0.077	0.065	16.9	

22. Were qualitative criteria for organic target analyte identification met?

Yes

No

SM

Initials

*Comments: Not applicable for this level of limited data validation – Chromatograms, library searches, and quantitation reports were not supplied in analytical laboratory reports and were therefore not included in this data review. There were no analyte qualitative flags assigned by the laboratory.*

23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?

**X**

Yes

No

SM

Initials

Comments: The submitted EDD files were reviewed 100% for positive concentrations and RLs. The data validator corrected any significant figure discrepancies between hardcopy report and EDD entries. According to validation protocol, the hardcopy data report was accepted as the correct reference. All EDDs were consolidated and converted to correct EQUIS format as necessary.

The data validator added correct matrix codes, parent codes, and location assignments to the EDD.

The AECOM Environment project manager was informed of all changes made to the EDD files via this Checklist. The EDD files, with corrections made and qualifiers and reason codes added, were imported to the project database on 12/5/2012 by the data validator.

24. General Comments: Data were evaluated based on validation criteria set forth in the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-08-01, June 2008, as applied to the reported methodology. Field duplicate RPD review and applicable control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

**Refer to the table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (pages 11-15).**

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Sample ID	Lab ID	Method	Dilution	QC Batch	Analyte	Concentration	Qualifier	Reason Code
SI A-1A	B12082900-001A	8151A	100	65180	2,4-DB	< 5.0 mg/kg	UJ	CCV
SI A-1A	B12082900-001A	8260B	1	65148	n-Butylbenzene	< 0.20 mg/kg	UJ	CCV
SI A-1A	B12082900-001A	8270C	1	65168	Fluorene	0.10 mg/kg	J	< PQL
SI A-1A	B12082900-001A	8270C	1	65168	Hexachlorobenzene	0.13 mg/kg	J	< PQL
SI A-2A	B12082900-002A	8151A	10	65180	Dicamba	0.22 mg/kg	J	SUR
SI A-2A	B12082900-002A	8151A	100	65180	2,4-DB	< 5.0 mg/kg	UJ	CCV
SI A-2A	B12082900-002A	8151A	100	65180	Dichloroprop	7.7 mg/kg	J	SUR
SI A-2A	B12082900-002A	8151A	1000	65180	2,4-D	268 mg/kg	J	SUR
SI A-2A	B12082900-002A	8260B	1	65148	Isopropylbenzene	0.033 mg/kg	J	< PQL
SI A-2A	B12082900-002A	8260B	1	65148	n-Butylbenzene	< 0.20 mg/kg	UJ	CCV
SI A-2A	B12082900-002A	8260B	1	65148	n-Propylbenzene	0.14 mg/kg	J	< PQL
SI A-2A	B12082900-002A	8260B	1	65148	o-Xylene	0.055 mg/kg	J	< PQL
SI A-2A	B12082900-002A	8270C	1	65168	2-Methylnaphthalene	0.24 mg/kg	J	< PQL
SI A-2A	B12082900-002A	8270C	1	65168	Hexachlorobenzene	0.068 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8151A	100	65180	2,4-DB	< 5.0 mg/kg	UJ	CCV
SI A-3A	B12082900-003A	8260B	1	65148	4-Isopropyl toluene	0.059 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8260B	1	65148	Isopropylbenzene	0.12 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8260B	1	65148	m,p-Xylene	0.087 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8260B	1	65148	n-Butylbenzene	< 0.20 mg/kg	UJ	CCV
SI A-3A	B12082900-003A	8260B	1	65148	o-Xylene	0.15 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8260B	1	65148	sec-Butylbenzene	0.075 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8260B	1	65148	Xylene, total	0.087 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8270C	1	65168	2-Chlorophenol	0.30 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8270C	1	65168	3,4-Methylphenol	0.097 mg/kg	J	< PQL
SI A-3A	B12082900-003A	8270C	1	65168	Hexachlorobenzene	0.079 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8151A	100	65180	2,4-DB	< 5.0 mg/kg	UJ	CCV
SI A-3AD	B12082900-004A	8260B	1	65148	4-Isopropyl toluene	0.066 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8260B	1	65148	Isopropylbenzene	0.14 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8260B	1	65148	m,p-Xylene	0.096 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8260B	1	65148	n-Butylbenzene	< 0.20 mg/kg	UJ	CCV
SI A-3AD	B12082900-004A	8260B	1	65148	o-Xylene	0.16 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8260B	1	65148	sec-Butylbenzene	0.088 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8260B	1	65148	Xylene, total	0.096 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8270C	1	65168	2-Chlorophenol	0.28 mg/kg	J	< PQL
SI A-3AD	B12082900-004A	8270C	1	65168	Hexachlorobenzene	0.072 mg/kg	J	< PQL

