
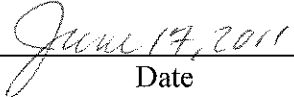


INTERIM SITE CHARACTERIZATION AND FIELD WORK REPORT UTICA MINE CAMP DEERING, ALASKA

UTICA MINE CAMP
ADEC FILE NUMBER: 510.38.002
DEERING, ALASKA

This Site Characterization Report has been developed in compliance with the provisions of 18 AAC 75 *Oil and Hazardous Substances Pollution Control Regulations, Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances*, The Site Characterization and Reporting Guidance for Investigation of Contaminated Sites, and the 2010 Draft Field Sampling Guidance.

COMMITMENT TO IMPLEMENT THE ABOVE SAMPLING AND ANALYSIS PLAN		
 Travis/Peterson Environmental Consulting, Inc. Project Manager	Signature	 Date
NANA Regional Corporation, Inc. Owner	Signature	Date

**UTICA MINE CAMP
INTERIM SITE CHARACTERIZATION AND FIELD WORK REPORT**

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ACRONYMS AND ABBREVIATIONS

AAL	Alaska Analytical Laboratory
ADEC	Alaska Department of Environmental Conservation
AK	Alaska
BTEX	benzene, toluene, ethylbenzene, xylene compounds
bgs	below ground surface
CY	cubic yards
DRO	diesel range organic compounds
EPA	United States Environmental Protection Agency
ft	feet
GRO	gasoline range organic compounds
lbs	pounds
mg/kg	milligrams per kilogram
RCRA	Resource Conservation and Recovery Act
RRO	residual range organic compounds
TCLP	total colloid leach procedure
TPECI	Travis/Peterson Environmental Consulting, Inc.

1.0 INTRODUCTION

Travis/Peterson Environmental Consulting Inc. (TPECI) presents the following site characterization report for the Utica Mine Camp, located approximately 20 miles inland from Deering, Alaska along the Inmachuk River drainage(64°48'45.30"N, 147°44'37.39"W, NAD 83), (Figure 1, Appendix A). The following report discusses closing the monofill landfill and completion of interim site characterization of the mining camp. Recommendations for remediation are provided in each section discussing areas that were characterized during 2010.

1.1 PROJECT OBJECTIVES

The scope of work for this project included (1) completing and closing the monofill; and (2) continuing to characterize soil contamination in known contaminated areas within the mine camp industrial area. The purpose for characterization is to obtain additional soil data in areas deemed contaminated during the original site investigation conducted by TPECI personnel. The Alaska Department of Environmental Conservation (ADEC) requested additional sampling be completed in several areas within the mine camp to better determine the contaminant load in surface soils within the mine camp and ultimately to determine possible remediation or disposal options for metals and petroleum-contaminated soils.

2.0 SITE ENVIRONMENTAL HISTORY

2.1 SITE HISTORY

The former Utica Mine camp has been visited and characterized by two consulting firms a total of three times since 2005. Laboratory analysis confirmed the presence of petroleum-related contamination; primarily diesel range organics (DRO) and residual range organic (RRO) and metals contamination in soil. The areas of soil contamination are contained within structures such as the machinist shop dirt floor and other buildings in the lower camp industrial area and smaller stained areas immediately outside these buildings.

TPECI personnel did not observe gross contaminants leaving the site or entering any water bodies near the site during any of the several visits made to the Utica Mine camp since 2007. These observations have been confirmed through analytical sampling discussed in detail in this report. The contaminated areas are isolated zones of soil contamination and are a direct result of past activities relating to the greater mining activity within the Inmachuk River basin since the early 1900's.

During the 2007 site reconnaissance, TPECI personnel completed a thorough inspection of all mining equipment in the mine camp and along the road leading up to the camp to determine where contaminant concerns were located. Each building in the former mine camp was also thoroughly inspected. Samples of building materials were collected and analyzed by a laboratory for asbestos and lead content.

After a thorough ground inspection was completed, TPECI personnel sampled those areas visually identified as having petroleum impacts, and based on their historic use, to determine what types of contamination existed and the relative magnitude of each. The upper camp area that contained residential cabins had samples collected for lead and asbestos content in the building materials. No soil samples were collected since the area was not impacted other than by

foot and vehicle traffic and inert metal and wood debris and litter found inside and outside these buildings was the primary concern.

TPECI Senior Scientist, Dr. Eddie Packee Jr., who has several years experience with mine land reclamation, permitting, and has worked in mines, confirmed that the equipment previously identified by SLR as grinding and pulverizing equipment (ball mills) used to crush ore and extract gold with mercury was in fact not used for that purpose at all. Two pieces of heavy mining equipment located near the mine were actually trommels or screens used solely to separate ore by size for later processing, much like a gravel mine would screen material to segregate the fines from the coarse material. An updated photo log addressing these corrections is presented in Appendix C. Technical information discussing the use of a trommel is presented in Appendix D.

TPECI personnel completed two subsequent site assessments with analytical sampling in 2007 and 2010. The scope of these assessments was based upon ADEC input. The site characterizations confirmed ADEC's 2005 observations with one exception.

The former Power Generating shed was originally thought to contain limited surface staining from power generators having been located directly on the ground surface inside this shed. TPECI personnel observed oily-stained ground inside the building and sampled the soil in 2007. During the 2008 contaminant removal effort, TPECI discovered a former waste dump buried underneath the former shed location and that contamination was not limited to the soil surface. This dump site was verbally confirmed in 2010 by a local Deering elder (Mr. Taylor Moto) who's father worked at the mine as a dredge operator.

Upon discovery of this dump and the contaminated soils contained within it, TPECI and NANA personnel continued removal action and placed all contaminated soil onto stockpile liners for storage and analytical sampling. To date, all other areas of contamination have been limited to the upper one to two feet of soil profile where much of the historic disturbance in this camp occurred. This excavation area has been the only cleanup conducted that was not previously discussed in the work plan.

The soil stockpiles generated at this location are still located in the mine camp and have been covered with heavier 20-mil polyethylene liner and weighted down to prevent it from blowing away. All stockpiled material was screened and sampled in 2010 in accordance with the Draft Field Sampling Guidance stockpile sampling specifications (ADEC, 2010).

Other than the excavation associated with the Power Generating Shed, there have been no deviations from work planned by TPECI for this site. The ADEC received work plans from TPECI prior to completing any sampling or cleanup work in 2007 and again in 2010. The Corrective Action Plan submitted to Mr. Jeff Brownlee was approved by him in a letter dated June 13, 2008; however, Mr. Brownlee recommended a broader characterization of the Inmachuk River drainage be included in the Utica Mine Camp cleanup efforts. NANA and TPECI agreed to implement the mining camp characterization and negotiate additional work with the ADEC at a later time. NANA understood that the limited site characterization would not achieve site closure.

The 2010 Site Characterization completed by TPECI personnel focused on elements outlined in the work plans submitted to ADEC and included the following action items:

- Placement of additional inert debris found in the mine camp into the permitted monofill;
- Placement and grading of cover material on top of the monofill in accordance with the monofill permit specifications;
- Soil sampling within the former Gold House building footprint and outside this immediate footprint for RCRA metals and TCLP metals analysis by EPA methods 6010 and 6020;
- Soil sampling within the machinist shop building footprint and outside the building footprint for residual range organic compounds analysis by method AK 103;
- Soil sampling within the proposed land farming location for metals analysis by EPA method 6020;
- Collection of surface water and sediment samples immediately downstream of the “settling pond” outfall and further downstream of the mine camp area in the Inmachuk River for laboratory analysis;
- Ensuring the soil stockpiles generated earlier in 2010 were adequately covered for long term storage; and
- Repackaging and transport of lead-acid batteries from the Utica Mine Camp down to the Deering, Alaska air strip for later transport and disposal.

Only the work items in the 2008 work plan and those planned in the 2010 work plan were implemented during the 2010 Site Characterization. The field tasks listed above are discussed fully in this report as is the analytical data and recommendations for cleanup and remediation at the site. Field tasks not completed in 2010 that were scheduled to be completed as per the amended work plan include burning of waste oils in a portable waste oil burner. The drums of waste oil are currently stored on site next to the machinist shop south bay. NANA will be shipping a waste oil heat recovery burner to the site in spring 2011 to burn the product and generate heat on site. There are 10 drums containing product to be burned with an estimated total volume of approximately 55 gallons.

2.2 PROJECT AND PROPERTY LEGAL DESCRIPTION

The former Utica mine camp is situated within the Kateel River Meridian, Range 021, Township 006, Section 24. It is located at 66° 04' 32" N latitude and 162° 43' 02" W longitude. The former mine camp is about 20 miles south of Deering, Alaska (Figure 1, Appendix A).

2.3 CURRENT OWNER AND RESPONSIBLE PARTY

NANA Regional Corporation is the current property owner. NANA Regional Corp. is currently the only confirmed responsible party for the Utica Mine site. ADEC acknowledges that other potentially responsible parties may exist which have been historically involved with the Utica Mine site.

2.4 2010 SITE CHARACTERIZATION

TPECI Senior Scientist Dr. Eddie Packee Jr. and Staff Scientist Lisa Krebs completed the Site Characterization sampling during the week of August 30, 2010. Field sampling was completed as described in the Final Amended Site Characterization Work Plan submitted to the ADEC the week of August 25, 2010. Work included collecting soil samples in locations identified by the ADEC as areas of concern within the industrial area of the camp and final disposal of collected inert waste and one drum of asbestos containing material recovered in 2008 into the monofill (Figure 2, Appendix A).

The monofill was covered and graded in September, 2010 and is no longer open to accept any waste generated on site. A closure letter has been drafted for submittal to the ADEC division of Solid Waste as part of the monofill closure requirements. TPECI will submit the closure letter to the Northern Region Solid Waste Program documenting the monofill.

2.4.1 Field Work

The site characterization activities completed in 2010 are listed below and described in detail in the following report sections:

- Soil sampling within the former Gold House building footprint and outside this immediate footprint for Resource Conservation and Recovery Act (RCRA) metals and Toxic Characteristic Leaching Procedure (TCLP) metals analysis by EPA methods 6010 and 6020;
- Soil sampling within the machinist shop building footprint and outside the building footprint for residual range organic compounds analysis by method AK 103;
- Soil sampling within the proposed land farming location for metals analysis by EPA method 6020;
- Collection of surface water and sediment samples immediately downstream of the "settling pond" outfall and further downstream of the mine camp area in the Inmachuk River for laboratory analysis;
- Ensuring the soil stockpiles generated earlier in 2010 were adequately covered for long term storage; and
- Repackaging and transport of lead-acid batteries from the Utica Mine Camp down to the Deering, Alaska air strip for later transport and disposal.

2.4.2 Soil Contaminant Characterization by Location

2.4.2.1 Gold House Soil Sampling

A total of 41 soil samples, including duplicates, were collected at this location and were analyzed for total metals by EPA 6010, TCLP metals by EPA 6020, mercury by EPA 7471 and TCLP mercury by EPA 7470. Metals analysis included arsenic, barium, chromium, cadmium, lead, selenium, silver, and mercury. Samples were collected at varying depths within a gridded area that encompassed the former building foot print as well as at four locations outside the immediate building footprint. Sample grid cell dimensions were approximately 10 feet by 10 feet and were premeasured using a 100 ft field measuring tape with 10 foot distance markers set to mark off grid cell boundaries. The total grid dimensions were 40 ft by 40 ft (Figure 3, Appendix A).

Sample depths ranged from ground surface, zero to one foot below surface, and one foot to two feet below ground surface. The range of total metals detected above ADEC cleanup levels is outlined on Figure 3. The range of TCLP metals detected above the ADEC cleanup levels is outlined on Figure 4 in Appendix A. Analytical results are presented in Tables 1 and 2 in Appendix B in milligrams per kilogram. Results were compared to the Under 40 Inch Zone, Migration to Groundwater cleanup levels in Table B1.

Arsenic

All arsenic levels detected at the Gold House were above ADEC cleanup levels. Concentrations of arsenic ranged from 18.2 mg/kg (sample 1A, 1-2 ft bgs) to 2,080 mg/kg (sample Gold House West 0-6 inches bgs). The cleanup level for arsenic is 3.9 mg/kg. The arsenic concentrations in this area were compared to those of samples collected in the proposed land farming zone in the upper mine camp. Because the levels detected in the land farm area samples are considered background concentrations, they provided a good baseline with which to compare the relative levels of arsenic contamination at the Gold House. Concentrations of arsenic in the soil at the proposed land farming area ranged from 8.0 mg/kg to 64.6 mg/kg.

There are distinct areas containing concentrations of arsenic at varying magnitudes, as shown on Figure 3 and in Table 1. The area outlined in red on this figure depicts the heaviest concentration of arsenic compared to the overall test area. The zone of heaviest impact at the Gold House closely resembles the footprint where spent tailings were disposed outside the former building. All of the arsenic concentrations detected were total arsenic. The TCLP arsenic levels at every sampling location were non-detect (Table 2, Figure 4).

Lead

Total lead concentrations exceeded the state cleanup level in 21 of 41 samples collected (Figures 3 and 4, Appendix A). The cleanup level for lead is 400 mg/kg. Lead concentrations in soil at the Gold House ranged from 12.3 mg/kg (sample 1A, 1 – 2 ft bgs) to 12,100 mg/kg (sample 3C, soil surface) (Tables 1 and 2, Appendix B).

Concentrations of TCLP lead were detected in eight of 41 samples above the 5.0 mg/L cleanup level. There were also eight additional samples that contained TCLP lead but all were below the 5.0 mg/L cleanup level. Samples 1C-Surface (primary and duplicate), 1C- 0 to 1 ft, 1D-Surface,

2C-Surface (primary and duplicate), and 3C- 0 to 1 ft and 1 ft to 2 ft all had RCRA concentrations of lead.

Mercury

Total mercury was detected above the state cleanup level in every sample collected except two. Gold House West was non-detect for total mercury and 2A-Surface had 0.95 mg/kg mercury which is below the state cleanup level of 1.4 mg/kg (Figures 1 and 2, Appendix B).

Concentrations of TCLP mercury were above the cleanup standard of 0.5 mg/L in five out of 41 samples. All other samples were non-detect for TCLP mercury. Samples 1D-Surface, 2C-Surface (duplicate), 2D-Surface, 3C-Surface, and Gold House West- 0 to 6 inches had concentrations of TCLP mercury that exceeded the cleanup standard. Based on these results the RCRA concentrations of mercury appear confined to the upper 6 inches of soil surface at the Gold House and appear in concert with the RCRA levels of lead detected in soil which occur within the footprint of spent tailings disposal (Figures 3 and 4, Appendix A).

Barium, Cadmium, and Chromium

Concentrations of barium and cadmium were detected below ADEC cleanup levels for total metals in soil and were non-detect in the TCLP method. Concentrations of chromium were detected and ranged from 9.6 mg/kg to 84.9 mg/kg which is above the state cleanup level of 25 mg/kg. Chromium was non-detect in the TCLP method. Analytical results are presented in Tables 1 and 2 in Appendix B.

Selenium and Silver

Concentrations of selenium and silver were also detected in the total metals analysis and ranged from non-detect to above cleanup standards. Selenium concentrations above ADEC cleanup level of 3.4 mg/kg ranged from 3.5 mg/kg to 9.0 mg/kg. Fourteen samples had detections of selenium above ADEC cleanup levels. Silver concentrations above the ADEC cleanup level of 11.2 mg/kg ranged from 11.7 mg/kg to 50.3 mg/kg. Eleven samples had detections of silver above the ADEC cleanup level. Selenium and silver were non-detect in the TCLP method.

Gold House Summary

The vertical and horizontal extents of contaminants of concern have been fairly well documented through repeated sampling events. Lead and mercury are the primary contaminants of concern within the former Gold House building footprint (Figure 4, Appendix A). Concentrations of TCLP mercury were highest in the surface material (sampling locations 1D, 2C, and 3C.) (Table 1, Appendix B).

The majority of TCLP lead contamination was present in surface soils. TCLP lead was detected at several sample locations (1C, 1D, 2C, and 3C) in surface soils and at the 0 to 1 foot and 1 to 2 foot sampling depths in some locations.

Total lead contamination was highest in surface soils but was also present at depths below ground surface down to two feet deep. Total mercury contamination was prevalent throughout the sampling grid and at all sampling depths except in two samples Gold House West and sample 2A-surface. However, the other samples collected at location 2A at depths 0 to 1 foot and 1 to 2 feet had concentrations of total mercury that exceeded the ADEC cleanup level of 1.4 mg/kg.

Recommendations for Remediation

Sample locations 4A and 3C did not have soil samples collected in their grid cells due to the presence of heavy metal and wood demolition debris. Sample grid cell 3D is assumed to contain contaminated soil since it is within the area of greatest impact from tailings disposal. Sample grid cell 4A could also contain mercury and lead levels above cleanup standards. Once the debris can be mechanically removed from this location TPECI personnel can collect analytical samples to confirm the presence or absence of metals contamination at this location.

The contamination in the former Gold House area will be excavated. A Niton XRF field screening instrument will be used to delineate the furthest extent of mercury, lead, and arsenic contamination present above ADEC cleanup levels during contaminant removal. The area delineated as having TCLP concentrations of lead and mercury will be excavated first. TPECI will segregate this material to limit the amount of excavated material requiring disposal at a TSD. TPECI recommends burying the remainder of the material contaminated on a total metals basis. All contaminated materials will be segregated based upon field Niton screening values and stockpiled on a 10-mil polyethylene liner and sampled in accordance with the Draft Field Sampling Guidance (ADEC, 2010). Stockpile characterization sampling will determine the final concentrations of contamination and ultimately the disposal method for each stockpile.

2.4.2.2 Machinist Shop Dirt Floor Sampling

A total of 33 soil samples were collected from inside and outside the machinist shop in the soil surface, from 0 to 1 ft bgs, and from 1 ft to 2 ft bgs in most sample grid locations (Figure 5). Some sample grid cells could not be sampled due to obstructions like floor boards or heavy equipment that obstructed access. Concentrations of RRO were detected above the state cleanup level in six out of 33 samples. Overall concentrations of RRO ranged from non-detect to 45,300 mg/kg.

The sampling grid locations that contain the heaviest concentrations of RRO contamination are located in N2 East – Surface, N2 West – 0 to 1 ft and 1ft to 2ft increments, and MSN2B at the 0 to 1 ft sampling increment. All of these sample locations were located inside the building. Sample locations located outside the building had detectable levels of RRO, but all were below the ADEC cleanup level (Table 3, Appendix B).

Relatively high concentrations of RRO existed within the gridded sampling area inside of the machinist shop except for area N1 West and N1 East where sample results were non-detect. Sample grid area N1 was located in the south bay of the building. The N-series of samples were all collected in this shop bay and the MSN-series of samples were collected in the main, central, shop bay. Sample location MSN-2C did not have a sample collected by TPECI, as it had been previously sampled in 2007.

Recommendations for Remediation

Because the contamination found at this site is relatively immobile, TPECI recommends that for the short-term it be left in place. If the building deteriorates any further TPECI recommends that the owner have it torn down. The equipment inside this building is very old and may be worth salvaging from a historic standpoint. This should be completed first prior to demolishing the structure. If the structure is demolished, TPECI recommends burning the wood in place to raise the ground temperature sufficiently to thermally remediate persistent hydrocarbons in the soil.

Otherwise the material could be bladed out onto the road in the camp and allowed to naturally attenuate on site.

2.4.2.3 Proposed Land Farming Location

A total of 16 soil samples were collected from a sampling grid measuring 80 feet by 20 feet (Figure 6, Appendix B). One sample per 10 ft by 10 ft gridded area was collected from the upper two inches of material at this location. It is important to note that TPECI personnel met refusal at this sampling area at this depth since the material is very compacted.

The samples collected from this location were analyzed for total metals by EPA Method 6020 and for mercury by EPA Method 7471. The list of metals in the analytical method included arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Arsenic was the only metal detected at all sample locations above the ADEC cleanup standard of 3.9 mg/kg (Table 4, Appendix B). Mercury was detected in three locations at concentrations below the cleanup level of 1.4 mg/kg. All other sample locations were non-detect for mercury.

Lead was detected in every sample collected and all concentrations were below the ADEC cleanup level of 400 mg/kg. The remaining metals in the analytical suite were all detected at this site, but all concentrations were below cleanup standards. The metals concentrations in this sampling area appear to be representative of background concentrations which are the result of metals present in the highly mineralized parent material. No ground surface staining or other unusual characteristics were observed in this area that would indicate the ground was contaminated. Characterization sample results indicate that this location is suitable for land spreading petroleum-contaminated soils.

2.4.2.4 Alternate Land Farming Location

TPECI personnel collected four additional soil samples at an alternate potential land farming location near the permitted monofill (Figure 2, Appendix A). The sample location is located immediately downhill and east of where the permitted monofill is located. The samples were labeled Alternate SE, SW, NE and NW and all were analyzed for total metals, including mercury, by EPA Methods 6020 and 7470. Analytical results for these four samples are presented in Table 4 (Land Farming Area Soil Samples) in Appendix B. All four samples had concentrations of arsenic above the ADEC cleanup level of 3.9 mg/kg.

The locations of these samples are depicted on Figure 2 and are adjacent to the permitted monofill. TPECI personnel sampled to determine whether this location was suitable as a possible land farming location for the petroleum-impacted soils contained within the stockpiles on site.

Concentrations of barium, cadmium, chromium, lead, and selenium were detected in all four samples below the ADEC cleanup levels. Silver and mercury were non-detect in all four samples. Since this area is immediately adjacent to the monofill TPECI does not recommend land spreading contaminated soil near the monofill to avoid impacting the monofill cover.

2.4.2.5 Surface Water and Sediment Characterization in the Inmachuk River

Two locations were selected by TPECI personnel for collecting surface water and sediment samples. The upstream sample was located immediately downstream of the outfall of the settling pond, which is situated to the east and slightly south, or upstream, of the mine camp (Figure 2, Appendix A). The downstream sample was located approximately 1,500 ft downstream of the upstream sample location.

The surface water and sediment samples were analyzed for total metals by EPA Method 6020 and mercury was analyzed using EPA Method 7471. Surface water and sediment analyses were also completed for DRO/RRO by AK 102/103 and for GRO/BTEX by EPA8021/AK101.

The surface water samples were non-detect for DRO, GRO, and all BTEX parameters however RRO was detected just above the MDL and below the reporting limit (Tables 5, 6, and 7, Appendix B). The RRO values were J-flagged as estimated values and not necessarily considered a true hit representing actual contamination in the matrix. Metals concentrations in surface water were mostly non-detect, except for low detections of barium and arsenic detected below cleanup standards.

The sediment samples were non-detect for GRO and BTEX parameters. However, low detections of DRO and RRO were J-flagged as estimated results, and were detected in both upstream and downstream sediment sampling locations.

The metals analysis of sediment samples indicated detectable concentrations of barium, cadmium, chromium, selenium, and lead. Silver and mercury were non-detect in both sediment samples. Arsenic was detected above the ADEC cleanup level at concentrations of 29.7 mg/kg and 29.9 mg/kg in the upstream and downstream sample locations respectively. TPECI considers these levels representative of background concentrations due to the abundance of arsenopyrite throughout the Inmachuk River basin.