Continued on next page

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Sample ID	Lab ID	Method	Dilution	QC Batch	Analyte	Concentration	Qualifier	Reason Code
SI A-4B	B12082900-005A	8260B	1	65148	1,3,5-Trimethylbenzene	0.14 mg/kg	J	< PQL
SI A-4B	B12082900-005A	8260B	1	65148	n-Butylbenzene	< 0.20 mg/kg	UJ	CCV
SI A-4B	B12082900-005A	8260B	1	65148	n-Propylbenzene	0.062 mg/kg	J	< PQL
SI A-4B	B12082900-005A	8270C	1	65168	2-Methylphenol	0.049 mg/kg	J	< PQL
SI A-4B	B12082900-005A	8270C	1	65168	Phenol	0.11 mg/kg	J	< PQL
SI A-4B	B12082900-005A	8270C	1	65168	Triallate	0.13 mg/kg	J	< PQL
SI B-1A	B12092040-001A	8151A	1	65731	2,4-D	0.069 mg/kg	J	RPD
SI B-1A	B12092040-001A	8151A	10	65731	MCPA	< 40 mg/kg	UJ	CCV
SI B-1A	B12092040-001A	8260B	1	65875	1,2,4-Trimethylbenzene	0.055 mg/kg	J	< PQL
SI B-1A	B12092040-001A	8270C	1	65919	2,4-Dinitrophenol	< 1.7 mg/kg	UJ	MS
SI B-1A	B12092040-001A	8270C	1	65919	2-Methylphenol	0.14 mg/kg	J	< PQL
SI B-1A	B12092040-001A	8270C	1	65919	4-Chlorophenol	0.19 mg/kg	J	< PQL
SI B-1A	B12092040-001A	8270C	1	65919	Benzoic acid	< 0.33 mg/kg	UJ	MS
SI B-1A	B12092040-001A	8270C	10	65919	Triallate	14 mg/kg	J	MS
SI B-2A	B12092040-002A	8151A	10	65731	MCPA	< 40 mg/kg	UJ	CCV
SI B-2A	B12092040-002A	8260B	1	65875	1,2,4-Trimethylbenzene	0.11 mg/kg	J	< PQL
SI B-2A	B12092040-002A	8260B	1	65875	Acetone	0.98 mg/kg	J	< PQL
SI B-2A	B12092040-002A	8270C	1	65919	2,4,6-Trichlorophenol	0.12 mg/kg	J	< PQL
SI B-2A	B12092040-002A	8270C	1	65919	3,4-Methylphenol	0.13 mg/kg	J	< PQL
SI B-2AD	B12092040-003A	8151A	10	65731	MCPA	< 40 mg/kg	UJ	CCV
SI B-2AD	B12092040-003A	8260B	1	65875	1,2,4-Trimethylbenzene	0.095 mg/kg	J	< PQL
SI B-2AD	B12092040-003A	8260B	1	65875	1,3,5-Trimethylbenzene	0.026 mg/kg	J	< PQL
SI B-2AD	B12092040-003A	8270C	1	65919	2,4,6-Trichlorophenol	0.15 mg/kg	J	< PQL
SI B-2AD	B12092040-003A	8270C	1	65919	3,4-Methylphenol	0.078 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8260B	1	66522	1,2,4-Trimethylbenzene	0.77 mg/kg	J	MS
SI C-1A	B12102190-001A	8260B	1	66522	Isopropylbenzene	0.028 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8260B	1	66522	n-Propylbenzene	0.080 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8260B	1	66522	o-Xylene	0.067 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8270C	1	66587	2,4,6-Trichlorophenol	0.22 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8270C	1	66587	2-Chlorophenol	0.088 mg/kg	J	< PQL
SI C-1A	B12102190-001A	8270C	1	66587	Benzoic acid	< 0.33 mg/kg	UJ	MS
SI C-1A	B12102190-001A	8270C	1	66587	Triallate	3.9 mg/kg	J	MS
SI C-2A	B12102190-002A	8260B	1	66522	1,2,4-Trimethylbenzene	0.15 mg/kg	J	< PQL
SI C-2A	B12102190-002A	8260B	1	66522	1,3,5-Trimethylbenzene	0.058 mg/kg	J	< PQL
SI C-2A	B12102190-002A	8270C	1	66587	2,4,6-Trichlorophenol	0.31 mg/kg	J	< PQL