Concentrations of metals in the surface water samples were either non-detect or very low detections below cleanup levels. Arsenic and barium were the only metals detected in both surface water samples. Concentrations were below cleanup standards.

The former mine camp and historically mined portions of the Inmachuk River basin do not appear to be contributing any levels of contamination to this drinking water source or to the sediment. Concentrations of metals in the surface water and sediment of the Inmachuk River appear to be consistent with those background levels detected in non-contaminant impacted zones of the mine camp.

2.4.3 Soil Stockpiles

The contaminated soil stockpiles generated in June 2010 were inspected during the August 2010 site visit to ensure the material was adequately covered for long-term storage (Figure 2, Appendix A). An additional piece of 20 mil liner was placed over the largest stockpile in the lower camp area to replace an older cover torn by wind. The smaller stockpiles located in the upper camp were adequately covered. The liner material was in good condition. These stockpiles were sampled earlier in 2010. The results were reported to the ADEC in a letter report

dated July 22, 2010. Concentrations of DRO were detected above cleanup levels. TPECI still recommends land spreading this material for long term passive remediation at the proposed land farm location in the camp's uphill area.

2.4.4 Repackaging and Transport of Lead-Acid Batteries for Disposal

In 2010, the lead-acid batteries that had previously been recovered from the property and heavy equipment located on site were repackaged for shipment off site to a disposal facility. The batteries were packaged into polyethylene over pack drums and labeled per Alaska Department of Transportation specifications for hazardous materials transport. The eight drums of batteries were taken to the airstrip in Deering, Alaska and were flown to a disposal facility. The contents of each drum and their approximated weights are described in the table below. Photo documentation of the drums is provided in Appendix C.

Table 1. Battery Transport Drums

Drum Number	Approximated Weight	Contents
1	75 – 100 lbs	2 car batteries, 1 large equipment battery
2	75 – 100 lbs	2 car batteries, 1 large equipment battery (Caterpillar batt.)
3	50 - 75 lbs	2 large batteries
4	100 – 125 lbs	2 large batteries, 2 car batteries
5	50 – 75 lbs	3 large batteries
6	100 – 125 lbs	7 broken batteries
7	125 lbs	5 large batteries
8	50 lbs	2 batteries and parts
9	125 lbs	4 large batteries
10	75 lbs	Parts of batteries

2.4.5 One-time Use Permitted Monofill

In 2008, TPECI and NANA received authorization from the State of Alaska Department of Environmental Conservation Solid Waste Program to create a one-time use inert waste monofill at a location within the former Utica Mine camp so inert debris and building materials could be disposed on site. Site cleanup and contaminant removal were started in 2008 by TPECI and NANA personnel and the monofill was excavated. Due to inclement weather and equipment breakdowns, all cleanup work and contaminant removal planned for 2008 was rescheduled for the 2009 field season. Copies of both authorizations are presented in Appendix C along with a copy of the monofill closure letter report addressed to ADEC.

TPECI and NANA personnel mobilized to the site in June 2009 to resume field work and close the monofill by the original deadline of December 31, 2009. However, lack of heavy equipment prevented project completion.

In December 2009, TPECI personnel filed a request for an extension on NANA's behalf, to allow the monofill to remain open and also to inform the Solid Waste Program that work was

still ongoing at the site. The monofill closure extension was granted to NANA for the Utica Mine camp monofill permit. Cleanup of inert waste and debris was completed at the project site in September 2010. NANA personnel obtained the fill material necessary from a nearby gravel source to bury the remaining debris that had been added to the monofill and completely cover and grade the top of the monofill in accordance with the permit specifications. The monofill is no longer in use and has been closed in accordance with the permit authorization issued by ADEC Solid Waste Program.

3.0 LABORATORY ANALYTICAL SAMPLING

The analytical sampling that was outlined in the work plan submitted to ADEC for this project was completed by TPECI personnel in September, 2010. The following summarizes the numbers and types of samples collected at the site and the analytical methods used by the laboratories to obtain the required results for this project.

3.1 SAMPLING AND ANALYSIS FOR PETROLEUM RELATED COMPOUNDS

TPECI collected sediment samples from the Inmachuk River drainage for GRO/BTEX analysis by AK Method 101/EPA Method 8021. Sediment samples were also collected and analyzed for DRO/RRO by Alaska Method AK102/103. Soil samples collected at the Machinist Shop were all analyzed for RRO by AK 103. The samples were submitted to Alaska Analytical Laboratory (AAL) in North Pole, Alaska. AAL is an ADEC certified laboratory capable of analyzing soil and sediment samples for all the Alaska methods and EPA Method 8021 for BTEX compounds.

The following tables present the break down by analytical parameter of each matrix type that was analyzed and the quantity analyzed for this characterization. The numbers presented include any duplicate samples that were collected in the field. A detailed analysis of data quality, total numbers of duplicates collected, and any deviations from the work that was planned for this site is presented in the sections that follow.

Table 2 Petroleum Related Compounds Analysis of Soil

Analytical Method	Parameters	Matrix	Quantity of Samples	Analytical Lab
EPA 8021	Benzene, Toluene, Ethylbenzene, and Xylene	Sediment	2	Alaska Analytical Laboratory
AK 101	Gasoline Range Organic Compounds	Sediment	2	Alaska Analytical Laboratory
AK 102	Diesel Range Organic Compounds	Sediment	2	Alaska Analytical Laboratory
AK 103	Residual Range Organic Compounds	Soil	38	Alaska Analytical Laboratory

Table 3 Petroleum Related Compounds Analysis of Surface Water

Analytical Method	Parameters	Matrix	Quantity of Samples	Analytical Lab
EPA 8021	Benzene, Toluene, Ethylbenzene, and Xylene	Surface water	2	Alaska Analytical Laboratory
AK 101	Gasoline Range Organic Compounds	Surface water	2	Alaska Analytical Laboratory
AK 102	Diesel Range Organic Compounds	Surface water	2	Alaska Analytical Laboratory
AK 103	Residual Range Organic Compounds	Surface water	2	Alaska Analytical Laboratory

3.2 SAMPLING AND ANALYSIS FOR METALS

TPECI personnel collected sediment, surface water, and soil samples for a variety of metals analyses listed in the following tables. The TCLP methods were only required for the Gold House characterization area. Therefore the numbers of each analytical parameter in the table below will not be exactly the same for each method. Metals analyses were performed by Pace Analytical Laboratory in Seattle, Washington. All metals samples were accepted by AAL and logged into the sample tracking system by the lab manager and repackaged for shipment via Alaska Airlines Goldstreak to Seattle. Pace picked up the samples from Goldstreak once they arrived.

Table 4 Metals Analysis of Soil and Sediment

Analytical Method	Parameters	Matrix	Quantity of Samples	Analytical Lab
EPA 6020 Total Metals	Arsenic, barium, cadmium, chromium, lead, selenium, silver	Sediment and soil	63	Pace Analytical Laboratory
EPA 6010 TCLP Metals	Arsenic, barium, cadmium, chromium, lead, selenium, silver	soil	41	Pace Analytical Laboratory
EPA 7471 Total Mercury	Mercury	Sediment and soil	63	Pace Analytical Laboratory
EPA 7470 TCLP Mercury	Mercury	soil	41	Pace Analytical Laboratory

Table 5 Metals Analysis of Surface Water

Analytical Method	Parameters	Matrix	Quantity of Samples	Analytical Lab
EPA 6020 Total Metals	Arsenic, barium, cadmium, chromium, lead, selenium, silver	Surface water	2	Pace Analytical Laboratory
EPA 7471 Total Mercury	Mercury	Surface water	2	Pace Analytical Laboratory

3.3 LABORATORY RESULTS

Complete analytical results are presented in Appendix B in tables 1 through 6. The laboratory analytical reports from AAL and Pace are presented in Appendix B along with the completed laboratory data quality review checklists.

3.4 LABORATORY DATA QUALITY REVIEW

TPECI completed a thorough review of all laboratory data and the field sample collection procedures conducted by TPECI field personnel. The following discussion meets the criteria outlined in the ADEC's Quality Assurance Summary Requirements outlined in Technical Memorandum 06-002 dated October 9, 2006.

3.4.1 Data Quality Review

3.4.1.1 Laboratory Data

The analytical laboratory reports and their respective Laboratory Data Quality forms are presented in Appendix B. The following summarizes the data quality review and addresses any data quality issues and deviations from the field sampling plan.

3.4.1.2 Minimum Requirements for Laboratory Data Reports for Samples

The attached laboratory data reports meet the minimum requirements as set forth in the ADEC's Technical Memorandum 06-002, dated October 9, 2006. The details of these requirements are addressed in the reports contained in Appendix B.

3.4.1.3 Quality Assurance Summary Requirements

The following discussion consists of a review of each Quality Assurance Requirement as set forth in ADEC's Technical Memorandum 06-002 dated October 9, 2006 and incorporates discussion for both lab reports generated by AAL and Pace for this project.

Precision

- a. Field Duplicate(s) (1 per 10 samples per matrix)

TPECI personnel collected a total of seven (7) field duplicates during the 2010 site characterization. Three duplicates were collected at the Machinist Shop sampling area and analyzed for RRO by AK Method 103. A total of 33 field samples were collected at the Machinist Shop area not including duplicate samples. The three duplicate samples collected at this location meet the minimum field duplicate sampling requirements for this particular sampling location.

A total of four field duplicates were collected from the former Gold House sampling area during this site characterization. A total of 37 field samples were collected at this sampling area so the four field duplicates exceed the minimum field duplicate sample collection requirement for this location.

A total of 16 field samples were collected at the proposed land farming location in the upper camp. An additional four soil samples were collected at an Alternate Proposed Land Farming location near the permitted monofill area. A total of 20 samples were collected for metals analysis. There were no field duplicates collected at either of the two proposed Land Farming locations during this site characterization. Because an additional duplicate was collected at the Gold House, the proposed land farming locations should have generated one additional duplicate analysis for metals based on the total number of samples collected at the project site. The combined sampling for metals at the former Utica Mine camp site characterization should have had a total of six (6) field duplicates for the total metals analyses and four (4) duplicates for the TCLP metals analyses. The field sampling program was short by two field duplicates for the total metals analyses.

b. Laboratory Sample Duplicates and/or Spike Duplicates (Laboratory Control Samples or Matrix Spikes)

Upon completion of data quality review of both the AAL lab report and the Pace lab report, the requisite LCS and MS/MSD samples were analyzed for all analytical methods required for this sampling program. For additional detail on laboratory quality control analyses refer to the completed Laboratory Data Quality forms in Appendix B.

Accuracy

a. Laboratory QC Samples Percent Recoveries– Spikes (Laboratory Control Samples and/or Matrix Spikes)

For AAL report number 1009003 all LCS recoveries were within acceptance criteria. See the attached Laboratory Data Review Checklist in Appendix B for specific details. For Pace report number 254835 LCS recoveries were within acceptance criteria. There were a number of MS/MSD recoveries that were outside the acceptance criteria but the analytical batch was accepted based upon the LCS quality control sample results. For complete details on this issue, refer to the lab reports and associated data quality review forms presented in Appendix B.

b. Surrogate Percent Recoveries

For AAL report number 1009003 surrogate recoveries were within acceptance range for the organic analyses on some of the samples. However, several samples were flagged due to low surrogate recoveries. This was directly related to the dilution factor used on the RRO samples and the affected samples were flagged with an S01 note which is defined in Table 3 notes. The low surrogate recoveries in the RRO samples is not anticipated to affect the data quality. The metals field samples were not spiked with surrogates as the organic samples were. However, the percent recoveries for spiked quality control samples is discussed in detail in Appendix B.

Representativeness

a. Degree to which data characterizes actual site conditions

The analytical results from AAL report number 1009003 for AK 103 RRO analyses adequately characterize the site conditions. Additional samples analyzed for AK 102, AK 101/EPA 8021 also adequately characterize site conditions.

The analytical results from Pace report number 254835 for total metals and TCLP metals, including mercury, adequately characterize the contaminants of concern at the site and background metals concentrations in the non-impacted zones of the project site including the proposed land farming areas.

b. Consistency with Conceptual Site Model (CSM) and Data Quality Objectives in the work plan/sampling and analysis plan.

The sampling results from are consistent with the data quality objectives outlined in the 2010 Site Characterization Work Plan for this site. The conceptual site model indicates there are no off site receptors to the contaminants identified at the project site. The field sampling program and laboratory analyses performed in 2010 are consistent with these observations.

Comparability (if applicable)

a. Field Screening vs. laboratory data correlation

Field screening and observations made at the project site since characterization began in 2007 directly correlate to the analytical data collected in the 2010 and prior Site Characterizations completed by TPECI personnel.

b. Standard methods, procedures, quantitation units, and reporting formats between lab reports and between laboratories, if more than one used.

There was no crossover of parameters between both labs. AAL was responsible for fuels related analyses and Pace responsible for metals parameters only. All laboratory quality control criteria were followed specific to the parameters analyzed by each lab.

Completeness

a. Number of valid (usable or non-rejected) results vs. the total number of results

All laboratory results are considered valid, usable analytical results and are representative of site conditions and are recommended for the site decision making process by TPECI personnel.

b. 85% minimum completeness goal per UST Procedures Manual

Since this project was not a standard UST removal project, TPECI personnel completed site characterization sampling in accordance with the Draft 2010 Field Sampling Guidance. The sampling program implemented for this project site was more than adequate to characterize the areas in question containing previously characterized contaminants of concern.

Sensitivity

The sensitivity requirements for analyses required for this project were met by both analytical laboratories.

a. Limits of detection (MDL or PQL) less than the regulatory cleanup levels and/or project required goals.

The method detection limits and practical quantitation limits specified by the State of Alaska for each method used by AAL and Pace laboratories were met during sample analysis.

b. Blank results (Trip Blank and Method Blanks) less than PQL

All method blank and trip blank results were non-detect for this project.

Other Analytical Issues

Some of the sample results reported in AAL work order 1009003 are considered biased low due to matrix effect. Sample 1009003-040B which was analyzed under SW5035 for AK101/8021 had additional methanol added due to significant reduction in free flowing methanol added in the field. Per AAL report notes the sample matrix indicates there may be a high concentration of magnesium and/or calcium carbonate in acidic soil. When methanol is added to the sample it effervesces; expands and reacts with and/or absorbs the surrogates when the chemical reaction occurs. Consequently, the amount of free flowing methanol is greatly reduced. The samples with this matrix effect have been flagged S04 in the report.

TPECI reviewed this report for the S04 data flag and found that only one sample was given this data flag. Sample number 1009003-040B which was a stream sediment sample collected in the Downstream sampling location in the Inmachuk River. The Upstream sample location results did not receive this data flag. Final results for GRO/BTEX on the Downstream sediment sample should be considered biased low since additional methanol was needed to complete sample extraction. The remaining soil sample results in the 1009003 report are not considered biased low.

Sample prep comments were also added for some of the SW3545 (AK102/103) analyses. Samples 1009003-010A, 026A, 029A, and 010A were all noted as not extracting well. The lab notes indicated that the soil was very hard and only 1 to 2 mL could be extracted instead of the usual 50mL. Or as in the case of sample number 007A only half the normal amount could be extracted for analysis. The final analytical results do not appear to be affected by the low extraction since the results were above the MCL and the analytical results correlate to soil impacts observed in the field.

Overall data quality in this analytical report is good except for the Downstream sediment sample (1009003-040B) which is considered biased low due to the addition of methanol by the laboratory.

4.0 DEVIATIONS FROM THE WORK PLAN

There was one deviation from the proposed site characterization work outlined in the Final Amended 2010 Site Characterization Work plan. TPECI personnel ran out of sampling jars and were unable to collect the additional duplicate samples for the metals parameters at the two proposed land farming locations. Since these locations were not of as great a concern as the Gold House and the Machinist Shop in terms of adequately delineating contamination that was known to be present, duplicate samples were forgone at these two locations. However, there were an adequate number of field duplicates collected at the two contaminated areas delineated in 2010.

Duplicate samples were not collected in the Inmachuk River surface water and sediment sampling locations. Primary samples only were collected at the upstream and downstream sample locations.

There were no other deviations from the work plan for the 2010 Site Characterization.

5.0 CONCLUSIONS AND RECOMMENDATIONS

TPECI personnel completed adequate site characterization of known contaminated areas of concern within the former Utica Mine camp. Two locations, the Machinist Shop, and the former Gold House have petroleum and metals related contamination present above ADEC cleanup levels in soil. The RCRA metals contamination at the former Gold House must be excavated during the 2011 field season and stockpiled on a 10-mil polyethylene liner and sampled prior to final disposal. The remaining metals contaminated tailings at the former Gold House must be cleaned up by excavating, stockpiled on a 10-mil polyethylene liner, and characterizing to determine the final disposal method. A Thermo-Fischer Scientific Niton x-ray fluorescence field instrument will be used to monitor the cleanup process and determine the limits of excavation for this material. The quantity of RCRA metals contamination at this location is anticipated to be approximately 25 to 50 cubic yards (CY). The quantity of heavy metals contaminated soil that is not considered RCRA hazardous waste is anticipated to be less than 100 CY. If the material is segregated during excavation, the amount of RCRA waste that must be disposed at a TSD facility outside Alaska can be minimized, thus minimizing costs and avoiding mixing the two classes of metals contamination. TPECI proposes that the remainder of metals contaminated soil be buried on site in a liner which would contain the material and prevent it from coming into contact with surface water runoff. Ultimately soil stockpile characterization will determine the disposal methods for each class of metals contaminated soil. Regardless of where the material is generated, the soil stockpile characterization results are the final determining factor for metals contaminated soil disposal.

The Machinist Shop has limited areas of RRO contamination that are relatively immobile, in their current location, these areas are not exposed to surface runoff, as they are contained inside the building. TPECI recommends for the near term that this contamination be left in place because it is not a hazardous waste. In the event the structure fails or is demolished, the wood building materials can be burned under a burn permit. Burning the building on site will raise the soil temperature significantly, thus enhancing natural attenuation of persistent hydrocarbons in the soil. Any remaining areas of surface staining can be raked out or graded to increase the surface area exposed to the elements and speed up the natural attenuation process. The quantity of contaminated material anticipated at this site is less than 25 cy and could easily be treated on site by the means described above.

The proposed land farming locations that were sampled had detectable levels of metals and arsenic concentrations above the ADEC cleanup level. Because the arsenic concentrations were consistent across the two sites and the site did not appear to have any impacts to indicate it was contaminated, TPECI recommends this area for land spreading of the DRO contaminated soil generated in 2008 and 2010 at the former Power Generating Shed excavation. TPECI does not recommend using the alternate land farming location closer to the monofill to avoid any potential impacts to the monofill cover by heavy equipment.

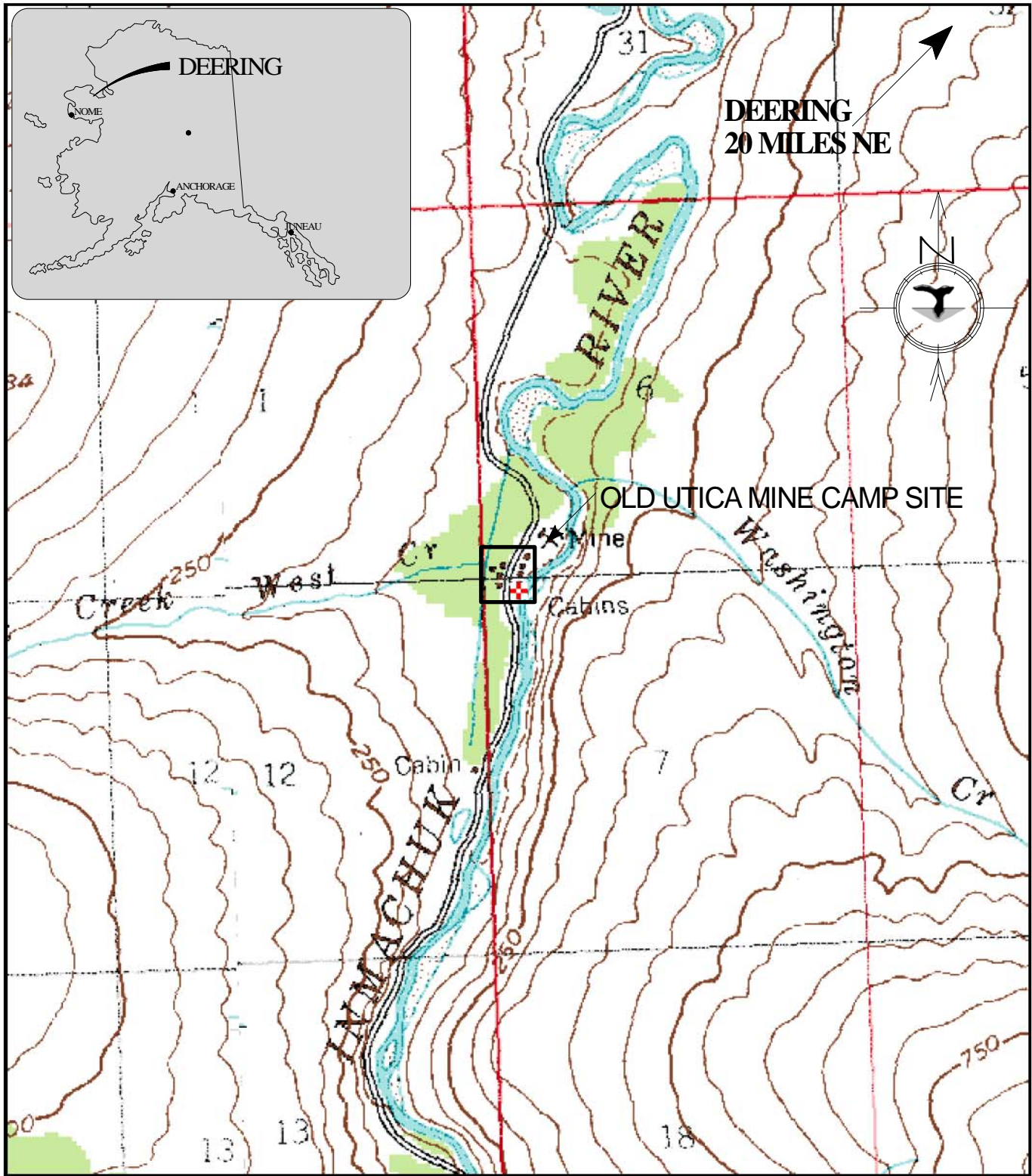
The permitted monofill was closed in September, 2010 in accordance with the permit specifications. The only item remaining to be completed at the monofill is to apply revegetation seed mix. This can be accomplished during the 2011 field season. The cover material appeared to have enough fines in it to support seed germination. A final letter reporting the location, description of the monofill and its contents addressed to the ADEC Solid Waste Program is provided in Appendix D.

Building number 21 (SLR, 2005) was the former Power Generating Shed. The structure was demolished in 2008 and all demolition debris was buried in the monofill. Once all debris was removed, excavation of the stained surface soils began. During the 2008 excavation attempt, the heavy equipment broke down and all contaminant removal had to be halted. It was evident that even at three feet below ground surface, this area was still contaminated. The small excavation was sampled to confirm the presence and types of contamination in the soil so an adequate plan for removal could be emplaced for the 2009 season. Confirmation samples collected by TPECI personnel in 2008 confirmed the presence of GRO, DRO, and RRO compounds in soil. All concentrations were below their respective cleanup levels.

In 2010, TPECI and NANA personnel revisited this excavation to see if clean limits could be reached. The excavation resulted in approximately 500 cy of DRO impacted soils, metal debris, and one drum full of hydraulic oil were excavated from this area which ultimately measured 25 ft by 25 ft by 8 ft deep. Excavation continued until frozen ground was reached. Field screening and confirmation sampling were completed by TPECI personnel in accordance with the 2010 Draft Field Sampling Guidance for excavated areas. The excavation had clean limits except in one sampling location along a sidewall where overspill from the excavator had accumulated. TPECI Staff Scientist, Ms. Shippey, dug into this sidewall more than the requisite 12 inches to reach undisturbed material. However, the material above the collection point frequently cascaded down over the area where sample collection was to take place. The one sample location exceeding the cleanup level is likely the result of over spill material from the excavation process. The excavation bottom was clean. The stockpiles generated from this excavation remain covered at the site. TPECI recommends that if no field work is performed in 2011 then these stockpiles need to be inspected by NANA or TPECI personnel to verify the integrity of the cover material and apply new plastic sheeting where necessary. If field work continues in 2011 TPECI proposes that the land spreading area be used in the upper camp to spread this material and allow it to naturally attenuate.

Once this report is finally accepted by ADEC a work plan can be developed to address the soil land spreading and long term sampling of that material and any other outstanding environmental issues at the camp.

APPENDIX A
FIGURES



DEERING
20 MILES NE

OLD UTICA MINE CAMP SITE

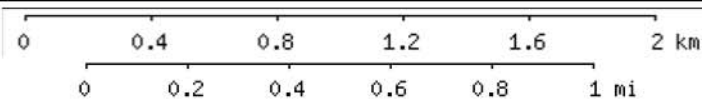
Mine
Cabins

West Cr

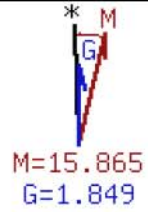
Cabin

IMMACHUK RIVER

Washington Cr



65° 56' 34"N, 162° 58' 25"W (NAD27)
USGS Bendeleben D-2 (AK) Quadrangle
 Projection is UTM Zone 3 NAD83 Datum



TRAVIS/PETERSON ENVIRONMENTAL CONSULTING, INC.
 329 2ND STREET
 FAIRBANKS, ALASKA 99701

NANA REGIONAL CORPORATION, INC.
 UTICA MINE CAMP

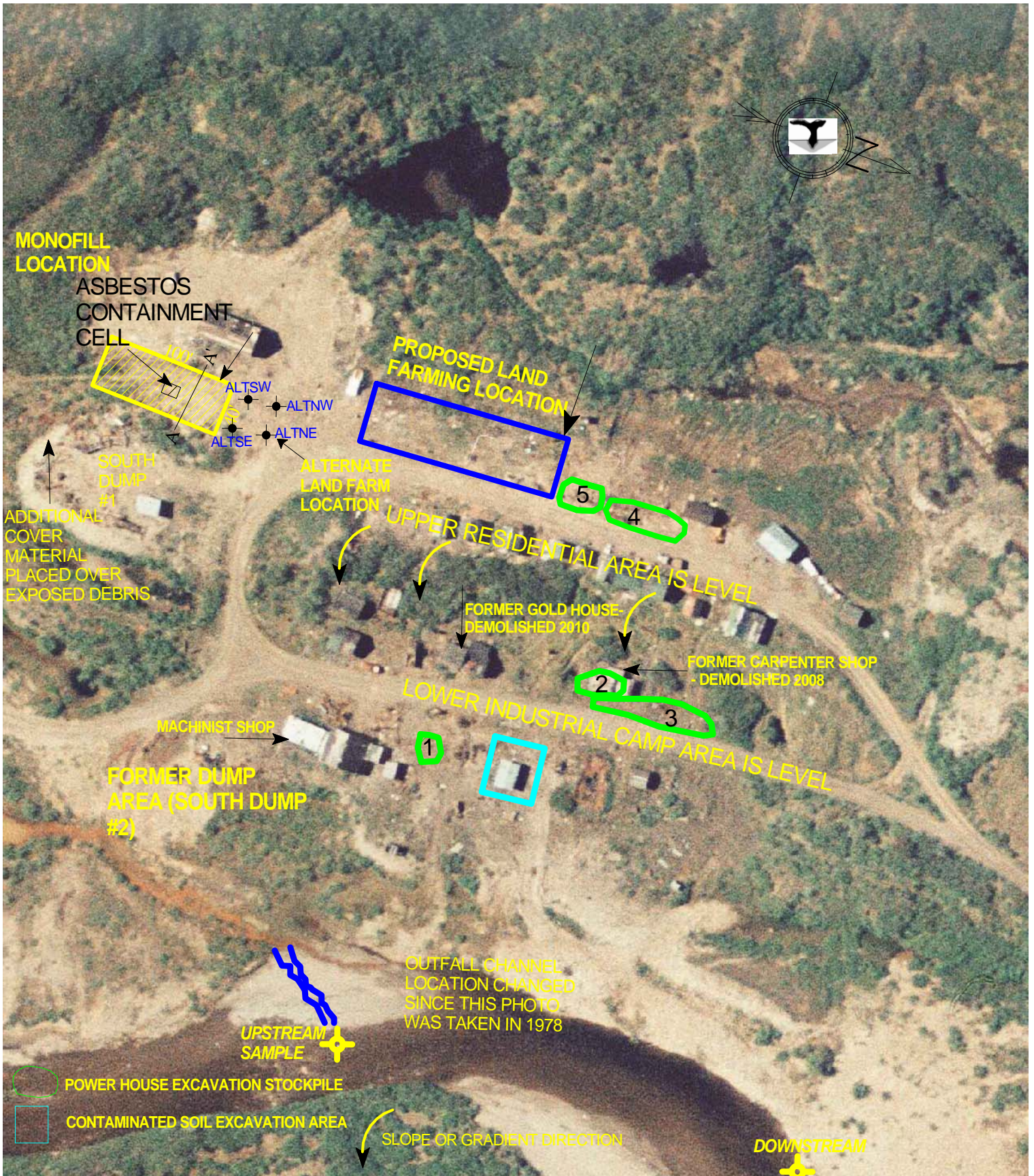
FIGURE 1
 LOCATION & VICINITY

PROJECT NO: 1080-32

FILE: PROJECTS/1080/32/FIGURES/FIGURE 1.SKF

DATE: 11/06/2008

SCALE: AS SHOWN



AERIAL PHOTOGRAPH DATES TO 1978
 DOES NOT REFLECT CURRENT CONDITIONS AT UTICA MINE CAMP

TRAVIS/PETERSON ENVIRONMENTAL CONSULTING, INC.
 329 2ND STREET
 FAIRBANKS, ALASKA 99701

NANA REGIONAL CORPORATION
 UTICA MINE CAMP CLEANUP

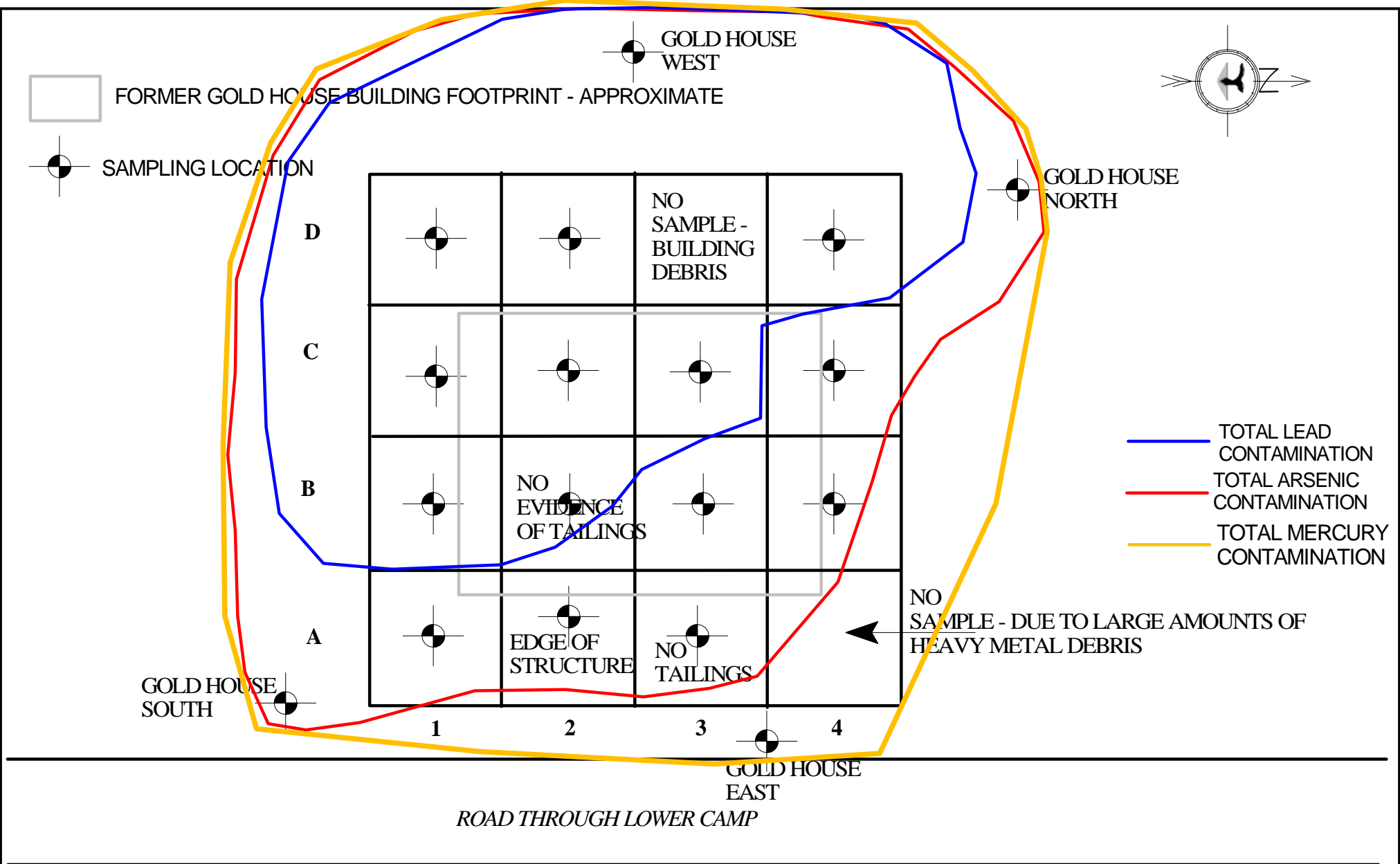
FIGURE 2
 SITE PLAN

PROJECT NO.: 1080-35

FILE: S:\PROJECTS\1080\35\2010 PROJECT FILE\FIGURES

DATE: 07/19/2010

SCALE: 1" = 100'



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 FAIRBANKS, ALASKA 99701

NANA REGIONAL CORPORATION, INC.

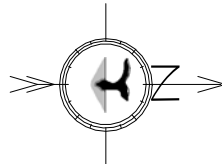
FIGURE 3

FORMER GOLD HOUSE BUILDING FOOTPRINT - APPROXIMATE

SAMPLING LOCATION

TCLP LEAD CONTAMINATION

TCLP MERCURY CONTAMINATION



GOLD HOUSE SOUTH

GOLD HOUSE WEST

GOLD HOUSE NORTH

GOLD HOUSE EAST

ROAD THROUGH LOWER CAMP

D
C
B
A

1 2 3 4

NO SAMPLE - BUILDING DEBRIS

NO EVIDENCE OF TAILINGS

EDGE OF STRUCTURE

NO TAILINGS

NO SAMPLE - DUE TO LARGE AMOUNTS OF HEAVY METAL DEBRIS

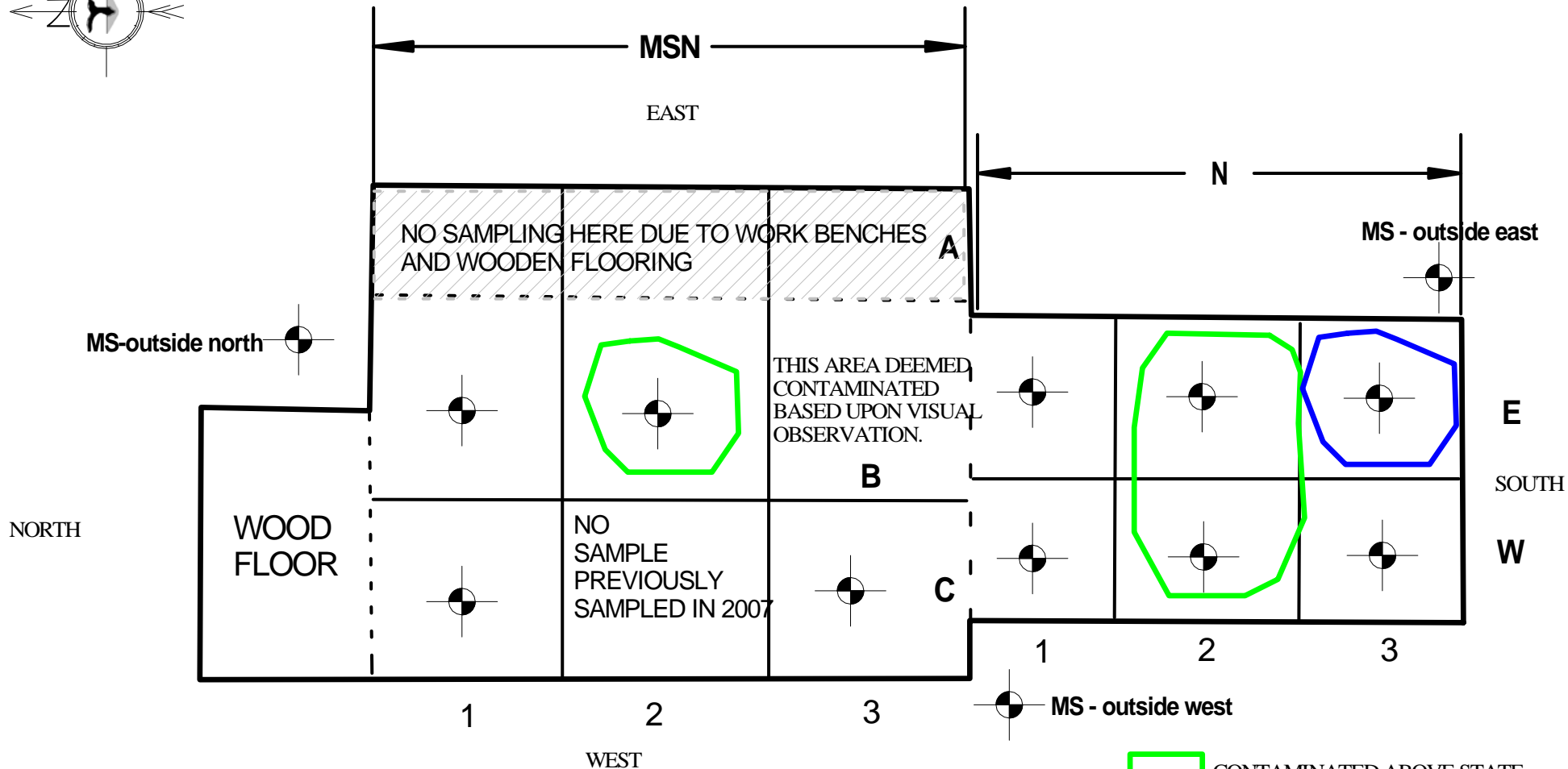
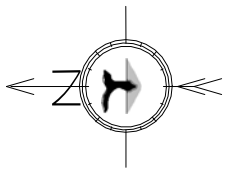
10 FT

10 FT

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NANA REGIONAL CORPORATION, INC.

FIGURE 4



- CONTAMINATED ABOVE STATE CLEANUP LEVEL
- CONTAMINATED BELOW STATE CLEANUP LEVEL - 10-19,000 ppm

SAMPLING LOCATION

MSN - MACHINE SHOP AREA SAMPLES
N - WELDING BAY AREA SAMPLES

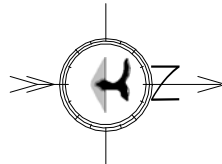
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329 SECOND STREET
FAIRBANKS, ALASKA 99701

NANA REGIONAL CORPORATION, INC.

FIGURE 5

PROPOSED LAND FARMING LOCATION

 SAMPLING LOCATION



1 2 3 4 5 6 7 8

B

A

TO MONOFILL


UPPER CAMP AREA ROADWAY

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FIGURE 6

APPENDIX B
ANALYTICAL RESULTS TABLES, LABORATORY ANALYTICAL REPORTS, AND
LABORATORY DATA REVIEW CHECKLISTS

Table 1

GOLD HOUSE SOIL CHARACTERIZATION SAMPLING FOR TCLP METALS

SAMPLE ID	SAMPLE DATE	SAMPLING DEPTH	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	
			Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
6020 RCRA TCLP			6020 RCRA TCLP	6020 RCRA TCLP	6020 RCRA TCLP	6020 RCRA TCLP	6020 RCRA TCLP	6020 RCRA TCLP	7470 TCLP	
ADEC Under 40 inch Zone [Migration to Groundwater]cleanup level	TCLP cleanup level		5.0	100	1.0	5.0	5.0	1.0	5.0	0.2
1A	8/31/2010	Surface	ND	ND	ND	ND	ND	ND	ND	ND
1A	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
1A	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
1B	8/31/2010	Surface	ND	ND	ND	ND	2.9	ND	ND	ND
1B	8/31/2010	0 - 1 ft	ND	ND	ND	ND	1.4	ND	ND	ND
1B	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
1C	8/31/2010	Surface	ND	ND	ND	ND	86.5	ND	ND	ND
1C*	8/31/2010	Surface	ND	ND	ND	ND	22.5	ND	ND	ND
1C	8/31/2010	0 - 1 ft	ND	ND	ND	ND	86	ND	ND	ND
1C	8/31/2010	1 - 2 ft	ND	ND	ND	ND	3.4	ND	ND	ND
1D	8/31/2010	Surface	ND	ND	ND	ND	8.1	ND	ND	34
1D	8/31/2010	0 - 1 ft	ND	ND	ND	ND	1.0	ND	ND	ND
1D	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
2A	8/31/2010	Surface	ND	ND	ND	ND	ND	ND	ND	ND
2A	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
2A	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
2B	8/31/2010	0 - 1 ft	ND	ND	ND	ND	1.5	ND	ND	ND
2C	8/31/2010	Surface	ND	ND	ND	ND	16.9	ND	ND	ND
2C*	8/31/2010	Surface	ND	ND	ND	ND	69.5	ND	ND	778
2C	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
2C	8/31/2010	1 - 2 ft	ND	ND	ND	ND	1.2	ND	ND	ND
2D	8/31/2010	Surface	ND	ND	ND	ND	3.5	ND	ND	8.8
2D	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
2D	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
3A	8/31/2010	0 - 1 ft	ND	ND	ND	ND	1.2	ND	ND	ND
3A*	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
3B	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
3B*	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
3C	8/31/2010	Surface	ND	ND	ND	ND	ND	ND	ND	26.4
3C	8/31/2010	0 - 1 ft	ND	ND	ND	ND	115	ND	ND	ND
3C	8/31/2010	1 - 2 ft	ND	ND	ND	ND	31.5	ND	ND	ND
4B	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
4C	8/31/2010	Surface	ND	ND	ND	ND	ND	ND	ND	ND
4C	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
4C	8/31/2010	1 - 2 ft	ND	ND	ND	ND	ND	ND	ND	ND
4D	8/31/2010	Surface	ND	ND	ND	ND	ND	ND	ND	ND
4D	8/31/2010	0 - 1 ft	ND	ND	ND	ND	ND	ND	ND	ND
Gold House North	8/31/2010	0 - 6 inches	ND	ND	ND	ND	ND	ND	ND	ND
Gold House East	8/31/2010	0 - 6 inches	ND	ND	ND	ND	ND	ND	ND	ND
Gold House West	8/31/2010	0 - 6 inches	ND	ND	ND	ND	ND	ND	ND	9.8
Gold House South	8/31/2010	0 - 6 inches	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:

BOLD results shown in bold type are detections above their respective cleanup standards
mg/kg milligrams per kilogram
* indicates a duplicate sample

Table 2

GOLD HOUSE SOIL CHARACTERIZATION SAMPLING FOR TOTAL METALS

SAMPLE ID	SAMPLE DATE	SAMPLING DEPTH	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	Sample Result	
			Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			6010 total metals	6010 total metals	6010 total metals	6010 total metals	6010 total metals	6010 total metals	7471 total	
Zone [Migration to Groundwater]cleanup level			3.9	1,100	5	25	400**	3.4	11.2	1.4
1A	8/31/2010	Surface	30.3	61	0.53	15.5	74.1	ND	ND	9.8
1A	8/31/2010	0 - 1 ft	26.7	36.6	0.28	10.1	23.8	1.0	ND	4.4
1A	8/31/2010	1 - 2 ft	18.2	25.9	0.24	9.7	12.3	0.4	ND	1.5
1B	8/31/2010	Surface	467	143	1.3	20.8	1,470	2.6	3.5	171
1B	8/31/2010	0 - 1 ft	1,010	218	1.5	40.1	2,740	5.2	12.1	238
1B	8/31/2010	1 - 2 ft	59.7	55.5	0.5	12.4	122	1.0	0.65	19.8
1C	8/31/2010	Surface	590	106	1.7	53.4	8,470	4.1	24.3	500
1C*	8/31/2010	Surface	818	85.1	1.4	37	3,040	3.3	31.6	720
1C	8/31/2010	0 - 1 ft	717	105	1.9	28	6,050	4.5	12.4	312
1C	8/31/2010	1 - 2 ft	70.9	46.8	1.4	12.1	680	1.5	1.4	11
1D	8/31/2010	Surface	1,620	71.4	1.5	40.7	2,860	3.7	14.6	1,250
1D	8/31/2010	0 - 1 ft	217	38.2	0.6	11	694	1.4	1.8	108
1D	8/31/2010	1 - 2 ft	98.6	39.8	0.36	10.3	136	0.94	0.78	99.2
2A	8/31/2010	Surface	40	63.2	0.57	12	69.7	0.82	ND	0.95
2A	8/31/2010	0 - 1 ft	27.2	38.6	0.35	9.6	37.9	0.45	ND	2.4
2A	8/31/2010	1 - 2 ft	81.1	136	0.91	16.7	226	2.6	0.81	14.3
2B	8/31/2010	0 - 1 ft	128	48	0.46	11.5	375	2.7	1.8	78.2
2C	8/31/2010	Surface	701	98.2	1.4	24.9	2,420	4.0	11.7	544
2C*	8/31/2010	Surface	790	103	2.6	84.9	4,900	5.9	21.3	778
2C	8/31/2010	0 - 1 ft	980	87.7	1.5	25.4	2,750	3.9	8.4	976
2C	8/31/2010	1 - 2 ft	913	65.4	0.9	21.2	1,840	3.8	4.8	347
2D	8/31/2010	Surface	1,480	80.1	1.4	32.6	2,000	3.8	22.6	648
2D	8/31/2010	0 - 1 ft	1,930	91.4	1.3	27.8	2,550	3.5	9.9	1,070
2D	8/31/2010	1 - 2 ft	758	47.3	0.99	26.5	1,390	2.5	10.9	169
3A	8/31/2010	0 - 1 ft	40.5	42.8	0.38	10.4	199	0.73	0.91	8.1
3A*	8/31/2010	0 - 1 ft	139	42.6	0.59	13.5	121	1.0	0.67	33.6
3B	8/31/2010	0 - 1 ft	51.9	53.2	0.42	17	60.5	1.4	ND	15.4
3B*	8/31/2010	0 - 1 ft	90.2	77.6	0.53	17.5	236	1.3	1.2	54.6
3C	8/31/2010	Surface	901	97.6	1.7	28.5	12,100	5.0	50.3	279
3C	8/31/2010	0 - 1 ft	830	77.6	1.0	27	5,030	4.6	26.2	418
3C	8/31/2010	1 - 2 ft	104	39.7	1.4	13.5	671	1.3	3.2	36.6
4B	8/31/2010	0 - 1 ft	82.1	49.7	0.54	14.5	219	1.1	1.0	10.7
4C	8/31/2010	Surface	90.8	38.1	0.45	10.5	57.5	0.62	ND	83.7
4C	8/31/2010	0 - 1 ft	59.2	39.7	0.38	9.2	49	0.71	ND	21
4C	8/31/2010	1 - 2 ft	62.3	36.3	0.36	10.5	53.3	0.81	1.9	10.7
4D	8/31/2010	Surface	1,430	66.9	1.3	27.7	2,270	5.9	6.6	453
4D	8/31/2010	0 - 1 ft	1,080	59.8	0.8	18.5	838	3.0	3.6	334
Gold House North	8/31/2010	0 - 6 inches	158	68.1	1.1	20.9	107	ND	ND	21
Gold House East	8/31/2010	0 - 6 inches	30	64.1	0.48	15.8	53	0.53	ND	21.8
Gold House West	8/31/2010	0 - 6 inches	2,080	89.9	2.6	41	2,450	9.0	12.2	ND
Gold House South	8/31/2010	0 - 6 inches	27.5	98.2	0.49	25.4	49.4	0.7	0.57	6.7

NOTES:

BOLD results shown in bold type are detections above their respective cleanup standards

mg/kg milligrams per kilogram

* indicates a duplicate sample

** This cleanup level is taken from Table B1. Method Two - Soil Cleanup levels table and is for direct contact. The value is the same regardless of the zone.