Continued on next page

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Sample ID	Lab ID	Method	Dilution	QC Batch	Analyte	Concentration	Qualifier	Reason Code
SI C-2A	B12102190-002A	8270C	1	66587	2-Chlorophenol	0.13 mg/kg	J	< PQL
SI C-2A	B12102190-002A	8270C	1	66587	2-Methylnaphthalene	0.067 mg/kg	J	< PQL
SI C-2A	B12102190-002A	8270C	1	66587	2-Methylphenol	0.082 mg/kg	J	< PQL
SI C-2A	B12102190-002A	8270C	1	66587	3,4-Methylphenol	0.28 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8260B	1	66522	Isopropylbenzene	0.098 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8260B	1	66522	m,p-Xylene	0.11 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8260B	1	66522	Toluene	0.11 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8260B	1	66522	Xylene, total	0.11 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	1-Methylnaphthalene	0.23 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	2,4,6-Trichlorophenol	0.23 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	2-Chlorophenol	0.10 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	2-Methylphenol	0.058 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	3,4-Methylphenol	0.17 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	Diallate	0.24 mg/kg	J	< PQL
SI C-3A	B12102190-003A	8270C	1	66587	Phenol	0.29 mg/kg	J	< PQL
SI C-4A	B12102190-004A	8260B	1	66522	1,2,4-Trimethylbenzene	0.13 mg/kg	J	< PQL
SI C-4A	B12102190-004A	8260B	1	66522	1,3,5-Trimethylbenzene	0.047 mg/kg	J	< PQL
SI C-4A	B12102190-004A	8270C	1	66587	2,4,6-Trichlorophenol	0.26 mg/kg	J	< PQL
SI C-4A	B12102190-004A	8270C	1	66587	2-Chlorophenol	0.17 mg/kg	J	< PQL
SI C-4A	B12102190-004A	8270C	1	66587	Phenol	0.16 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	4-Isopropyl toluene	0.064 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	Isopropylbenzene	0.075 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	m,p-Xylene	0.063 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	o-Xylene	0.16 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	sec-Butylbenzene	0.037 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	Toluene	0.044 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8260B	1	66522	Xylene, total	0.063 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8270C	1	66587	1-Methylnaphthalene	0.27 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8270C	1	66587	2,4,6-Trichlorophenol	0.26 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8270C	1	66587	Diallate	0.21 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8270C	1	66587	Di-n-octylphthalate	0.16 mg/kg	J	< PQL
SI C-5A	B12102190-005A	8270C	1	66587	Phenol	0.098 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8260B	1	66522	1,3,5-Trimethylbenzene	0.19 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8260B	1	66522	n-Propylbenzene	0.079 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8260B	1	66522	o-Xylene	0.046 mg/kg	J	< PQL