Table 3

MACHINIST SHOP SOIL SAMPLES - Residual Range Organic Sample Results

SAMPLE ID	SAMPLE DEPTH	Sample Result	SAMPLING DATE
		mg/kg	
ADEC Under 40 inch			
Zone [Migration to Groundwater] cleanup level for RRO		11,000 mg/kg ADEC Soil Cleanup Level	
MS Oustide East	0 - 1 ft	34.7	8/31/2010
MS Oustide West S01	0 - 1 ft	2,170	8/31/2010
MS Outside North S01	0 - 1 ft	3,000	8/31/2010
N1 West	surface	4,950	8/31/2010
N1 West RL04, S01	0 - 1 ft	1,030	8/31/2010
N1 West RL04, S01	1 - 2 ft	1,060	8/31/2010
N1 East RL04, S01	surface	3,120	8/31/2010
N1East* RL04, S01	surface	3,890	8/31/2010
N1 East RL04, S01	0 - 1 ft	1,050	8/31/2010
N1East* RL04, S01	0 - 1 ft	1,030	8/31/2010
N1 East	1 - 2 ft	0	8/31/2010
N2 East	surface	45,300	8/31/2010
N2 East	0 - 1 ft	22,700	8/31/2010
N2 East S01	1 - 2 ft	1,390	8/31/2010
N2 West S01	surface	40,800	8/31/2010
N2 West S01	0 - 1 ft	30,200	8/31/2010
N2 West S01	1 - 2 ft	34,200	8/31/2010
N3 East S01	surface	19,300	8/31/2010
N3 East S01	0 - 1 ft	10,800	8/31/2010
N3 East S01	1 - 2 ft	18,600	8/31/2010
N3 West	surface	1,440	8/31/2010
N3 West	0 - 1 ft	167	8/31/2010
N3 West	1 - 2 ft	174	8/31/2010
MSN1C S01	Surface	5,130	8/31/2010
MSN1C S01	0 - 1 ft	470	8/31/2010
MSN1C S01	1 - 2 ft	389	8/31/2010
MSN1B S01	surface	5,950	8/31/2010
MSN1B S01	0 - 1 ft	537	8/31/2010
MSN1B S01	1 - 2 ft	838	8/31/2010
MSN2B S01	Surface	7,070	8/31/2010
MSN2B* S01	surface	39,300	8/31/2010
MSN2B S01	0 - 1 ft	34,600	8/31/2010
MSN2B	1 - 2 ft	11,600	8/31/2010
MSN3C S01	surface	6,130	8/31/2010
MSN3C S01	0 - 1 ft	3,190	8/31/2010
MSN3C S01	1 - 2 ft	820	8/31/2010

Notes:

- Sample results were non-detect at the reporting limit values shown
- S01 Dilution used resulted in surrogate values outside the established control limits.
- RL04 The reporting limits were raised due to the high concentration of target and/or non-target compounds.

Table 4**LAND FARMING AREA SOIL SAMPLES FOR TOTAL METALS AND MERCURY**

SAMPLE ID	DATE	SAMPLE DEPTH	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT	SAMPLE RESULT
			Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
			6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	7471
ADEC Cleanup level in mg/kg	Under 40 Inch Zone		3.9	1,100	5.0	25	400*	3.4	11.2	1.4
LFN1B	8/31/2010	0 - 2 inches	8.0	47.6	3.2	3.9	6.6	ND	ND	ND
LFN1A	8/31/2010	0 - 2 inches	31.5	83.2	0.5	17.9	25.5	0.82	ND	0.5
LFN2B	8/31/2010	0 - 2 inches	17.2	62.6	0.95	14	17.2	0.65	ND	ND
LFN2A	8/31/2010	0 - 2 inches	20.6	49.2	0.26	13.5	17.2	0.66	0.44	ND
LFN3B	8/31/2010	0 - 2 inches	19.8	56.1	0.36	16.4	14.9	ND	ND	ND
LFN3A	8/31/2010	0 - 2 inches	14.3	50.5	0.28	13.8	15.4	ND	ND	0.14
LFN4B	8/31/2010	0 - 2 inches	19.7	71.4	1.0	12.3	49.6	3.1	ND	ND
LFN4A	8/31/2010	0 - 2 inches	44.7	75.2	1.2	19.2	27.6	1.3	ND	0.17
LFN5B	8/31/2010	0 - 2 inches	11.9	63.9	1.4	11	45.3	ND	ND	ND
LFN5A	8/31/2010	0 - 2 inches	23.1	100	0.96	13.8	25.6	0.89	ND	ND
LFN6B	8/31/2010	0 - 2 inches	22.5	332	0.95	14.8	45.2	0.64	ND	ND
LFN6A	8/31/2010	0 - 2 inches	64.6	101	0.7	18.5	43.7	0.84	ND	ND
LFN7B	8/31/2010	0 - 2 inches	22.6	45.5	0.3	11.4	12.1	0.42	ND	ND
LFN7A	8/31/2010	0 - 2 inches	18.5	74.7	0.35	11.9	26.9	ND	ND	ND
LFN8B	8/31/2010	0 - 2 inches	22.1	54.4	0.32	19.2	50.9	0.61	ND	ND
LFN8A	8/31/2010	0 - 2 inches	23.2	55.6	0.37	17.2	21.8	0.97	ND	ND
ALT SE	8/31/2010	0 - 2 inches	23.4	72.3	0.23	14.9	10.3	0.51	ND	ND
ALT NE	8/31/2010	0 - 2 inches	28.8	34.8	0.43	12.2	10.3	0.8	ND	ND
ALT SW	8/31/2010	0 - 2 inches	38	84.5	0.24	12.8	6.8	0.59	ND	ND
ALT NW	8/31/2010	0 - 2 inches	23.5	104	0.19	16.1	8.2	0.48	ND	ND

20 SAMPLES

Table 5
Inmachuk River Sediment Sample Results

SAMPLE ID	DATE	SAMPLE DEPTH	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
			GRO	DRO	RRO	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
			AK101	AK102	AK103	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	7471
ADEC Cleanup level in mg/kg	Under 40 Inch Zone	SEDIMENT SAMPLES	300	250	11,000	3.9	1,100	5.0	25	400*	3.4	11.2	1.4
UPSTREAM	8/31/2010		ND	13.9	44.8	29.7	42.7	0.35	11.7	18	0.66	ND	ND
DOWNSTREAM	8/31/2010		ND S04	5.45	29.9	29.9	57.4	0.37	14.4	12.4	0.66	ND	ND

Table 6
Inmachuk River Surface Water Sample Results

SAMPLE ID	DATE	SAMPLE DEPTH	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
			GRO	DRO	RRO	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
			AK101	AK102	AK103	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	6020 TOTAL	7471
ADEC Cleanup level in mg/L	Under 40 Inch Zone	SURFACE WATER SAMPLES	2.2	1.5	1.1	0.01	2.0	0.005	0.1	0.015	0.05	0.1	0.002
UPSTREAM	8/31/2010		ND	ND	0.0516J	0.00094	0.027	ND	ND	ND	ND	ND	ND
DOWNSTREAM	8/31/2010		ND	ND	0.0589J	0.00088	0.0205	ND	ND	ND	ND	ND	ND

Table 7
Inmachuk River BTEX Results

SAMPLE ID	DATE	SAMPLE DEPTH	RESULT	RESULT	RESULT	RESULT
			Benzene	Toluene	Ethylbenzene	Xylene
			EPA 8021	EPA 8021	EPA 8021	EPA 8021
ADEC Cleanup level in mg/L	Under 40 Inch Zone	SURFACE WATER SAMPLES	0.005	1.0	0.7	10
UPSTREAM	8/31/2010		ND	ND	ND	ND
DOWNSTREAM	8/31/2010		ND	ND	ND	ND
ADEC Cleanup level in mg/kg	Under 40 Inch Zone	SEDIMENT SAMPLES	0.025	6.5	6.9	63
UPSTREAM	8/31/2010		ND	ND	ND	ND
DOWNSTREAM	8/31/2010		ND S04	ND S04	ND S04	ND S04

Notes:
S04 Low quality control recoveries were observed for this analyte due to a sample matrix effect.



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October 04, 2010

Melissa Shippey
Travis/Peterson Environmental Consulting Inc.
329 Second Street
Fairbanks, Alaska 99701
TEL: (907) 455-7225
FAX: (907) 455-7228

RE: Utica Mine 1080-35

Order No.: 1009003

Dear Melissa Shippey:

Alaska Analytical Laboratory received 41 sample(s) on 9/3/2010 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative. Analytical results designated with a "J" qualifier are estimated and represent a detection above the Method Detection Limit (MDL) and less than the Reporting Limit (PQL). These analytes are not reviewed nor narrated as to whether they are laboratory artifacts.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

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

Sincerely,

A handwritten signature in black ink that reads "Kelley Lovejoy".

Kelley Lovejoy
Chief Chemist
1956 Richardson Highway
North Pole, Alaska 99705



Alaska Analytical Laboratory
1956 Richardson Highway
North Pole, Alaska 99705
TEL: (907) 488-1271 FAX: (907) 488-
Website: www.alaska-analytical.com

Case Narrative

WO#: 1009003
Date: 10/4/2010

CLIENT: Travis/Peterson Environmental Consulting I
Project: Utica Mine 1080-35

This report in its entirety consists of the documents listed below. All documents contain the Alaska Analytical Laboratory Work Order Number assigned to this report.

1. Paginated Report including: Case Narrative, Analytical Results and Applicable Quality Control Summary Reports.
2. A Cover Letter that immediately precedes the Paginated Report.
3. Paginated copies of the Chain of Custody Documents supplied with this sample set.

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

Any comments or problems with the analytical events associated with this report are noted below.

Prep Comments for SW5035, Sample 1009003-040B: Second vial of MeOH added due to significant reduction of free flowing methanol.

Prep Comments for SW3545, Sample 1009003-010A: Sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1mL versus ~50mL before concentrating. Final analytical result over the MCL.

Prep Comments for SW3545, Sample 1009003-026A: Sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1mL versus ~50mL before concentrating. Final analytical result over the MCL.

Prep Comments for SW3545, Sample 1009003-029A: Sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 2mL versus ~50mL before concentrating. Final analytical result over the MCL.

Prep Comments for SW3545, Sample 1009003-007A: Very hard soil, had to use half the amount for the



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Case Narrative

WO#: 1009003
Date: 10/4/2010

CLIENT: Travis/Peterson Environmental Consulting I

Project: Utica Mine 1080-35
extraction.

Prep Comments for SW3545, Sample 1009003-010A: Sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1mL versus ~50mL before concentrating.

AK101S: Sample matrix indicates that there may be a high concentration of magnesium and/or calcium carbonate in acidic soil. When methanol is added to the sample it effervesces; expands and reacts with and/or absorbs the surrogates when the chemical reaction occurs. Consequently, the amount of free flowing methanol is greatly reduced. The samples with this matrix effect have been flagged S04 in the report.



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Analytical Report

(consolidated)

WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:30:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-001 **Matrix:** SOIL
Client Sample ID N3 EAST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	19,300	2,100	*	mg/Kg-dry	200	9/29/2010 4:33:05 AM
Surr: Octacosane	8.89	50-150	S01	%REC	200	9/29/2010 4:33:05 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.90	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Analytical Report

(consolidated)

WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:32:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-002 **Matrix:** SOIL
Client Sample ID N3 EAST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	10,800	1,040	*	mg/Kg-dry	100	9/29/2010 5:04:19 AM
Surr: Octacosane	9.38	50-150	S01	%REC	100	9/29/2010 5:04:19 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.55	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Analytical Report

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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:33:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-003 **Matrix:** SOIL
Client Sample ID N3 EAST 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	18,600	2,050	*	mg/Kg-dry	200	9/29/2010 5:35:01 AM
Surr: Octacosane	7.81	50-150	S01	%REC	200	9/29/2010 5:35:01 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.22	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Analytical Report

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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:37:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-004 **Matrix:** SOIL
Client Sample ID N3 WEST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	1,440	215		mg/Kg-dry	20	9/29/2010 6:05:56 AM
Surr: Octacosane	12.2	50-150	S01	%REC	20	9/29/2010 6:05:56 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	10.5	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Analytical Report

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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:56:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-005 **Matrix:** SOIL
Client Sample ID N3 WEST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS				AK102	SW3545	Analyst: KL
Residual Range Organics C25-C36	167	21.5		mg/Kg-dry	2	9/29/2010 6:36:43 AM
Surr: Octacosane	80.7	50-150		%REC	2	9/29/2010 6:36:43 AM
PERCENT MOISTURE				D2216		Analyst: KL
Percent Moisture	7.96	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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Analytical Report

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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 3:57:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-006 **Matrix:** SOIL
Client Sample ID N3 WEST 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS				AK102	SW3545	Analyst: KL
Residual Range Organics C25-C36	174	10.5		mg/Kg-dry	1	9/29/2010 7:07:53 AM
Surr: Octacosane	134	50-150		%REC	1	9/29/2010 7:07:53 AM
PERCENT MOISTURE				D2216		Analyst: KL
Percent Moisture	5.55	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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Analytical Report

(consolidated)

WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:01:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-007 **Matrix:** SOIL
Client Sample ID N2 EAST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	45,300	4,090	*	mg/Kg-dry	200	9/29/2010 7:38:34 AM
Surr: Octacosane	2,220	50-150	S01	%REC	200	9/29/2010 7:38:34 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	2.28	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Analytical Report

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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:02:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-008 **Matrix:** SOIL
Client Sample ID N2 EAST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	22,700	2,110	*	mg/Kg-dry	200	9/29/2010 8:09:34 AM
Surr: Octacosane	10.3	50-150	S01	%REC	200	9/29/2010 8:09:34 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	6.34	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:03:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-009 **Matrix:** SOIL
Client Sample ID N2 EAST 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	1,390	216		mg/Kg-dry	20	9/29/2010 8:40:44 AM
Surr: Octacosane	12.3	50-150	S01	%REC	20	9/29/2010 8:40:44 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	10.3	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:05:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-010 **Matrix:** SOIL
Client Sample ID N2 WEST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	40,800	2,090	*	mg/Kg-dry	200	9/29/2010 9:11:44 AM
Surr: Octacosane	9.39	50-150	S01	%REC	200	9/29/2010 9:11:44 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.51	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:07:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-011 **Matrix:** SOIL
Client Sample ID N2 WEST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	30,200	2,060	*	mg/Kg-dry	200	9/29/2010 9:42:28 AM
Surr: Octacosane	2,410	50-150	S01	%REC	200	9/29/2010 9:42:28 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	5.80	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:09:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-012 **Matrix:** SOIL
Client Sample ID N2 WEST 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	34,200	2,160	*	mg/Kg-dry	200	9/29/2010 10:13:38 AM
Surr: Octacosane	10.2	50-150	S01	%REC	200	9/29/2010 10:13:38 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	8.26	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:11:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-013 **Matrix:** SOIL
Client Sample ID N1 WEST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	4,950	1,010	*J	mg/Kg-dry	100	9/29/2010 10:44:50 AM
Surr: Octacosane	7.05	50-150	S	%REC	100	9/29/2010 10:44:50 AM
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	2.11	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:13:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-014 **Matrix:** SOIL
Client Sample ID N1 WEST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	1,030	RL04	mg/Kg-dry	100	9/29/2010 11:16:31 AM
Surr: Octacosane	4.93	50-150	S01	%REC	100	9/29/2010 11:16:31 AM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	6.18	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:15:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-015 **Matrix:** SOIL
Client Sample ID N1 WEST 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	1,060	RL04	mg/Kg-dry	100	9/29/2010 11:47:52 AM
Surr: Octacosane	4.82	50-150	S01	%REC	100	9/29/2010 11:47:52 AM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	6.23	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:08:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-016 **Matrix:** SOIL
Client Sample ID N1 EAST SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	3,120	RL04	mg/Kg-dry	200	9/29/2010 12:18:55 PM
Surr: Octacosane	1,350	50-150	S01	%REC	200	9/29/2010 12:18:55 PM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	5.69	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:12:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-017 **Matrix:** SOIL
Client Sample ID N1 EAST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	1,050	RL04	mg/Kg-dry	100	9/29/2010 12:50:32 PM
Surr: Octacosane	5.00	50-150	S01	%REC	100	9/29/2010 12:50:32 PM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.93	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:19:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-019 **Matrix:** SOIL
Client Sample ID MSNIC SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	Analyst: KL
Residual Range Organics C25-C36	5,130	1,030	*	mg/Kg-dry	100	9/29/2010 1:22:14 PM
Surr: Octacosane	6.77	50-150	S01	%REC	100	9/29/2010 1:22:14 PM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	2.69	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:28:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-020 **Matrix:** SOIL
Client Sample ID MSNIC 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	470	100	J	mg/Kg-dry	10	9/29/2010 1:53:32 PM
Surr: Octacosane	14.2	50-150	S01	%REC	10	9/29/2010 1:53:32 PM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	3.16	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:32:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-021 **Matrix:** SOIL
Client Sample ID MSNIC 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	389	99.2	J	mg/Kg-dry	10	9/29/2010 10:33:43 AM
Surr: Octacosane	12.8	50-150	S01	%REC	10	9/29/2010 10:33:43 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	3.11	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:34:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-022 **Matrix:** SOIL
Client Sample ID MSNIB SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	5,950	986	*	mg/Kg-dry	100	9/29/2010 11:04:49 PM
Surr: Octacosane	8.12	50-150	S01	%REC	100	9/29/2010 11:04:49 PM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	1.44	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:38:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-023 **Matrix:** SOIL
Client Sample ID MSN3C SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	6,130	1,060	*	mg/Kg-dry	100	9/29/2010 11:36:11 PM
Surr: Octacosane	7.45	50-150	S01	%REC	100	9/29/2010 11:36:11 PM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	8.37	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:39:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-024 **Matrix:** SOIL
Client Sample ID MSN3C 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	3,190	1,040	*J	mg/Kg-dry	100	9/30/2010 12:07:34 AM
Surr: Octacosane	6.61	50-150	S01	%REC	100	9/30/2010 12:07:34 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.51	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:40:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-025 **Matrix:** SOIL
Client Sample ID MSN3C 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	820	105		mg/Kg-dry	10	9/30/2010 12:39:26 AM
Surr: Octacosane	16.3	50-150	S01	%REC	10	9/30/2010 12:39:26 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	7.01	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:00:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-026 **Matrix:** SOIL
Client Sample ID MSN2B SURFACE

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	7,070	2,060	*J	mg/Kg-dry	200	9/30/2010 1:10:52 AM
Surr: Octacosane	0	50-150	S01	%REC	200	9/30/2010 1:10:52 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.17	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:03:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-027 **Matrix:** SOIL
Client Sample ID MSN2B 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	34,600	3,060	*	mg/Kg-dry	200	9/30/2010 1:42:14 AM
Surr: Octacosane	15.2	50-150	S01	%REC	200	9/30/2010 1:42:14 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	3.86	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:05:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-028 **Matrix:** SOIL
Client Sample ID MSN2B 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	11,600	1,020	*	mg/Kg-dry	100	9/30/2010 2:13:21 AM
Surr: Octacosane	11.9	50-150	S01	%REC	100	9/30/2010 2:13:21 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	3.96	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:00:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-029 **Matrix:** SOIL
Client Sample ID DUPLICATE 5

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	39,300	3,120	*	mg/Kg-dry	200	9/30/2010 2:44:37 AM
Surr: Octacosane	14.1	50-150	S01	%REC	200	9/30/2010 2:44:37 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	5.08	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:08:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-030 **Matrix:** SOIL
Client Sample ID DUPLICATE 6

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	3,890	RL04	mg/Kg-dry	250	9/30/2010 3:16:04 AM
Surr: Octacosane	7.01	50-150	S01	%REC	250	9/30/2010 3:16:04 AM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	6.07	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 5:12:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-031 **Matrix:** SOIL
Client Sample ID DUPLICATE 7

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	ND	1,030	RL04	mg/Kg-dry	100	9/30/2010 3:47:19 AM
Surr: Octacosane	4.51	50-150	S01	%REC	100	9/30/2010 3:47:19 AM
NOTES:						
RL04 - The reporting limits were raised due to the high concentration of target and/or non-target compounds.						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	6.16	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 6:43:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-032 **Matrix:** WATER
Client Sample ID UPSTREAM

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
AK102SVW					AK102	SW3510 Analyst: KL
Diesel Range Organics C10-C25	ND	0.0229		mg/L	1	9/29/2010 4:18:46 AM
Residual Range Organics C25-C36	0.0516	0.0139	J	mg/L	1	9/29/2010 4:18:46 AM
Surr: Octacosane	133	50-150		%REC	1	9/29/2010 4:18:46 AM
Surr: o-Terphenyl	100	50-150		%REC	1	9/29/2010 4:18:46 AM
GASOLINE RANGE ORGANICS					AK101	Analyst: KL
Benzene	ND	0.700		µg/L	1	9/9/2010 11:51:04 PM
Ethylbenzene	ND	0.700		µg/L	1	9/9/2010 11:51:04 PM
Gasoline Range Organics C6-C10	ND	10.0		µg/L	1	9/9/2010 11:51:04 PM
m,p-Xylene	ND	0.700		µg/L	1	9/9/2010 11:51:04 PM
o-Xylene	ND	0.700		µg/L	1	9/9/2010 11:51:04 PM
Toluene	ND	0.700		µg/L	1	9/9/2010 11:51:04 PM
Surr: 4-Bromofluorobenzene	87.1	50-150		%REC	1	9/9/2010 11:51:04 PM
Surr: a,a,a-trifluorotoluene	95.1	50-150		%REC	1	9/9/2010 11:51:04 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 7:08:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-033 **Matrix:** WATER
Client Sample ID DOWNSTREAM

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
AK102SVW					AK102	SW3510 Analyst: KL
Diesel Range Organics C10-C25	ND	0.0229		mg/L	1	9/29/2010 4:18:46 AM
Residual Range Organics C25-C36	0.0589	0.0139	J	mg/L	1	9/29/2010 4:18:46 AM
Surr: Octacosane	143	50-150		%REC	1	9/29/2010 4:18:46 AM
Surr: o-Terphenyl	101	50-150		%REC	1	9/29/2010 4:18:46 AM
GASOLINE RANGE ORGANICS					AK101	Analyst: KL
Benzene	ND	0.700		µg/L	1	9/10/2010 12:17:52 PM
Ethylbenzene	ND	0.700		µg/L	1	9/10/2010 12:17:52 PM
Gasoline Range Organics C6-C10	ND	10.0		µg/L	1	9/10/2010 12:17:52 PM
m,p-Xylene	ND	0.700		µg/L	1	9/10/2010 12:17:52 PM
o-Xylene	ND	0.700		µg/L	1	9/10/2010 12:17:52 PM
Toluene	ND	0.700		µg/L	1	9/10/2010 12:17:52 PM
Surr: 4-Bromofluorobenzene	88.2	50-150		%REC	1	9/10/2010 12:17:52 PM
Surr: a,a,a-trifluorotoluene	95.2	50-150		%REC	1	9/10/2010 12:17:52 PM

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 2:22:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-034 **Matrix:** SOIL
Client Sample ID MS OUTSIDE WEST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	2,170	218	*	mg/Kg-dry	20	9/30/2010 5:21:30 AM
Surr: Octacosane	11.8	50-150	S01	%REC	20	9/30/2010 5:21:30 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	11.7	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 2:14:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-035 **Matrix:** SOIL
Client Sample ID MS OUTSIDE EAST 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	34.7	10.4	J	mg/Kg-dry	1	9/30/2010 5:52:41 AM
Surr: Octacosane	86.3	50-150		%REC	1	9/30/2010 5:52:41 AM
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	5.79	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 2:09:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-036 **Matrix:** SOIL
Client Sample ID MS OUTSIDE NORTH 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	3,000	220	*	mg/Kg-dry	20	9/30/2010 6:24:04 AM
Surr: Octacosane	9.55	50-150	S01	%REC	20	9/30/2010 6:24:04 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	10.2	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:36:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-037 **Matrix:** SOIL
Client Sample ID MSN1B 1-2

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	838	50.7		mg/Kg-dry	5	9/30/2010 6:55:46 AM
Surr: Octacosane	33.0	50-150	S01	%REC	5	9/30/2010 6:55:46 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	4.38	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 4:35:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-038 **Matrix:** SOIL
Client Sample ID MSN1B 0-1

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Residual Range Organics C25-C36	537	50.6		mg/Kg-dry	5	9/30/2010 7:27:00 AM
Surr: Octacosane	26.4	50-150	S01	%REC	5	9/30/2010 7:27:00 AM
NOTES:						
S01 - Dilution used resulted in surrogate values outside the established control Limits.						
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	3.50	1.00		wt%	1	9/8/2010 5:00:00 PM

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 6:43:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-039 **Matrix:** SOIL
Client Sample ID UPSTREAM

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Diesel Range Organics C10-C25	13.9	2.48		mg/Kg-dry	1	9/30/2010 7:58:10 AM
Residual Range Organics C25-C36	44.8	12.4	J	mg/Kg-dry	1	9/30/2010 7:58:10 AM
Surr: Octacosane	86.0	50-150		%REC	1	9/30/2010 7:58:10 AM
Surr: o-Terphenyl	86.9	50-150		%REC	1	9/30/2010 7:58:10 AM
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	22.5	1.00		wt%	1	9/8/2010 5:00:00 PM
GASOLINE RANGE ORGANICS					AK101	SW5035 Analyst: KL
Benzene	ND	0.003		mg/Kg-dry	50	9/9/2010 6:32:23 PM
Ethylbenzene	ND	0.003		mg/Kg-dry	50	9/9/2010 6:32:23 PM
Gasoline Range Organics C6-C10	ND	1.11		mg/Kg-dry	50	9/9/2010 6:32:23 PM
m,p-Xylene	ND	0.003		mg/Kg-dry	50	9/9/2010 6:32:23 PM
o-Xylene	ND	0.003		mg/Kg-dry	50	9/9/2010 6:32:23 PM
Toluene	ND	0.003		mg/Kg-dry	50	9/9/2010 6:32:23 PM
Surr: 4-Bromofluorobenzene	0	50-150	S04	%REC	50	9/9/2010 6:32:23 PM
Surr: a,a,a-trifluorotoluene	12.9	50-150	S04	%REC	50	9/9/2010 6:32:23 PM

NOTES:

S04 - Low Quality Control recoveries were observed for this analyte due to a sample matrix effect.

Qualifiers:	*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010 7:08:00 PM
Project: Utica Mine 1080-35
Lab ID: 1009003-040 **Matrix:** SOIL
Client Sample ID DOWNSTREAM

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS					AK102	SW3545 Analyst: KL
Diesel Range Organics C10-C25	5.45	2.12	J	mg/Kg-dry	1	9/30/2010 7:58:10 AM
Residual Range Organics C25-C36	29.9	10.6	J	mg/Kg-dry	1	9/30/2010 7:58:10 AM
Surr: Octacosane	89.9	50-150		%REC	1	9/30/2010 7:58:10 AM
Surr: o-Terphenyl	87.4	50-150		%REC	1	9/30/2010 7:58:10 AM
PERCENT MOISTURE					D2216	Analyst: KL
Percent Moisture	7.39	1.00		wt%	1	9/8/2010 5:00:00 PM
GASOLINE RANGE ORGANICS					AK101	SW5035 Analyst: KL
Benzene	ND	0.004		mg/Kg-dry	50	9/9/2010 6:59:01 PM
Ethylbenzene	ND	0.004		mg/Kg-dry	50	9/9/2010 6:59:01 PM
Gasoline Range Organics C6-C10	ND	1.61		mg/Kg-dry	50	9/9/2010 6:59:01 PM
m,p-Xylene	ND	0.004		mg/Kg-dry	50	9/9/2010 6:59:01 PM
o-Xylene	ND	0.004		mg/Kg-dry	50	9/9/2010 6:59:01 PM
Toluene	ND	0.004		mg/Kg-dry	50	9/9/2010 6:59:01 PM
Surr: 4-Bromofluorobenzene	95.8	50-150		%REC	50	9/9/2010 6:59:01 PM
Surr: a,a,a-trifluorotoluene	125	50-150		%REC	50	9/9/2010 6:59:01 PM

Qualifiers:	*/X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
	PL	Permit Limit	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010
Project: Utica Mine 1080-35
Lab ID: 1009003-041 **Matrix:** SOIL
Client Sample ID Trip Blank Soil

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS				AK101	SW5035	Analyst: KL
Benzene	ND	0.005		mg/Kg	50	9/9/2010 7:25:36 PM
Ethylbenzene	ND	0.005		mg/Kg	50	9/9/2010 7:25:36 PM
Gasoline Range Organics C6-C10	ND	2.00		mg/Kg	50	9/9/2010 7:25:36 PM
m,p-Xylene	ND	0.005		mg/Kg	50	9/9/2010 7:25:36 PM
o-Xylene	ND	0.005		mg/Kg	50	9/9/2010 7:25:36 PM
Toluene	ND	0.005		mg/Kg	50	9/9/2010 7:25:36 PM
Surr: 4-Bromofluorobenzene	101	50-150		%REC	50	9/9/2010 7:25:36 PM
Surr: a,a,a-trifluorotoluene	93.0	50-150		%REC	50	9/9/2010 7:25:36 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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 Website: www.alaska-analytical.com

Analytical Report

(consolidated)

WO#: **1009003**

Date Reported: **10/4/2010**

CLIENT: Travis/Peterson Environmental Consulting Inc. **Collection Date:** 8/31/2010
Project: Utica Mine 1080-35
Lab ID: 1009003-042 **Matrix:** WATER
Client Sample ID Trip Blank Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS				AK101		Analyst: KL
Benzene	ND	0.700		µg/L	1	9/10/2010 12:44:47 PM
Ethylbenzene	ND	0.700		µg/L	1	9/10/2010 12:44:47 PM
Gasoline Range Organics C6-C10	ND	10.0		µg/L	1	9/10/2010 12:44:47 PM
m,p-Xylene	ND	0.700		µg/L	1	9/10/2010 12:44:47 PM
o-Xylene	ND	0.700		µg/L	1	9/10/2010 12:44:47 PM
Toluene	ND	0.700		µg/L	1	9/10/2010 12:44:47 PM
Surr: 4-Bromofluorobenzene	87.6	50-150		%REC	1	9/10/2010 12:44:47 PM
Surr: a,a,a-trifluorotoluene	93.9	50-150		%REC	1	9/10/2010 12:44:47 PM

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit
PL	Permit Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



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QC SUMMARY REPORT

WO#: 1009003

04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK101S

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCS-113	LCS	AK101S	mg/Kg	9/9/2010	204						
Client ID:	Batch ID:	TestNo:	SW5035	Analysis Date:	SeqNo:						
LCSS	113	AK101	SW5035	9/9/2010	1961						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.18	0.020	2.500	0	87.1	60	120				
Ethylbenzene	2.33	0.050	2.500	0	93.4	60	120				
Gasoline Range Organics C6-C10	135	10.0	125.0	0	108	60	120				
m,p-Xylene	4.52	0.050	5.000	0	90.4	60	120				
o-Xylene	2.26	0.050	2.500	0	90.4	60	120				
Toluene	2.26	0.050	2.500	0	90.2	60	120				
Surr: 4-Bromofluorobenzene	2.46		2.500		98.4	60	120				
Surr: a,a,a-trifluorotoluene	2.53		2.500		101	60	120				

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCSD-113	LCSD	AK101S	mg/Kg	9/9/2010	204						
Client ID:	Batch ID:	TestNo:	SW5035	Analysis Date:	SeqNo:						
LCSS02	113	AK101	SW5035	9/9/2010	1962						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.21	0.020	2.500	0	88.4	60	120	2.177	1.50	20	
Ethylbenzene	2.40	0.050	2.500	0	96.1	60	120	2.335	2.85	20	
Gasoline Range Organics C6-C10	139	10.0	125.0	0	111	60	120	134.5	3.25	20	
m,p-Xylene	4.67	0.050	5.000	0	93.4	60	120	4.518	3.30	20	
o-Xylene	2.36	0.050	2.500	0	94.2	60	120	2.260	4.14	20	
Toluene	2.32	0.050	2.500	0	92.8	60	120	2.256	2.80	20	
Surr: 4-Bromofluorobenzene	2.43		2.500		97.2	60	120		0	0	
Surr: a,a,a-trifluorotoluene	2.50		2.500		100	60	120		0	0	

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK101S

Sample ID: MB-113	SampType: MBLK	TestCode: AK101S	Units: mg/Kg	Prep Date: 9/9/2010	RunNo: 204						
Client ID: PBS	Batch ID: 113	TestNo: AK101	SW5035	Analysis Date: 9/9/2010	SeqNo: 1963						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.020									
Ethylbenzene	ND	0.050									
Gasoline Range Organics C6-C10	ND	10.0									
m,p-Xylene	ND	0.050									
o-Xylene	ND	0.050									
Toluene	ND	0.050									
Surr: 4-Bromofluorobenzene	3.05		3.000		102	60	120				
Surr: a,a,a-trifluorotoluene	2.85		3.000		94.9	60	120				

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeds
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK101W

Sample ID: MB-R208	SampType: MBLK	TestCode: AK101W	Units: µg/L	Prep Date:	RunNo: 208						
Client ID: PBW	Batch ID: R208	TestNo: AK101		Analysis Date: 9/9/2010	SeqNo: 1988						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.00									
Ethylbenzene	ND	5.00									
Gasoline Range Organics C6-C10	ND	100									
m,p-Xylene	ND	5.00									
o-Xylene	ND	5.00									
Toluene	ND	5.00									
Surr: 4-Bromofluorobenzene	22.6		25.00		90.3	60	120				
Surr: a,a,a-trifluorotoluene	24.8		25.00		99.0	60	120				

Sample ID: LCS-R208	SampType: LCS	TestCode: AK101W	Units: µg/L	Prep Date:	RunNo: 208						
Client ID: LCSW	Batch ID: R208	TestNo: AK101		Analysis Date: 9/9/2010	SeqNo: 1992						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.5	5.00	50.00	0	87.1	60	120				
Ethylbenzene	46.7	5.00	50.00	0	93.4	60	120				
Gasoline Range Organics C6-C10	2,690	100	2,500	0	108	60	120				
m,p-Xylene	90.4	5.00	100.0	0	90.4	60	120				
o-Xylene	45.2	5.00	50.00	0	90.4	60	120				
Toluene	45.1	5.00	50.00	0	90.2	60	120				
Surr: 4-Bromofluorobenzene	49.2		50.00		98.4	60	120				
Surr: a,a,a-trifluorotoluene	50.6		50.00		101	60	120				

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK101W

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCSD-R208	LCSD	AK101W	µg/L		208						
Client ID:	Batch ID:	TestNo:		Analysis Date:	SeqNo:						
LCSS02	R208	AK101		9/9/2010	1993						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	44.2	5.00	50.00	0	88.4	60	120	43.54	1.50	20	
Ethylbenzene	48.0	5.00	50.00	0	96.1	60	120	46.69	2.85	20	
Gasoline Range Organics C6-C10	2,780	100	2,500	0	111	60	120	2,691	3.25	20	
m,p-Xylene	93.4	5.00	100.0	0	93.4	60	120	90.35	3.30	20	
o-Xylene	47.1	5.00	50.00	0	94.2	60	120	45.19	4.14	20	
Toluene	46.4	5.00	50.00	0	92.8	60	120	45.12	2.80	20	
Surr: 4-Bromofluorobenzene	48.6		50.00		97.2	60	120		0	0	
Surr: a,a,a-trifluorotoluene	50.1		50.00		100	60	120		0	0	

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeds
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK102S

Sample ID: LCS-112	SampType: LCS	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/7/2010	RunNo: 233						
Client ID: LCSS	Batch ID: 112	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2293						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Residual Range Organics C25-C36	100	50.0	100.0	0	100	60	120				
Surr: Octacosane	2.40		2.000		120	60	120				

Sample ID: LCSD-112	SampType: LCSD	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/7/2010	RunNo: 233						
Client ID: LCSS02	Batch ID: 112	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2294						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Residual Range Organics C25-C36	88.1	50.0	100.0	0	88.1	60	120	100.0	12.7	20	
Surr: Octacosane	2.30		2.000		115	60	120		0	0	

Sample ID: MB-112	SampType: MBLK	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/7/2010	RunNo: 233						
Client ID: PBS	Batch ID: 112	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2295						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Residual Range Organics C25-C36	ND	50.0									
Surr: Octacosane	2.17		2.000		109	60	120				

Sample ID: LCS-114	SampType: LCS	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/9/2010	RunNo: 233						
Client ID: LCSS	Batch ID: 114	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2315						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel Range Organics C10-C25	88.0	10.0	100.0	0	88.0	75	125				
Residual Range Organics C25-C36	90.0	50.0	100.0	0	90.0	60	120				
Surr: Octacosane	2.24		2.000		112	60	120				
Surr: o-Terphenyl	1.79		2.000		89.4	60	120				

Qualifiers:

*X Value exceeds Maximum Contaminant Level	E Value above quantitation range	H Holding times for preparation or analysis exceeds
M Manual Integration used to determine area response	ND Not Detected at the Method Detection Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Environmental Consulting Inc.

Project: Utica Mine 1080-35

TestCode: AK102S

Sample ID: LCSD-114	SampType: LCSD	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/9/2010	RunNo: 233						
Client ID: LCSS02	Batch ID: 114	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2316						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics C10-C25	84.0	10.0	100.0	0	84.0	75	125	87.95	4.61	20	
Residual Range Organics C25-C36	76.8	50.0	100.0	0	76.8	60	120	89.98	15.8	20	
Surr: Octacosane	1.69		2.000		84.5	60	120		0	0	
Surr: o-Terphenyl	1.69		2.000		84.6	60	120		0	0	

Sample ID: MB-114	SampType: MBLK	TestCode: AK102S	Units: mg/Kg	Prep Date: 9/9/2010	RunNo: 233						
Client ID: PBS	Batch ID: 114	TestNo: AK102	SW3545	Analysis Date: 9/28/2010	SeqNo: 2317						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics C10-C25	ND	10.0									
Residual Range Organics C25-C36	ND	50.0									
Surr: Octacosane	1.83		2.000		91.5	60	120				
Surr: o-Terphenyl	1.93		2.000		96.6	60	120				

Qualifiers:

*X	Value exceeds Maximum Contaminant Level	E	Value above quantitation range	H	Holding times for preparation or analysis exceeds
M	Manual Integration used to determine area response	ND	Not Detected at the Method Detection Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1009003
 04-Oct-10

Client: Travis/Peterson Enviromental Consulting Inc.

Project: Ulitca Mine 1080-35

TestCode: AK102SVW

Sample ID: MB-117	SampType: MBLK	TestCode: AK102SVW	Units: mg/L	Prep Date: 9/16/2010	RunNo: 236						
Client ID: PBW	Batch ID: 117	TestNo: AK102	SW3510	Analysis Date: 9/28/2010	SeqNo: 2318						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics C10-C25	ND	0.229									
Residual Range Organics C25-C36	0.0240	0.139									J
Surr: Octacosane	0.0362		0.05000		72.3	60	120				
Surr: o-Terphenyl	0.0403		0.05000		80.7	60	120				

Sample ID: LCS-117	SampType: LCS	TestCode: AK102SVW	Units: mg/L	Prep Date: 9/16/2010	RunNo: 236						
Client ID: LCSW	Batch ID: 117	TestNo: AK102	SW3510	Analysis Date: 9/28/2010	SeqNo: 2319						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics C10-C25	2.10	0.229	2.500	0	84.0	75	125				
Residual Range Organics C25-C36	1.92	0.139	2.500	0	76.8	60	120				
Surr: Octacosane	0.0422		0.05000		84.5	60	120				
Surr: o-Terphenyl	0.0423		0.05000		84.6	60	120				

Sample ID: LCSD-117	SampType: LCSD	TestCode: AK102SVW	Units: mg/L	Prep Date: 9/16/2010	RunNo: 236						
Client ID: LCSS02	Batch ID: 117	TestNo: AK102	SW3510	Analysis Date: 9/28/2010	SeqNo: 2320						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics C10-C25	2.18	0.229	2.500	0	87.4	75	125	2.100	3.95	20	
Residual Range Organics C25-C36	2.21	0.139	2.500	0	88.4	60	120	1.919	14.1	20	
Surr: Octacosane	0.0436		0.05000		87.1	60	120		0	0	
Surr: o-Terphenyl	0.0441		0.05000		88.2	60	120		0	0	

Qualifiers: *X Value exceeds Maximum Contaminant Level
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 E Value above quantitation range
 ND Not Detected at the Method Detection Limit
 RL Reporting Detection Limit
 H Holding times for preparation or analysis exceeds
 P Second column confirmation exceeds
 S Spike Recovery outside accepted recovery limits

Chain of Custody Record



COC No: 10-0062

Page 2 of 4

Job No. 62

Comments:

mshippay@speci.com

Date: 9/2/10

Lab Contact: Kelley Lovejoy

Carrier:

Sample Specific Notes:

Client Contact Information

Project Manager (PM):

Tel/Fax:

Analysis Turnaround Time

Requested Turnaround Time if different from below:

10 business days (Standard)

3 business days

2 Business Days

1 Business Day

Project Name: UTKA NINE CAMP.

Project Number: 1080-35

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.
NE west subgl	8/31/10	4:11p	SG	S	1
NI west 0-1		4:13p	G	S	1
NI west 1-2		4:15p	G	S	1
NI east subgl		5:08p	G	S	1
NI east 0-1		5:12p	G	S	1
NI east 1-2		5:12p	G	S	1
MSNIC surface		4:14p	G	S	1
MSNIC 0-1		4:28p	G	S	1
MSNIC 1-2		4:32p	G	S	1
MSNI B subgl		4:34p	G	S	1
MSN 3 C subgl		4:38p	G	S	1
MSN 3 C 0-1		4:39p	G	S	1

Preservation Used: 1 = Ice; 2 = Methanol; 3 = Other

Possible Hazard Identification

Non-Hazard

Flammable

Skin Irritant

Poison B

Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client

Disposal By Lab

Archive For _____ Months

Special Instructions/QC Requirements & Comments [Please note if there is Mercury in the sample.]