Continued on next page

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

Sample ID	Lab ID	Method	Dilution	QC Batch	Analyte	Concentration	Qualifier	Reason Code
SI C-6A	B12102190-006A	8270C	1	66587	2-Chlorophenol	0.22 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8270C	1	66587	2-Methylnaphthalene	0.067 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8270C	1	66587	2-Methylphenol	0.070 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8270C	1	66587	3,4-Methylphenol	0.16 mg/kg	J	< PQL
SI C-6A	B12102190-006A	8270C	1	66587	Phenol	0.27 mg/kg	J	< PQL
SI C-7A	B12102190-007A	8270C	1	66587	2,4,6-Trichlorophenol	0.22 mg/kg	J	< PQL
SI C-7A	B12102190-007A	8270C	1	66587	2-Chlorophenol	0.23 mg/kg	J	< PQL
SI C-7A	B12102190-007A	8270C	1	66587	2-Methylphenol	0.12 mg/kg	J	< PQL
SI C-7A	B12102190-007A	8270C	1	66587	3,4-Methylphenol	0.12 mg/kg	J	< PQL
SI C-7A	B12102190-007A	8270C	1	66587	Phenol	0.20 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8260B	1	66522	Ethylbenzene	0.040 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8260B	1	66522	Methylene chloride	0.042 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8260B	1	66522	sec-Butylbenzene	0.090 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8260B	1	66522	Toluene	0.097 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8270C	1	66587	2-Methylphenol	0.22 mg/kg	J	< PQL
SI C-8A	B12102190-008A	8270C	1	66587	3,4-Methylphenol	0.12 mg/kg	J	< PQL
SI C-9A	B12102190-009A	8270C	1	66587	2-Chlorophenol	0.11 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8260B	1	66522	1,3,5-Trimethylbenzene	0.17 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8260B	1	66522	Isopropylbenzene	0.028 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8260B	1	66522	n-Propylbenzene	0.083 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8260B	1	66522	o-Xylene	0.036 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8260B	1	66522	Toluene	0.026 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8270C	1	66587	2-Methylphenol	0.28 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8270C	1	66587	4-Chlorophenol	0.32 mg/kg	J	< PQL
SI C-10B	B12102190-010A	8270C	1	66587	Phenol	0.077 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8260B	1	66522	1,3,5-Trimethylbenzene	0.13 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8260B	1	66522	n-Propylbenzene	0.061 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8260B	1	66522	o-Xylene	0.028 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8270C	1	66587	4-Chloro-2-methylphenol	0.29 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8270C	1	66587	4-Chlorophenol	0.28 mg/kg	J	< PQL
SI C-10BD	B12102190-011A	8270C	1	66587	Phenol	0.065 mg/kg	J	< PQL
SI C-11B	B12102190-012A	8151A	10	66758	2,4-D	0.54 mg/kg	J	RPD
SI C-11B	B12102190-012A	8260B	1	66522	1,3,5-Trimethylbenzene	0.092 mg/kg	J	< PQL
SI C-11B	B12102190-012A	8260B	1	66522	n-Propylbenzene	0.053 mg/kg	J	< PQL

Continued on next page

**Table of Qualified Analytical Results**  
**Loveland Products, Inc. – Billings Surface Impoundment Excavation**  
**Soil Samples**  
**Energy Laboratories, Inc. Laboratory Reports (as listed)**  
**August - October 2012**

**Reason Codes:**

< PQL - concentration reported is  $\geq$  the method detection limit but is < the practical quantitation limit/reporting limit

CCV – continuing calibration outlier, demonstrated analytical system bias

MS - matrix spike recovery outlier; indicated or confirmed matrix interference

RPD - relative percent difference between laboratory duplicates (or spiked duplicates) exceeds QC limits; laboratory precision outlier

SUR - surrogate spike recovery outlier; indicated or confirmed matrix interference