FUEL RELATED COMPOUNDS

*custody seal intact
temp bleeds 4.2°C
open temp 4.2°C*

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	9/3/10 TRC	9/3/10 9:50 am	Kelley Lovejoy	AAH	9/3/10 10:15 AM
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Chain of Custody Record



mslu@pwr@tpecc.com

Client Contact Information		Project Manager (PM):		Lab Contact: Kelley Lovejoy		Date:		COC No. 10-0063	
TRAWS/PETERSON ENVIRON. 329 SECOND STREET FAIRBANKS AK 99701 455-7225		Tel/Fax:		Analysis Turnaround Time		Carrier:		Page 3 of 4	
Project Name: <u>Utca Line</u>		Requested Turnaround Time if different from below:		RRO AK103		GONVATD		Job No. 62	
Project Number: <u>1080-35</u>		<input checked="" type="checkbox"/> 10 business days (Standard) <input type="checkbox"/> 3 business days <input type="checkbox"/> 2 Business Days <input type="checkbox"/> 1 Business Day		GRO/BTEX		NOT IN COOLERS		Comments:	
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:		
MSN3C 1-2		8/31/10	4:40p	G	S	1	RRO AK103		
MSN2B SURFACE			5:00p			1	GRO/BTEX		
MSN2B 0-1			5:03p			1	DRO/RRO		
MSN2B 1-2			5:05p			1	TOTAL METALS 6020		
DUPLICATE 5			5:08p			1	← GONVATD		
DUPLICATE 6			5:12p			1	NOT IN COOLERS		
DUPLICATE 7			5:15p			1			
DOWSTREAM		8/31/10	6:43p	G	S/W	6	HCL IN DRO WATER		
DOWSTREAM		8/31/10	7:00p	G	S/W	6	HCL IN DRO WATER		
MS OUTSIDE WEST 0-1		8/31/10	2:20 pm	G	S	1			
MS OUTSIDE EAST 0-1		8/31/10	2:14 pm	G	S	1			
MS OUTSIDE WESTY 0-1		8/31/10	2:09 pm	G	S	1			

Non-Hazard Flammable Skin Irritant Poison B Unknown
 Possible Hazard Identification
 Special Instructions/QC Requirements & Comments [Please note if there is Mercury in the sample.]
 FUEL AIR RELATED COMPOUNDS.
 WATER SAMPLES NEED TO BE LAB PROCESSED BY HNDG COOLER TEMP 4.2°C
 CRYOTOPED SEAL WATER TEMP BEARS 4.2°C
 Relinquished by: [Signature] Company: TPEC Date/Time: 9/3/10 9:50 AM
 Relinquished by: [Signature] Company: AAI Date/Time: 9/3/10 10:15 AM
 Relinquished by: _____ Company: _____ Date/Time: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Received by: [Signature] Company: AAI Date/Time: 9/3/10 10:15 AM

TRC101
913110
Blue Cooler
10-0062

CUSTODY SEAL



ENVIRONMENTAL SAMPLING SUPPLY
9601 San Leandro St. Oakland, CA 800-233-8425

Date: 9/3/10
Signature: [Signature]



Pace Analytical®
CUSTODY SEAL

SIGNATURE

JRE [Signature]
DATE 9/3/10



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 1956 Richardson Highway
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 TEL: (907) 488-1271 FAX: (907) 488-
 Website: www.alaska-analytical.com

Sample Receipt Checklist

Client Name: **TPECI01**

Date and Time Received: **9/3/2010 11:58:53 AM**

Work Order Number **1009003**

RcptNo: **1**

Received by: **Kelley Lovejoy**

Completed by: *Kelley Lovejoy*

Reviewed by: *Kelley Lovejoy*

Completed Date: 10/4/2010 5:40:00 PM

Reviewed Date: 10/4/2010 5:40:04 PM

Carrier name: Client

- 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
- Are matrices correctly identified on Chain of custody? Yes No
- Is it clear what analyses were requested? Yes No
- Custody seals intact on sample bottles? Yes No Not Present
- Samples in proper container/bottle? Yes No
- Were correct preservatives used and noted? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- Were container labels complete (ID, Pres, Date)? Yes No
- All samples received within holding time? Yes No
- Was an attempt made to cool the samples? Yes No
- All samples received at a temp. of > 0° C to 6.0° C? Yes No
- Response when temperature is outside of range:
- Preservative added to bottles:
- Sample Temp. taken and recorded upon receipt? Yes No 4.2 To 4.2°
- Water - Were bubbles absent in VOC vials? Yes No No Vials
- Water - Was there Chlorine Present? Yes No NA
- Water - pH acceptable upon receipt? Yes No No Water
- Are Samples considered acceptable? Yes No
- Custody Seals present? Yes No
- Traffic Report or Packing Lists present? Yes No
- Airbill or Sticker? Air Bill Sticker Not Present
- Airbill No:
- Sample Tags Present? Yes No
- Sample Tags Listed on COC? Yes No
- Tag Numbers:
- Sample Condition? Intact Broken Leaking

Case Number:

SDG:

SAS:

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

SampID	ContainerID	Type	Org pH	Adj pH	Req Min pH	Req Max pH
1009003-001A	Container-1 of 1	Bottle				
1009003-002A	Container-1 of 1	Bottle				
1009003-003A	Container-1 of 1	Bottle				
1009003-004A	Container-1 of 1	Bottle				
1009003-005A	Container-1 of 1	Bottle				
1009003-006A	Container-1 of 1	Bottle				
1009003-007A	Container-1 of 1	Bottle				
1009003-008A	Container-1 of 1	Bottle				
1009003-009A	Container-1 of 1	Bottle				
1009003-010A	Container-1 of 1	Bottle				
1009003-011A	Container-1 of 1	Bottle				
1009003-012A	Container-1 of 1	Bottle				
1009003-013A	Container-1 of 1	Bottle				
1009003-014A	Container-1 of 1	Bottle				
1009003-015A	Container-1 of 1	Bottle				
1009003-016A	Container-1 of 1	Bottle				
1009003-017A	Container-1 of 1	Bottle				
1009003-019A	Container-1 of 1	Bottle				
1009003-020A	Container-1 of 1	Bottle				
1009003-021A	Container-1 of 1	Bottle				
1009003-022A	Container-1 of 1	Bottle				
1009003-023A	Container-1 of 1	Bottle				
1009003-024A	Container-1 of 1	Bottle				
1009003-025A	Container-1 of 1	Bottle				
1009003-026A	Container-1 of 1	Bottle				
1009003-027A	Container-1 of 1	Bottle				
1009003-028A	Container-1 of 1	Bottle				
1009003-029A	Container-1 of 1	Bottle				
1009003-030A	Container-1 of 1	Bottle				
1009003-031A	Container-1 of 1	Bottle				
1009003-032A	Container-1 of 2	Bottle				
1009003-032A	Container-2 of 2	Bottle				
1009003-032B	Container-1 of 3	Bottle				
1009003-032B	Container-2 of 3	Bottle				

SampID	ContainerID	Type	Org pH	Adj pH	Req Min pH	Req Max pH
1009003-032B	Container-3 of 3f	Bottle				
1009003-033A	Container-1 of 2	Bottle				
1009003-033A	Container-2 of 2	Bottle				
1009003-033B	Container-1 of 3	Bottle				
1009003-033B	Container-2 of 3	Bottle				
1009003-033B	Container-3 of 3	Bottle				
1009003-034A	Container-1 of 1	Bottle				
1009003-035A	Container-1 of 1	Bottle				
1009003-036A	Container-1 of 1	Bottle				
1009003-037A	Container-1 of 1	Bottle				
1009003-038A	Container-1 of 1	Bottle				
1009003-039A	Container-1 of 1	Bottle				
1009003-039B	Container-1 of 1	Bottle				
1009003-040A	Container-1 of 1	Bottle				
1009003-040B	Container-1 of 1	Bottle				
1009003-041A	Container-1 of 1	Bottle				
1009003-042A	Container-1 of 3	Bottle				
1009003-042A	Container-2 of 3	Bottle				
1009003-042A	Container-3 of 3	Bottle				

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good	Yes		9/3/2010	Eddie Packee

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client Contacted? Yes No Person Contacted: _____

Contact Mode: Phone: Fax: Email: In Person: _____

Client Instructions: _____

Date Contacted: _____ Contacted By: _____

Regarding: _____

Comments:
Sample N1 East 1-2 not found. Client was notified.
Was an attempt made to cool the sample?
The lab did not attempt to cool the samples.
Samples were received with gel ice in the cooler. Temp. Blank and Cooler were within the ADEC acceptable range.

CorrectiveAction: _____

Laboratory Data Review Checklist

Completed by:

Title:

Melissa S. Shippey

Date:

January 25, 2011

CS Report Name:

Utica Mine Camp Site Cleanup

Report Date:

October 4, 2010

Consultant Firm:

Travis/Peterson Environmental Consulting, Inc.

Laboratory Name:

Alaska Analytical Laboratory

Laboratory Report Number:

ADEC File Number: 510.38.002

ADEC RecKey Number:

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No

Comments:

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No

Comments:

The metals samples were transferred to Pace.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No

Comments:

b. Correct analyses requested?

Yes No

Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes No Comments:

Cooler temperature was 4.2°C and temperature blank temperature was 4.2°C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No Comments:

Yes except where noted that free flowing methanol was reduced by matrix interference. See notes in Case Narrative regarding sample prep.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No Comments:

Samples were all in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No Comments:

e. Data quality or usability affected? Explain.

Comments:

No

4. Case Narrative

a. Present and understandable?

Yes No Comments:

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b. Discrepancies, errors or QC failures identified by the lab?

Yes No

Comments:

There were Prep Comments on five of the soil samples that indicated the soil matrix did not extract well and was hard and compacted and would not allow solvent and pressure to complete extraction.

- For SW5035 Sample 1009003 – 040B: second vial of MeOH added due to significant reduction of free flowing methanol.

-For SW3545 Sample 1009001-010A: sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1mL versus ~50mL before concentrating. Final analytical result over the MCL.

- For SW3545, Sample 1009003 – 026A, Sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1 mL versus ~50 mL before concentrating. Final analytical result over the MCL.

-For SW3545, Sample 1009003-029A, sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 2mL versus ~50 mL before concentrating. Final analytical result over the MCL.

-For SW3545, sample 1009003-007A, very hard soil, had to use half the amount for the extraction.

-For SW3545, sample 1009003-010A, sample did not extract well, hard soil compacted and wouldn't allow solvent and pressure to complete extraction. Only extracted 1 mL versus ~50mL before concentrating.

AK101S: Sample matrix indicates that there may be a high concentration of magnesium and/or calcium carbonate in acidic soil. When methanol is added to the sample it effervesces; expands and reacts with and/or absorbs the surrogates when the chemical reaction occurs. Consequently, the amount of free flowing methanol is greatly reduced. The samples with this matrix effect have been flagged S04 in the report.

c. Were all corrective actions documented?

Yes No

Comments:

See above notes. Some samples extracted with low volume of methanol and some had methanol added by the lab. TPECI personnel would like to note that this occurrence has happened on other projects within the state of Alaska and that it is not necessarily indicative that something unique or unusual happened while collecting samples at the Utica Mine site. Rather it is more indicative of the sample material causing a matrix interference and reduction in available methanol for the lab to use in sample analysis.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The samples with low free flowing methanol were still analyzed by the lab.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No

Comments:

b. All applicable holding times met?

Yes No

Comments:

c. All soils reported on a dry weight basis?

Yes No

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes No

Comments:

e. Data quality or usability affected?

Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No

Comments:

ii. All method blank results less than PQL?

Yes No

Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

v. Data quality or usability affected? Explain.

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No Comments:

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No Comments:

No metals samples analyzed by AAL in this batch. All metals samples forwarded to Pace Laboratory in Seattle, WA.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No Comments:

All LCS/LCSD percent recoveries and RPD's were within acceptance criterion. All were good.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No Comments:

All RPDs for QC samples were within acceptance range.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No Comments:

N/A

- Data quality or usability affected? (Use comment box to explain)

Comments:

N/A

c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No Comments:

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No Comments:

N/A

- iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

N/A

- d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

- i. One trip blank reported per matrix, analysis and cooler?

Yes No Comments:

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No Comments:

Only one cooler used for petroleum related samples.

- iii. All results less than PQL?

Yes No Comments:

- iv. If above PQL, what samples are affected?

Comments:

N/A

- v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No Comments:

Duplicates number 5, 6, and 7 were submitted for AK103 analysis. No duplicates were collected for GRO/BTEX or DRO analyses.

ii. Submitted blind to lab?

Yes No Comments:

No – TPECI personnel in the field labeled the duplicates as duplicates.

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No Comments:

The RPD for Duplicate #5 and its corresponding primary sample MSN2B – surface was 139%. All remaining duplicate samples and their corresponding primary samples were non-detect for RRO therefore RPDs were not calculated.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The RPD for Dup 5 and MSN2B – surface is out of acceptance range. Surrogate recoveries for both of these samples were also out of range due to the dilutions that were used since they were hot samples. Either way the samples were well above the ADEC cleanup levels for RRO and still should be considered an indicator of relative contaminant levels in their respective sampling zones.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

Yes No Not Applicable

i. All results less than PQL?

Yes No Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No

Comments:

N/A



Alaska Analytical Laboratory
1956 Richardson Highway
North Pole, Alaska 99705
TEL: (907) 488-1271 FAX: (907) 488-
Website: www.alaska-analytical-lab.com

October 02, 2010

Melissa Shippey
Travis/Peterson Environmental Consulting Inc.
329 Second Street
Fairbanks, Alaska 99701
TEL: (907) 455-7225
FAX: (907) 455-7228

RE: Utica Mine 1080-35

Order No.: 1009002

Dear Melissa Shippey:

Alaska Analytical Laboratory received 65 sample(s) on 9/3/2010 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative. Analytical results designated with a "J" qualifier are estimated and represent a detection above the Method Detection Limit (MDL) and less than the Reporting Limit (PQL). These analytes are not reviewed nor narrated as to whether they are laboratory artifacts.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

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

Sincerely,

A handwritten signature in black ink that reads "Kelley Lovejoy". The signature is written in a cursive, flowing style.

Kelley Lovejoy
Chief Chemist
1956 Richardson Highway
North Pole, Alaska 99705

September 24, 2010

Kelley Lovejoy
Alaska Analytical Laboratory
1956 Richardson Highway
North Pole, AK 99705

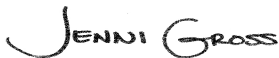
RE: Project: Utica Mine 1080-35
Pace Project No.: 254835

Dear Kelley Lovejoy:

Enclosed are the analytical results for sample(s) received by the laboratory on September 04, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross for
Regina SteMarie
regina.stemarie@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

Alaska Certification #: UST-078

Alaska Certification #MN00064

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

EPA Region 8 Certification #: Pace

Florida/NELAP Certification #: E87605

Georgia Certification #: 959

Idaho Certification #: MN00064

Illinois Certification #: 200011

Iowa Certification #: 368

Kansas Certification #: E-10167

Louisiana Certification #: 03086

Louisiana Certification #: LA080009

Maine Certification #: 2007029

Maryland Certification #: 322

Michigan DEQ Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT CERT0092

Nevada Certification #: MN_00064

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New Mexico Certification #: Pace

New York Certification #: 11647

North Carolina Certification #: 530

North Dakota Certification #: R-036

North Dakota Certification #: R-036A

Ohio VAP Certification #: CL101

Oklahoma Certification #: D9921

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Tennessee Certification #: 02818

Texas Certification #: T104704192

Washington Certification #: C754

Wisconsin Certification #: 999407970

Washington Certification IDs

940 South Harney Street, Seattle, WA 98108

Alaska CS Certification #: UST-025

Alaska Drinking Water VOC Certification #: WA01230

Alaska Drinking Water Micro Certification #: WA01230

California Certification #: 01153CA

Florida/NELAP Certification #: E87617

Oregon Certification #: WA200007

Washington Certification #: C1229

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35
Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835001	1A Surface	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835002	1A 0-1	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835003	1A 1-2	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835004	1B Surface	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835005	1B 0-1	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835006	1B 0-2	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835007	1C Surface	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835008	1C 0-1	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35
Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835009	1C 0-2	EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835010	1-D Surface	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
254835011	1-D 0-1	EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835012	1-D 1-2	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835013	2A Surface	EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
254835014	2A 0-1	EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835015	2A 1-2	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835016	2B 0-1	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835017	2C Surface	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835018	2C 0-1	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835019	2C 1-2	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835020	2D Surface	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835021	2D 0-1	ASTM D2974-87	KJ1	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835022	2D 1-2	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835023	3A 0-1	% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835024	3B 0-1	EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835025	3C Surface	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
254835026	3C 0-1	EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
254835027	3C 1-2	EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835028	4B 0-1	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BPR	7	PASI-S
254835029	4C Surface	EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835030	4C 0-1	EPA 7471	BGA	1	PASI-S

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35
Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835031	4C 1-2	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835032	4D Surface	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835033	4D 0-1	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835034	Goldhouse North 0-6	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BPR	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835035	Goldhouse East 0-6"	EPA 7471	BGA	1	PASI-S
		% Moisture	JDL	1	PASI-M
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835036	Goldhouse West	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
254835037	Goldhouse South 0-6"	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35
Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835038	LFN1B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835039	LFN1A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835040	LFN2B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835041	LFN2A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835042	LFN3B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835043	LFN3A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835044	LFN4B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	KJ1	1	PASI-S
254835045	LFN4A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835046	LFN5B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835047	LFNFA	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835048	LFN6B	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835049	LFN6A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835050	LFN7B	EPA 6020	CJS	7	PASI-M

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35
Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835051	LFN7A	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
254835052	LFN8B	ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835053	LFN8A	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
254835054	Alt SE	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
254835055	Alt NE	ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
254835056	Alt SW	EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
254835057	Alt NW	EPA 7471	BGA	1	PASI-S
		ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
254835058	DUP-1	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835059	DUP-2	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835060	DUP-3	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S

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SAMPLE ANALYTE COUNT

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254835061	DUP-4	ASTM D2974-87	DMT	1	PASI-S
		EPA 6010	BGA	7	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S
		EPA 7471	BGA	1	PASI-S
254835062	UPSTREAM	ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
254835063	DOWNSTREAM	ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	CJS	7	PASI-M
		EPA 7471	BGA	1	PASI-S
254835064	UPSTREAM	ASTM D2974-87	DMT	1	PASI-S
		EPA 6020	RJS	7	PASI-M
254835065	DOWNSTREAM	EPA 7470	BGA	1	PASI-S
		EPA 6020	RJS	7	PASI-M
		EPA 7470	BGA	1	PASI-S

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 6010

Description: 6010 MET ICP, TCLP

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

41 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: MPRP/1771

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 1-D 0-1 (Lab ID: 254835011)
 - Silver
- 1A Surface (Lab ID: 254835001)
 - Silver
- 1B 0-1 (Lab ID: 254835005)
 - Silver
- 1B Surface (Lab ID: 254835004)
 - Silver
- 1C 0-1 (Lab ID: 254835008)
 - Silver

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 6010

Description: 6010 MET ICP, TCLP

Client: Alaska Analytical Lab

Date: September 24, 2010

Analyte Comments:

QC Batch: MPRP/1771

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 1C 0-2 (Lab ID: 254835009)
 - Silver
- 1C Surface (Lab ID: 254835007)
 - Silver
- 2A 0-1 (Lab ID: 254835014)
 - Silver
- 2A 1-2 (Lab ID: 254835015)
 - Silver
- 2A Surface (Lab ID: 254835013)
 - Silver
- 2B 0-1 (Lab ID: 254835016)
 - Silver
- 2C Surface (Lab ID: 254835017)
 - Silver

QC Batch: MPRP/1774

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 2D Surface (Lab ID: 254835020)
 - Silver
- 3C 0-1 (Lab ID: 254835026)
 - Silver
- 4C 0-1 (Lab ID: 254835030)
 - Silver
- 4D 0-1 (Lab ID: 254835033)
 - Silver
- 4D Surface (Lab ID: 254835032)
 - Silver
- Goldhouse North 0-6 (Lab ID: 254835034)
 - Silver

QC Batch: MPRP/1775

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- DUP-1 (Lab ID: 254835058)
 - Silver
- DUP-3 (Lab ID: 254835060)
 - Silver
- Goldhouse East 0-6" (Lab ID: 254835035)
 - Silver
- Goldhouse South 0-6" (Lab ID: 254835037)
 - Silver
- Goldhouse West (Lab ID: 254835036)
 - Silver

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 6020

Description: 6020 MET ICPMS

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

63 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: ICPM/22290

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10137902008,254856001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 852397)
 - Selenium
 - Silver
- MS (Lab ID: 852398)
 - Barium
 - Silver
- MSD (Lab ID: 852399)
 - Silver

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 6020

Description: 6020 MET ICPMS

Client: Alaska Analytical Lab

Date: September 24, 2010

Analyte Comments:

QC Batch: ICPM/22231

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 851223)
- Lead

QC Batch: ICPM/22232

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 851227)
- Lead
- Arsenic
- Lead
- MSD (Lab ID: 851228)
- Lead

QC Batch: ICPM/22233

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MS (Lab ID: 851232)
- Arsenic
- Lead
- MSD (Lab ID: 851233)
- Arsenic
- Lead

General Information:

2 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 6020

Description: 6020 MET ICPMS

Client: Alaska Analytical Lab

Date: September 24, 2010

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: ICPM/22290

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10137902008,254856001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 852397)
 - Selenium
 - Silver
- MS (Lab ID: 852398)
 - Barium
 - Silver
- MSD (Lab ID: 852399)
 - Silver

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: ICPM/22231

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 851223)
 - Lead

QC Batch: ICPM/22232

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 851227)
 - Lead
 - Arsenic
 - Lead
- MSD (Lab ID: 851228)
 - Lead

QC Batch: ICPM/22233

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MS (Lab ID: 851232)
 - Arsenic
 - Lead
- MSD (Lab ID: 851233)
 - Arsenic
 - Lead

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 7470

Description: 7470 Mercury, TCLP

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

41 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: MERP/1264

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 1-D 0-1 (Lab ID: 254835011)
 - Mercury
- 1A Surface (Lab ID: 254835001)
 - Mercury
- 1B 0-1 (Lab ID: 254835005)
 - Mercury
- 1B Surface (Lab ID: 254835004)
 - Mercury
- 1C 0-1 (Lab ID: 254835008)
 - Mercury

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 7470

Description: 7470 Mercury, TCLP

Client: Alaska Analytical Lab

Date: September 24, 2010

Analyte Comments:

QC Batch: MERP/1264

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 1C 0-2 (Lab ID: 254835009)
 - Mercury
- 1C Surface (Lab ID: 254835007)
 - Mercury
- 2A 0-1 (Lab ID: 254835014)
 - Mercury
- 2A 1-2 (Lab ID: 254835015)
 - Mercury
- 2A Surface (Lab ID: 254835013)
 - Mercury
- 2B 0-1 (Lab ID: 254835016)
 - Mercury
- 2C Surface (Lab ID: 254835017)
 - Mercury

QC Batch: MERP/1265

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- 2D Surface (Lab ID: 254835020)
 - Mercury
- 3C 0-1 (Lab ID: 254835026)
 - Mercury
- 4C 0-1 (Lab ID: 254835030)
 - Mercury
- 4D 0-1 (Lab ID: 254835033)
 - Mercury
- 4D Surface (Lab ID: 254835032)
 - Mercury
- Goldhouse North 0-6 (Lab ID: 254835034)
 - Mercury

QC Batch: MERP/1266

1n: Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.

- DUP-3 (Lab ID: 254835060)
 - Mercury
- Goldhouse East 0-6" (Lab ID: 254835035)
 - Mercury
- Goldhouse South 0-6" (Lab ID: 254835037)
 - Mercury
- Goldhouse West (Lab ID: 254835036)
 - Mercury

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 7470

Description: 7470 Mercury

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

2 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 7471

Description: 7471 Mercury

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

63 samples were analyzed for EPA 7471. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7471 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/1254

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 254835029

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 39792)
 - Mercury
- MSD (Lab ID: 39793)
 - Mercury

QC Batch: MERP/1262

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 254835001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 40626)
 - Mercury
- MSD (Lab ID: 40627)
 - Mercury

QC Batch: MERP/1267

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 254835018

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 41341)

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: EPA 7471

Description: 7471 Mercury

Client: Alaska Analytical Lab

Date: September 24, 2010

QC Batch: MERP/1267

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 254835018

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Mercury
- MSD (Lab ID: 41342)
- Mercury

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Method: % Moisture

Description: Dry Weight

Client: Alaska Analytical Lab

Date: September 24, 2010

General Information:

11 samples were analyzed for % Moisture. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1A Surface **Lab ID: 254835001** Collected: 08/31/10 10:04 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 16:51	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 16:51	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 16:51	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 16:51	7440-47-3	
Lead	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 16:51	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 16:51	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 16:51	7440-22-4	1n

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	30.3	mg/kg	0.57	20	09/15/10 11:42	09/19/10 20:42	7440-38-2	
Barium	61.0	mg/kg	0.34	20	09/15/10 11:42	09/19/10 20:42	7440-39-3	
Cadmium	0.53	mg/kg	0.092	20	09/15/10 11:42	09/19/10 20:42	7440-43-9	
Chromium	15.5	mg/kg	0.57	20	09/15/10 11:42	09/19/10 20:42	7440-47-3	
Lead	74.1	mg/kg	0.57	20	09/15/10 11:42	09/19/10 20:42	7439-92-1	
Selenium	ND	mg/kg	0.57	20	09/15/10 11:42	09/19/10 20:42	7782-49-2	
Silver	ND	mg/kg	0.57	20	09/15/10 11:42	09/19/10 20:42	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:00	7439-97-6	1n
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	9.8	mg/kg	2.9	25	09/16/10 09:32	09/20/10 08:40	7439-97-6	
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Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	16.9	%	0.10	1		09/14/10 16:30		
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Sample: 1A 0-1 **Lab ID: 254835002** Collected: 08/31/10 10:13 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:07	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:07	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:07	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:07	7440-47-3	
Lead	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:07	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:07	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:07	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1A 0-1 **Lab ID: 254835002** Collected: 08/31/10 10:13 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	26.7	mg/kg	0.44	20	09/15/10 11:42	09/19/10 20:46	7440-38-2	
Barium	36.6	mg/kg	0.26	20	09/15/10 11:42	09/19/10 20:46	7440-39-3	
Cadmium	0.28	mg/kg	0.070	20	09/15/10 11:42	09/19/10 20:46	7440-43-9	
Chromium	10.1	mg/kg	0.44	20	09/15/10 11:42	09/19/10 20:46	7440-47-3	
Lead	23.8	mg/kg	0.44	20	09/15/10 11:42	09/19/10 20:46	7439-92-1	
Selenium	1.0	mg/kg	0.44	20	09/15/10 11:42	09/19/10 20:46	7782-49-2	
Silver	ND	mg/kg	0.44	20	09/15/10 11:42	09/19/10 20:46	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:06	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	4.4	mg/kg	2.6	25	09/16/10 09:32	09/20/10 08:47	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	5.3	%	0.10	1		09/14/10 16:33		

Sample: 1A 1-2 **Lab ID: 254835003** Collected: 08/31/10 10:17 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:10	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:10	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:10	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:10	7440-47-3	
Lead	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:10	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:10	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:10	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	18.2	mg/kg	0.40	20	09/15/10 11:42	09/19/10 21:03	7440-38-2	
Barium	25.9	mg/kg	0.24	20	09/15/10 11:42	09/19/10 21:03	7440-39-3	
Cadmium	0.24	mg/kg	0.064	20	09/15/10 11:42	09/19/10 21:03	7440-43-9	
Chromium	9.7	mg/kg	0.40	20	09/15/10 11:42	09/19/10 21:03	7440-47-3	
Lead	12.3	mg/kg	0.40	20	09/15/10 11:42	09/19/10 21:03	7439-92-1	
Selenium	0.40	mg/kg	0.40	20	09/15/10 11:42	09/19/10 21:03	7782-49-2	
Silver	ND	mg/kg	0.40	20	09/15/10 11:42	09/19/10 21:03	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35
Pace Project No.: 254835

Sample: 1A 1-2 **Lab ID: 254835003** Collected: 08/31/10 10:17 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:08	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	1.5	mg/kg	0.52	5	09/16/10 09:32	09/20/10 10:16	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	4.3	%	0.10	1		09/14/10 16:33		

Sample: 1B Surface **Lab ID: 254835004** Collected: 08/31/10 10:19 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:13	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:13	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:13	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:13	7440-47-3	
Lead	2.9	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:13	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:13	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:13	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	467	mg/kg	10.8	500	09/15/10 11:42	09/19/10 21:07	7440-38-2	
Barium	143	mg/kg	0.26	20	09/15/10 11:42	09/19/10 22:25	7440-39-3	
Cadmium	1.3	mg/kg	0.069	20	09/15/10 11:42	09/19/10 22:25	7440-43-9	
Chromium	20.8	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:25	7440-47-3	
Lead	1470	mg/kg	10.8	500	09/15/10 11:42	09/19/10 21:07	7439-92-1	
Selenium	2.6	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:25	7782-49-2	
Silver	3.5	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:25	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:10	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	171	mg/kg	23.8	200	09/16/10 09:32	09/20/10 08:51	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	18.7	%	0.10	1		09/14/10 16:34		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1B 0-1 **Lab ID: 254835005** Collected: 08/31/10 10:18 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:16	7440-38-2	
Barium	ND mg/L		5.0	1	09/16/10 16:55	09/17/10 17:16	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 17:16	7440-43-9	
Chromium	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:16	7440-47-3	
Lead	1.4 mg/L		1.0	1	09/16/10 16:55	09/17/10 17:16	7439-92-1	
Selenium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 17:16	7782-49-2	
Silver	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:16	7440-22-4	1n

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	1010 mg/kg		24.0	1000	09/15/10 11:42	09/19/10 21:11	7440-38-2	
Barium	218 mg/kg		0.29	20	09/15/10 11:42	09/19/10 22:29	7440-39-3	
Cadmium	1.5 mg/kg		0.077	20	09/15/10 11:42	09/19/10 22:29	7440-43-9	
Chromium	40.1 mg/kg		0.48	20	09/15/10 11:42	09/19/10 22:29	7440-47-3	
Lead	2740 mg/kg		24.0	1000	09/15/10 11:42	09/19/10 21:11	7439-92-1	
Selenium	5.2 mg/kg		0.48	20	09/15/10 11:42	09/19/10 22:29	7782-49-2	
Silver	12.1 mg/kg		0.48	20	09/15/10 11:42	09/19/10 22:29	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Mercury	ND ug/L		8.3	1	09/20/10 11:33	09/21/10 12:13	7439-97-6	1n
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	238 mg/kg		22.9	200	09/16/10 09:32	09/20/10 08:54	7439-97-6	
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Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	15.4 %		0.10	1		09/14/10 16:35		
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Sample: 1B 0-2 **Lab ID: 254835006** Collected: 08/31/10 10:21 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:19	7440-38-2	
Barium	ND mg/L		5.0	1	09/16/10 16:55	09/17/10 17:19	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 17:19	7440-43-9	
Chromium	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:19	7440-47-3	
Lead	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:19	7439-92-1	
Selenium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 17:19	7782-49-2	
Silver	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 17:19	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1B 0-2 **Lab ID: 254835006** Collected: 08/31/10 10:21 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	59.7	mg/kg	0.48	20	09/15/10 11:42	09/19/10 21:15	7440-38-2	M6
Barium	55.5	mg/kg	0.29	20	09/15/10 11:42	09/19/10 21:15	7440-39-3	M6
Cadmium	0.50	mg/kg	0.077	20	09/15/10 11:42	09/19/10 21:15	7440-43-9	
Chromium	12.4	mg/kg	0.48	20	09/15/10 11:42	09/19/10 21:15	7440-47-3	
Lead	122	mg/kg	0.48	20	09/15/10 11:42	09/19/10 21:15	7439-92-1	M6
Selenium	1.0	mg/kg	0.48	20	09/15/10 11:42	09/19/10 21:15	7782-49-2	
Silver	0.65	mg/kg	0.48	20	09/15/10 11:42	09/19/10 21:15	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:19	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	19.8	mg/kg	5.2	50	09/16/10 09:32	09/20/10 09:00	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	10.4	%	0.10	1		09/14/10 16:36		

Sample: 1C Surface **Lab ID: 254835007** Collected: 08/31/10 10:23 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:23	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:23	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:23	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:23	7440-47-3	
Lead	86.5	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:23	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:23	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:23	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	590	mg/kg	40.0	2000	09/15/10 11:42	09/19/10 21:23	7440-38-2	
Barium	106	mg/kg	0.24	20	09/15/10 11:42	09/19/10 22:33	7440-39-3	
Cadmium	1.7	mg/kg	0.064	20	09/15/10 11:42	09/19/10 22:33	7440-43-9	
Chromium	53.4	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:33	7440-47-3	
Lead	8740	mg/kg	40.0	2000	09/15/10 11:42	09/19/10 21:23	7439-92-1	
Selenium	4.1	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:33	7782-49-2	
Silver	24.3	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:33	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1C Surface **Lab ID: 254835007** Collected: 08/31/10 10:23 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:21	7439-97-6	1n
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	500	mg/kg	104	1000	09/16/10 09:32	09/20/10 09:02	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	6.7	%	0.10	1		09/14/10 16:37		

Sample: 1C 0-1 **Lab ID: 254835008** Collected: 08/31/10 10:25 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:26	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:26	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:26	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:26	7440-47-3	
Lead	86.0	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:26	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:26	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:26	7440-22-4	1n
6020 MET ICPMS								
Analytical Method: EPA 6020								
Arsenic	717	mg/kg	50.3	2000	09/15/10 11:42	09/19/10 21:28	7440-38-2	
Barium	105	mg/kg	0.30	20	09/15/10 11:42	09/19/10 22:37	7440-39-3	
Cadmium	1.9	mg/kg	0.080	20	09/15/10 11:42	09/19/10 22:37	7440-43-9	
Chromium	28.0	mg/kg	0.50	20	09/15/10 11:42	09/19/10 22:37	7440-47-3	
Lead	6050	mg/kg	50.3	2000	09/15/10 11:42	09/19/10 21:28	7439-92-1	
Selenium	4.5	mg/kg	0.50	20	09/15/10 11:42	09/19/10 22:37	7782-49-2	
Silver	12.4	mg/kg	0.50	20	09/15/10 11:42	09/19/10 22:37	7440-22-4	
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:23	7439-97-6	1n
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	312	mg/kg	107	1000	09/16/10 09:32	09/20/10 09:04	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	12.0	%	0.10	1		09/14/10 16:38		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1C 0-2 **Lab ID: 254835009** Collected: 08/31/10 10:27 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:29	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:29	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:29	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:29	7440-47-3	
Lead	3.4	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:29	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:29	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:29	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	70.9	mg/kg	0.47	20	09/15/10 11:42	09/19/10 22:42	7440-38-2	
Barium	46.8	mg/kg	0.28	20	09/15/10 11:42	09/19/10 22:42	7440-39-3	
Cadmium	1.4	mg/kg	0.076	20	09/15/10 11:42	09/19/10 22:42	7440-43-9	
Chromium	12.1	mg/kg	0.47	20	09/15/10 11:42	09/19/10 22:42	7440-47-3	
Lead	680	mg/kg	47.4	2000	09/15/10 11:42	09/19/10 21:32	7439-92-1	
Selenium	1.5	mg/kg	0.47	20	09/15/10 11:42	09/19/10 22:42	7782-49-2	
Silver	1.4	mg/kg	0.47	20	09/15/10 11:42	09/19/10 22:42	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:25	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	11.0	mg/kg	5.3	50	09/16/10 09:32	09/20/10 09:07	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.0	%	0.10	1		09/14/10 16:38		

Sample: 1-D Surface **Lab ID: 254835010** Collected: 08/31/10 10:31 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:32	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:32	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:32	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:32	7440-47-3	
Lead	8.1	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:32	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:32	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:32	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 1-D Surface **Lab ID: 254835010** Collected: 08/31/10 10:31 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	1620	mg/kg	56.4	2000	09/15/10 11:42	09/19/10 21:36	7440-38-2	
Barium	71.4	mg/kg	0.34	20	09/15/10 11:42	09/19/10 22:46	7440-39-3	
Cadmium	1.5	mg/kg	0.090	20	09/15/10 11:42	09/19/10 22:46	7440-43-9	
Chromium	40.7	mg/kg	0.56	20	09/15/10 11:42	09/19/10 22:46	7440-47-3	
Lead	2860	mg/kg	56.4	2000	09/15/10 11:42	09/19/10 21:36	7439-92-1	
Selenium	3.7	mg/kg	0.56	20	09/15/10 11:42	09/19/10 22:46	7782-49-2	
Silver	14.6	mg/kg	0.56	20	09/15/10 11:42	09/19/10 22:46	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	34.0	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:27	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	1250	mg/kg	544	5000	09/16/10 09:32	09/20/10 09:09	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	13.9	%	0.10	1		09/14/10 16:39		

Sample: 1-D 0-1 **Lab ID: 254835011** Collected: 08/31/10 10:29 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:35	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 17:35	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:35	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:35	7440-47-3	
Lead	1.0	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:35	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 17:35	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 17:35	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	217	mg/kg	4.2	200	09/15/10 11:42	09/19/10 21:40	7440-38-2	
Barium	38.2	mg/kg	0.25	20	09/15/10 11:42	09/19/10 22:50	7440-39-3	
Cadmium	0.60	mg/kg	0.068	20	09/15/10 11:42	09/19/10 22:50	7440-43-9	
Chromium	11.0	mg/kg	0.42	20	09/15/10 11:42	09/19/10 22:50	7440-47-3	
Lead	694	mg/kg	4.2	200	09/15/10 11:42	09/19/10 21:40	7439-92-1	
Selenium	1.4	mg/kg	0.42	20	09/15/10 11:42	09/19/10 22:50	7782-49-2	
Silver	1.8	mg/kg	0.42	20	09/15/10 11:42	09/19/10 22:50	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35
Pace Project No.: 254835

Sample: 1-D 0-1 **Lab ID: 254835011** Collected: 08/31/10 10:29 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:29	7439-97-6	1n
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	108	mg/kg	10.8	100	09/16/10 09:32	09/20/10 09:11	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	7.5	%	0.10	1		09/14/10 16:40		

Sample: 1-D 1-2 **Lab ID: 254835012** Collected: 08/31/10 10:32 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 21:52	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 21:52	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 21:52	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 21:52	7440-47-3	
Lead	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 21:52	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 21:52	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 21:52	7440-22-4	
6020 MET ICPMS								
Analytical Method: EPA 6020								
Arsenic	98.6	mg/kg	0.36	20	09/15/10 11:42	09/19/10 21:56	7440-38-2	
Barium	39.8	mg/kg	0.22	20	09/15/10 11:42	09/19/10 21:56	7440-39-3	
Cadmium	0.36	mg/kg	0.058	20	09/15/10 11:42	09/19/10 21:56	7440-43-9	
Chromium	10.3	mg/kg	0.36	20	09/15/10 11:42	09/19/10 21:56	7440-47-3	
Lead	136	mg/kg	0.36	20	09/15/10 11:42	09/19/10 21:56	7439-92-1	
Selenium	0.94	mg/kg	0.36	20	09/15/10 11:42	09/19/10 21:56	7782-49-2	
Silver	0.78	mg/kg	0.36	20	09/15/10 11:42	09/19/10 21:56	7440-22-4	
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/15/10 16:43								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:31	7439-97-6	
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	99.2	mg/kg	10.0	100	09/16/10 09:32	09/20/10 09:13	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	6.4	%	0.10	1		09/14/10 16:42		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2A Surface **Lab ID: 254835013** Collected: 08/31/10 10:49 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:55	7440-38-2	
Barium	ND mg/L		5.0	1	09/16/10 16:55	09/17/10 21:55	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 21:55	7440-43-9	
Chromium	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:55	7440-47-3	
Lead	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:55	7439-92-1	
Selenium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 21:55	7782-49-2	
Silver	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:55	7440-22-4	1n

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	40.0 mg/kg		0.40	20	09/15/10 11:42	09/19/10 22:00	7440-38-2	
Barium	63.2 mg/kg		0.24	20	09/15/10 11:42	09/19/10 22:00	7440-39-3	
Cadmium	0.57 mg/kg		0.063	20	09/15/10 11:42	09/19/10 22:00	7440-43-9	
Chromium	12.0 mg/kg		0.40	20	09/15/10 11:42	09/19/10 22:00	7440-47-3	
Lead	69.7 mg/kg		0.40	20	09/15/10 11:42	09/19/10 22:00	7439-92-1	
Selenium	0.82 mg/kg		0.40	20	09/15/10 11:42	09/19/10 22:00	7782-49-2	
Silver	ND mg/kg		0.40	20	09/15/10 11:42	09/19/10 22:00	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Mercury	ND ug/L		8.3	1	09/20/10 11:33	09/21/10 12:33	7439-97-6	1n
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	0.95 mg/kg		0.51	5	09/16/10 09:32	09/20/10 10:18	7439-97-6	
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Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.9 %		0.10	1		09/14/10 16:42		
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Sample: 2A 0-1 **Lab ID: 254835014** Collected: 08/31/10 10:50 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:58	7440-38-2	
Barium	ND mg/L		5.0	1	09/16/10 16:55	09/17/10 21:58	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 21:58	7440-43-9	
Chromium	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:58	7440-47-3	
Lead	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:58	7439-92-1	
Selenium	ND mg/L		0.20	1	09/16/10 16:55	09/17/10 21:58	7782-49-2	
Silver	ND mg/L		1.0	1	09/16/10 16:55	09/17/10 21:58	7440-22-4	1n

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2A 0-1 **Lab ID: 254835014** Collected: 08/31/10 10:50 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	27.2	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:05	7440-38-2	
Barium	38.6	mg/kg	0.24	20	09/15/10 11:42	09/19/10 22:05	7440-39-3	
Cadmium	0.35	mg/kg	0.064	20	09/15/10 11:42	09/19/10 22:05	7440-43-9	
Chromium	9.6	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:05	7440-47-3	
Lead	37.9	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:05	7439-92-1	
Selenium	0.45	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:05	7782-49-2	
Silver	ND	mg/kg	0.40	20	09/15/10 11:42	09/19/10 22:05	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:36	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	2.4	mg/kg	1.0	10	09/16/10 09:32	09/20/10 09:17	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	6.1	%	0.10	1		09/14/10 16:43		

Sample: 2A 1-2 **Lab ID: 254835015** Collected: 08/31/10 10:53 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:02	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 22:02	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:02	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:02	7440-47-3	
Lead	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:02	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:02	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:02	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	81.1	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:09	7440-38-2	
Barium	136	mg/kg	0.26	20	09/15/10 11:42	09/19/10 22:09	7440-39-3	
Cadmium	0.91	mg/kg	0.069	20	09/15/10 11:42	09/19/10 22:09	7440-43-9	
Chromium	16.7	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:09	7440-47-3	
Lead	226	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:09	7439-92-1	
Selenium	2.6	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:09	7782-49-2	
Silver	0.81	mg/kg	0.43	20	09/15/10 11:42	09/19/10 22:09	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35
Pace Project No.: 254835

Sample: 2A 1-2 **Lab ID: 254835015** Collected: 08/31/10 10:53 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:42	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	14.3	mg/kg	2.4	25	09/20/10 14:51	09/21/10 09:26	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	6.8	%	0.10	1		09/14/10 16:44		

Sample: 2B 0-1 **Lab ID: 254835016** Collected: 08/31/10 10:47 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:05	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 22:05	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:05	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:05	7440-47-3	
Lead	1.5	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:05	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:05	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:05	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	128	mg/kg	0.42	20	09/17/10 15:45	09/20/10 20:47	7440-38-2	M6
Barium	48.0	mg/kg	0.25	20	09/17/10 15:45	09/20/10 20:47	7440-39-3	M6
Cadmium	0.46	mg/kg	0.067	20	09/17/10 15:45	09/20/10 20:47	7440-43-9	
Chromium	11.5	mg/kg	0.42	20	09/17/10 15:45	09/20/10 20:47	7440-47-3	
Lead	375	mg/kg	2.1	100	09/17/10 15:45	09/20/10 20:51	7439-92-1	M6
Selenium	2.7	mg/kg	0.42	20	09/17/10 15:45	09/20/10 20:47	7782-49-2	
Silver	1.8	mg/kg	0.42	20	09/17/10 15:45	09/21/10 14:41	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/15/10 16:43						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:44	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	78.2	mg/kg	10.3	100	09/20/10 14:51	09/21/10 09:28	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	6.2	%	0.10	1		09/14/10 16:45		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2C Surface **Lab ID: 254835017** Collected: 08/31/10 10:41 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Arsenic	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:08	7440-38-2	
Barium	ND	mg/L	5.0	1	09/16/10 16:55	09/17/10 22:08	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:08	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:08	7440-47-3	
Lead	16.9	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:08	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/16/10 16:55	09/17/10 22:08	7782-49-2	
Silver	ND	mg/L	1.0	1	09/16/10 16:55	09/17/10 22:08	7440-22-4	1n

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	701	mg/kg	26.3	1000	09/17/10 15:45	09/21/10 14:45	7440-38-2	
Barium	98.2	mg/kg	0.32	20	09/17/10 15:45	09/20/10 20:55	7440-39-3	
Cadmium	1.4	mg/kg	0.084	20	09/17/10 15:45	09/20/10 20:55	7440-43-9	
Chromium	24.9	mg/kg	0.53	20	09/17/10 15:45	09/20/10 20:55	7440-47-3	
Lead	2420	mg/kg	26.3	1000	09/17/10 15:45	09/21/10 14:45	7439-92-1	
Selenium	4.0	mg/kg	0.53	20	09/17/10 15:45	09/20/10 20:55	7782-49-2	
Silver	11.7	mg/kg	0.53	20	09/17/10 15:45	09/21/10 16:44	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/15/10 16:43

Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:46	7439-97-6	1n
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	544	mg/kg	110	1000	09/20/10 14:51	09/21/10 10:10	7439-97-6	
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Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	9.4	%	0.10	1		09/14/10 16:46		
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Sample: 2C 0-1 **Lab ID: 254835018** Collected: 08/31/10 10:43 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 01:56	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 01:56	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 01:56	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 01:56	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 01:56	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 01:56	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 01:56	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2C 0-1 **Lab ID: 254835018** Collected: 08/31/10 10:43 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	980	mg/kg	20.8	1000	09/17/10 15:45	09/21/10 14:49	7440-38-2	
Barium	87.7	mg/kg	0.25	20	09/17/10 15:45	09/20/10 20:59	7440-39-3	
Cadmium	1.5	mg/kg	0.067	20	09/17/10 15:45	09/20/10 20:59	7440-43-9	
Chromium	25.4	mg/kg	0.42	20	09/17/10 15:45	09/20/10 20:59	7440-47-3	
Lead	2750	mg/kg	20.8	1000	09/17/10 15:45	09/21/10 14:49	7439-92-1	
Selenium	3.9	mg/kg	0.42	20	09/17/10 15:45	09/20/10 20:59	7782-49-2	
Silver	8.4	mg/kg	0.42	20	09/17/10 15:45	09/21/10 16:48	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:52	7439-97-6	
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	976	mg/kg	442	5000	09/20/10 14:51	09/21/10 09:33	7439-97-6	
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Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	8.3	%	0.10	1		09/14/10 16:47		
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Sample: 2C 1-2 **Lab ID: 254835019** Collected: 08/31/10 10:45 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/16/10 20:28								
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:06	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:06	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:06	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:06	7440-47-3	
Lead	1.2	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:06	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:06	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:06	7440-22-4	

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	913	mg/kg	22.2	1000	09/17/10 15:45	09/21/10 14:53	7440-38-2	
Barium	65.4	mg/kg	0.27	20	09/17/10 15:45	09/20/10 21:03	7440-39-3	
Cadmium	0.90	mg/kg	0.071	20	09/17/10 15:45	09/20/10 21:03	7440-43-9	
Chromium	21.2	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:03	7440-47-3	
Lead	1840	mg/kg	22.2	1000	09/17/10 15:45	09/21/10 14:53	7439-92-1	
Selenium	3.8	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:03	7782-49-2	
Silver	4.8	mg/kg	0.44	20	09/17/10 15:45	09/21/10 16:52	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35
Pace Project No.: 254835

Sample: 2C 1-2 **Lab ID: 254835019** Collected: 08/31/10 10:45 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 12:59	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	347	mg/kg	95.9	1000	09/20/10 14:51	09/21/10 09:39	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	10.6	%	0.10	1		09/14/10 16:48		

Sample: 2D Surface **Lab ID: 254835020** Collected: 08/31/10 10:38 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:15	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:15	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:15	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:15	7440-47-3	
Lead	3.5	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:15	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:15	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:15	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	1480	mg/kg	21.9	1000	09/17/10 15:45	09/21/10 14:58	7440-38-2	
Barium	80.1	mg/kg	0.26	20	09/17/10 15:45	09/20/10 21:08	7440-39-3	
Cadmium	1.4	mg/kg	0.070	20	09/17/10 15:45	09/20/10 21:08	7440-43-9	
Chromium	32.6	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:08	7440-47-3	
Lead	2000	mg/kg	21.9	1000	09/17/10 15:45	09/21/10 14:58	7439-92-1	
Selenium	3.8	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:08	7782-49-2	
Silver	22.6	mg/kg	0.44	20	09/17/10 15:45	09/21/10 16:56	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	8.8	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:05	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	648	mg/kg	112	1000	09/20/10 14:51	09/21/10 09:46	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	16.0	%	0.10	1		09/14/10 16:50		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2D 0-1 Lab ID: 254835021 Collected: 08/31/10 10:36 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:18	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:18	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:18	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:18	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:18	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:18	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:18	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	1930	mg/kg	22.8	1000	09/17/10 15:45	09/21/10 15:02	7440-38-2	
Barium	91.4	mg/kg	0.27	20	09/17/10 15:45	09/20/10 21:36	7440-39-3	
Cadmium	1.3	mg/kg	0.073	20	09/17/10 15:45	09/20/10 21:36	7440-43-9	
Chromium	27.8	mg/kg	0.46	20	09/17/10 15:45	09/20/10 21:36	7440-47-3	
Lead	2550	mg/kg	22.8	1000	09/17/10 15:45	09/21/10 15:02	7439-92-1	
Selenium	3.5	mg/kg	0.46	20	09/17/10 15:45	09/20/10 21:36	7782-49-2	
Silver	9.9	mg/kg	0.46	20	09/17/10 15:45	09/21/10 17:00	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:07	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	1070	mg/kg	508	5000	09/20/10 14:51	09/21/10 09:48	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	13.1	%	0.10	1		09/16/10 20:49		

Sample: 2D 1-2 Lab ID: 254835022 Collected: 08/31/10 10:40 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:21	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:21	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:21	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:21	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:21	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:21	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:21	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 2D 1-2 **Lab ID:** 254835022 Collected: 08/31/10 10:40 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	758	mg/kg	2.2	100	09/17/10 15:45	09/21/10 15:30	7440-38-2	
Barium	47.3	mg/kg	0.27	20	09/17/10 15:45	09/20/10 21:40	7440-39-3	
Cadmium	0.99	mg/kg	0.071	20	09/17/10 15:45	09/20/10 21:40	7440-43-9	
Chromium	26.5	mg/kg	0.45	20	09/17/10 15:45	09/20/10 21:40	7440-47-3	
Lead	1390	mg/kg	2.2	100	09/17/10 15:45	09/21/10 15:30	7439-92-1	
Selenium	2.5	mg/kg	0.45	20	09/17/10 15:45	09/20/10 21:40	7782-49-2	
Silver	10.9	mg/kg	0.45	20	09/17/10 15:45	09/22/10 11:05	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:09	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	169	mg/kg	110	1000	09/20/10 14:51	09/21/10 09:50	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	11.9	%	0.10	1		09/23/10 00:00		

Sample: 3A 0-1 **Lab ID:** 254835023 Collected: 08/31/10 11:10 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:24	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:24	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:24	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:24	7440-47-3	
Lead	1.2	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:24	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:24	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:24	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	40.5	mg/kg	0.39	20	09/17/10 15:45	09/20/10 21:45	7440-38-2	
Barium	42.8	mg/kg	0.24	20	09/17/10 15:45	09/20/10 21:45	7440-39-3	
Cadmium	0.38	mg/kg	0.063	20	09/17/10 15:45	09/20/10 21:45	7440-43-9	
Chromium	10.4	mg/kg	0.39	20	09/17/10 15:45	09/20/10 21:45	7440-47-3	
Lead	199	mg/kg	0.39	20	09/17/10 15:45	09/20/10 21:45	7439-92-1	
Selenium	0.73	mg/kg	0.39	20	09/17/10 15:45	09/20/10 21:45	7782-49-2	
Silver	0.91	mg/kg	0.39	20	09/17/10 15:45	09/21/10 15:34	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 3A 0-1 **Lab ID: 254835023** Collected: 08/31/10 11:10 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:11	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	8.1	mg/kg	0.94	10	09/20/10 14:51	09/21/10 09:52	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	5.7	%	0.10	1		09/23/10 00:00		

Sample: 3B 0-1 **Lab ID: 254835024** Collected: 08/31/10 11:08 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:28	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:28	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:28	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:28	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:28	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:28	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:28	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	51.9	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:49	7440-38-2	
Barium	53.2	mg/kg	0.26	20	09/17/10 15:45	09/20/10 21:49	7440-39-3	
Cadmium	0.42	mg/kg	0.070	20	09/17/10 15:45	09/20/10 21:49	7440-43-9	
Chromium	17.0	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:49	7440-47-3	
Lead	60.5	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:49	7439-92-1	
Selenium	1.4	mg/kg	0.44	20	09/17/10 15:45	09/20/10 21:49	7782-49-2	
Silver	ND	mg/kg	0.44	20	09/17/10 15:45	09/21/10 15:38	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:13	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	15.4	mg/kg	2.6	25	09/20/10 14:51	09/21/10 09:54	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	5.3	%	0.10	1		09/23/10 00:00		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 3C Surface **Lab ID: 254835025** Collected: 08/31/10 10:58 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:31	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:31	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:31	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:31	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:31	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:31	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:31	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	901	mg/kg	20.2	1000	09/17/10 15:45	09/21/10 15:43	7440-38-2	
Barium	97.6	mg/kg	0.24	20	09/17/10 15:45	09/20/10 21:53	7440-39-3	
Cadmium	1.7	mg/kg	0.065	20	09/17/10 15:45	09/20/10 21:53	7440-43-9	
Chromium	28.5	mg/kg	0.40	20	09/17/10 15:45	09/20/10 21:53	7440-47-3	
Lead	12100	mg/kg	20.2	1000	09/17/10 15:45	09/21/10 15:43	7439-92-1	
Selenium	5.0	mg/kg	0.40	20	09/17/10 15:45	09/20/10 21:53	7782-49-2	
Silver	50.3	mg/kg	0.40	20	09/17/10 15:45	09/22/10 11:09	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	26.4	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:15	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	279	mg/kg	97.1	1000	09/20/10 14:51	09/21/10 09:56	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	6.4	%	0.10	1		09/23/10 00:00		

Sample: 3C 0-1 **Lab ID: 254835026** Collected: 08/31/10 11:01 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:34	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:34	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:34	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:34	7440-47-3	
Lead	115	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:34	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:34	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:34	7440-22-4	1n

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 3C 0-1 **Lab ID: 254835026** Collected: 08/31/10 11:01 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	830	mg/kg	22.9	1000	09/17/10 15:45	09/21/10 15:47	7440-38-2	M6
Barium	77.6	mg/kg	0.27	20	09/17/10 15:45	09/20/10 21:57	7440-39-3	M6
Cadmium	1.0	mg/kg	0.073	20	09/17/10 15:45	09/20/10 21:57	7440-43-9	
Chromium	27.0	mg/kg	0.46	20	09/17/10 15:45	09/20/10 21:57	7440-47-3	
Lead	5030	mg/kg	22.9	1000	09/17/10 15:45	09/21/10 15:47	7439-92-1	M6
Selenium	4.6	mg/kg	0.46	20	09/17/10 15:45	09/20/10 21:57	7782-49-2	
Silver	26.2	mg/kg	0.46	20	09/17/10 15:45	09/22/10 11:14	7440-22-4	M6

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:17	7439-97-6	1n
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	418	mg/kg	101	1000	09/20/10 14:51	09/21/10 09:59	7439-97-6	
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Dry Weight

Analytical Method: % Moisture

Percent Moisture	9.7	%	0.10	1		09/17/10 00:00		
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Sample: 3C 1-2 **Lab ID: 254835027** Collected: 08/31/10 11:02 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/16/10 20:28								
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:37	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:37	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:37	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:37	7440-47-3	
Lead	31.5	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:37	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:37	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:37	7440-22-4	

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	104	mg/kg	0.47	20	09/17/10 15:45	09/20/10 22:01	7440-38-2	
Barium	39.7	mg/kg	0.28	20	09/17/10 15:45	09/20/10 22:01	7440-39-3	
Cadmium	1.4	mg/kg	0.075	20	09/17/10 15:45	09/20/10 22:01	7440-43-9	
Chromium	13.5	mg/kg	0.47	20	09/17/10 15:45	09/20/10 22:01	7440-47-3	
Lead	671	mg/kg	2.3	100	09/17/10 15:45	09/21/10 15:51	7439-92-1	
Selenium	1.3	mg/kg	0.47	20	09/17/10 15:45	09/20/10 22:01	7782-49-2	
Silver	3.2	mg/kg	0.47	20	09/17/10 15:45	09/22/10 11:18	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 3C 1-2 **Lab ID: 254835027** Collected: 08/31/10 11:02 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:20	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	36.6	mg/kg	11.0	100	09/20/10 14:51	09/21/10 10:01	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	8.9	%	0.10	1		09/16/10 20:51		

Sample: 4B 0-1 **Lab ID: 254835028** Collected: 08/31/10 11:15 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:40	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:40	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:40	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:40	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:40	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:40	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:40	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	82.1	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:05	7440-38-2	
Barium	49.7	mg/kg	0.23	20	09/17/10 15:45	09/20/10 22:05	7440-39-3	
Cadmium	0.54	mg/kg	0.062	20	09/17/10 15:45	09/20/10 22:05	7440-43-9	
Chromium	14.5	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:05	7440-47-3	
Lead	219	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:05	7439-92-1	
Selenium	1.1	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:05	7782-49-2	
Silver	1.0	mg/kg	0.39	20	09/17/10 15:45	09/21/10 15:55	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:22	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	10.7	mg/kg	2.5	25	09/20/10 14:51	09/21/10 10:12	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	5.4	%	0.10	1		09/16/10 20:51		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 4C Surface Lab ID: 254835029 Collected: 08/31/10 11:18 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Arsenic	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:43	7440-38-2	
Barium	ND mg/L		5.0	1	09/17/10 19:50	09/19/10 02:43	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/17/10 19:50	09/19/10 02:43	7440-43-9	
Chromium	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:43	7440-47-3	
Lead	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:43	7439-92-1	
Selenium	ND mg/L		0.20	1	09/17/10 19:50	09/19/10 02:43	7782-49-2	
Silver	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:43	7440-22-4	

6020 MET ICPMS

Analytical Method: EPA 6020

Arsenic	90.8 mg/kg		0.40	20	09/17/10 15:45	09/20/10 22:09	7440-38-2	
Barium	38.1 mg/kg		0.24	20	09/17/10 15:45	09/20/10 22:09	7440-39-3	
Cadmium	0.45 mg/kg		0.064	20	09/17/10 15:45	09/20/10 22:09	7440-43-9	
Chromium	10.5 mg/kg		0.40	20	09/17/10 15:45	09/20/10 22:09	7440-47-3	
Lead	57.5 mg/kg		0.40	20	09/17/10 15:45	09/20/10 22:09	7439-92-1	
Selenium	0.62 mg/kg		0.40	20	09/17/10 15:45	09/20/10 22:09	7782-49-2	
Silver	ND mg/kg		0.40	20	09/17/10 15:45	09/21/10 15:59	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Mercury	ND ug/L		8.3	1	09/20/10 11:33	09/21/10 13:28	7439-97-6	
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7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Mercury	83.7 mg/kg		19.0	200	09/09/10 13:59	09/13/10 09:36	7439-97-6	
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Dry Weight

Analytical Method: % Moisture

Percent Moisture	9.6 %		0.10	1		09/17/10 00:00		
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Sample: 4C 0-1 Lab ID: 254835030 Collected: 08/31/10 11:19 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 09/16/10 20:28

Arsenic	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:53	7440-38-2	
Barium	ND mg/L		5.0	1	09/17/10 19:50	09/19/10 02:53	7440-39-3	
Cadmium	ND mg/L		0.20	1	09/17/10 19:50	09/19/10 02:53	7440-43-9	
Chromium	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:53	7440-47-3	
Lead	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:53	7439-92-1	
Selenium	ND mg/L		0.20	1	09/17/10 19:50	09/19/10 02:53	7782-49-2	
Silver	ND mg/L		1.0	1	09/17/10 19:50	09/19/10 02:53	7440-22-4	1n

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 4C 0-1 **Lab ID: 254835030** Collected: 08/31/10 11:19 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	59.2	mg/kg	0.49	20	09/17/10 15:45	09/20/10 22:34	7440-38-2	
Barium	39.7	mg/kg	0.29	20	09/17/10 15:45	09/20/10 22:34	7440-39-3	
Cadmium	0.38	mg/kg	0.078	20	09/17/10 15:45	09/20/10 22:34	7440-43-9	
Chromium	9.2	mg/kg	0.49	20	09/17/10 15:45	09/20/10 22:34	7440-47-3	
Lead	49.0	mg/kg	0.49	20	09/17/10 15:45	09/20/10 22:34	7439-92-1	
Selenium	0.71	mg/kg	0.49	20	09/17/10 15:45	09/20/10 22:34	7782-49-2	
Silver	ND	mg/kg	0.49	20	09/17/10 15:45	09/21/10 16:03	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:30	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	21.0	mg/kg	4.6	50	09/09/10 13:59	09/13/10 09:42	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	6.5	%	0.10	1		09/17/10 00:00		

Sample: 4C 1-2 **Lab ID: 254835031** Collected: 08/31/10 11:21 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:56	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:56	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:56	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:56	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:56	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:56	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:56	7440-22-4	
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	62.3	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:38	7440-38-2	
Barium	36.3	mg/kg	0.24	20	09/17/10 15:45	09/20/10 22:38	7440-39-3	
Cadmium	0.36	mg/kg	0.063	20	09/17/10 15:45	09/20/10 22:38	7440-43-9	
Chromium	10.5	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:38	7440-47-3	
Lead	53.3	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:38	7439-92-1	
Selenium	0.81	mg/kg	0.39	20	09/17/10 15:45	09/20/10 22:38	7782-49-2	
Silver	1.9	mg/kg	0.39	20	09/17/10 15:45	09/21/10 16:23	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 4C 1-2 **Lab ID: 254835031** Collected: 08/31/10 11:21 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:32	7439-97-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	10.7	mg/kg	4.4	50	09/09/10 13:59	09/13/10 09:44	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	7.7	%	0.10	1		09/17/10 00:00		

Sample: 4D Surface **Lab ID: 254835032** Collected: 08/31/10 11:23 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:59	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 02:59	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:59	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:59	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:59	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 02:59	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 02:59	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	1430	mg/kg	6.0	200	09/17/10 15:45	09/21/10 16:28	7440-38-2	
Barium	66.9	mg/kg	0.36	20	09/17/10 15:45	09/20/10 22:42	7440-39-3	
Cadmium	1.3	mg/kg	0.096	20	09/17/10 15:45	09/20/10 22:42	7440-43-9	
Chromium	27.7	mg/kg	0.60	20	09/17/10 15:45	09/20/10 22:42	7440-47-3	
Lead	2270	mg/kg	6.0	200	09/17/10 15:45	09/21/10 16:28	7439-92-1	
Selenium	5.9	mg/kg	0.60	20	09/17/10 15:45	09/20/10 22:42	7782-49-2	
Silver	6.6	mg/kg	0.60	20	09/17/10 15:45	09/22/10 11:22	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:34	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	453	mg/kg	123	1000	09/09/10 13:59	09/13/10 11:24	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	26.3	%	0.10	1		09/17/10 00:00		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: 4D 0-1 **Lab ID:** 254835033 Collected: 08/31/10 11:25 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:02	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 03:02	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 03:02	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:02	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:02	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 03:02	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:02	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	1080	mg/kg	2.0	100	09/17/10 15:45	09/21/10 16:32	7440-38-2	
Barium	59.8	mg/kg	0.24	20	09/17/10 15:45	09/20/10 22:46	7440-39-3	
Cadmium	0.80	mg/kg	0.065	20	09/17/10 15:45	09/20/10 22:46	7440-43-9	
Chromium	18.5	mg/kg	0.41	20	09/17/10 15:45	09/20/10 22:46	7440-47-3	
Lead	838	mg/kg	2.0	100	09/17/10 15:45	09/21/10 16:32	7439-92-1	
Selenium	3.0	mg/kg	0.41	20	09/17/10 15:45	09/20/10 22:46	7782-49-2	
Silver	3.6	mg/kg	0.41	20	09/17/10 15:45	09/22/10 11:27	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:36	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	334	mg/kg	102	1000	09/09/10 13:59	09/13/10 12:46	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	10.9	%	0.10	1		09/17/10 00:00		

Sample: Goldhouse North 0-6 **Lab ID:** 254835034 Collected: 08/31/10 11:52 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Arsenic	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:05	7440-38-2	
Barium	ND	mg/L	5.0	1	09/17/10 19:50	09/19/10 03:05	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 03:05	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:05	7440-47-3	
Lead	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:05	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/17/10 19:50	09/19/10 03:05	7782-49-2	
Silver	ND	mg/L	1.0	1	09/17/10 19:50	09/19/10 03:05	7440-22-4	1n

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: Goldhouse North 0-6 **Lab ID: 254835034** Collected: 08/31/10 11:52 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	158	mg/kg	3.2	20	09/17/10 15:45	09/20/10 22:50	7440-38-2	
Barium	68.1	mg/kg	1.9	20	09/17/10 15:45	09/20/10 22:50	7440-39-3	
Cadmium	1.1	mg/kg	0.52	20	09/17/10 15:45	09/20/10 22:50	7440-43-9	
Chromium	20.9	mg/kg	3.2	20	09/17/10 15:45	09/20/10 22:50	7440-47-3	
Lead	107	mg/kg	3.2	20	09/17/10 15:45	09/20/10 22:50	7439-92-1	
Selenium	ND	mg/kg	3.2	20	09/17/10 15:45	09/20/10 22:50	7782-49-2	
Silver	ND	mg/kg	3.2	20	09/17/10 15:45	09/21/10 16:36	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/16/10 20:28						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:38	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	21.0	mg/kg	7.7	50	09/09/10 13:59	09/13/10 09:55	7439-97-6	
Dry Weight		Analytical Method: % Moisture						
Percent Moisture	40.7	%	0.10	1		09/17/10 00:00		

Sample: Goldhouse East 0-6" **Lab ID: 254835035** Collected: 08/31/10 11:47 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/17/10 20:44						
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:33	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 17:33	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:33	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:33	7440-47-3	
Lead	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:33	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:33	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:33	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	30.0	mg/kg	0.48	20	09/17/10 15:45	09/20/10 22:55	7440-38-2	
Barium	64.1	mg/kg	0.29	20	09/17/10 15:45	09/20/10 22:55	7440-39-3	
Cadmium	0.48	mg/kg	0.076	20	09/17/10 15:45	09/20/10 22:55	7440-43-9	
Chromium	15.8	mg/kg	0.48	20	09/17/10 15:45	09/20/10 22:55	7440-47-3	
Lead	53.0	mg/kg	0.48	20	09/17/10 15:45	09/20/10 22:55	7439-92-1	
Selenium	0.53	mg/kg	0.48	20	09/17/10 15:45	09/20/10 22:55	7782-49-2	
Silver	ND	mg/kg	0.48	20	09/17/10 15:45	09/21/10 16:40	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: Goldhouse East 0-6" Lab ID: 254835035 Collected: 08/31/10 11:47 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:45	7439-97-6	1n
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	21.8	mg/kg	5.0	50	09/09/10 13:59	09/13/10 09:57	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	10.9	%	0.10	1		09/16/10 20:52		

Sample: Goldhouse West Lab ID: 254835036 Collected: 08/31/10 11:49 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:42	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 17:42	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:42	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:42	7440-47-3	
Lead	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:42	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:42	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:42	7440-22-4	1n
6020 MET ICPMS								
Analytical Method: EPA 6020								
Arsenic	2080	mg/kg	3.2	100	09/17/10 15:43	09/20/10 23:03	7440-38-2	M6
Barium	89.9	mg/kg	0.38	20	09/17/10 15:43	09/20/10 22:59	7440-39-3	M6
Cadmium	2.6	mg/kg	0.10	20	09/17/10 15:43	09/20/10 22:59	7440-43-9	M6
Chromium	41.0	mg/kg	0.63	20	09/17/10 15:43	09/20/10 22:59	7440-47-3	
Lead	2450	mg/kg	6.3	200	09/17/10 15:43	09/22/10 11:53	7439-92-1	M6
Selenium	9.0	mg/kg	0.63	20	09/17/10 15:43	09/20/10 22:59	7782-49-2	M6
Silver	12.2	mg/kg	0.63	20	09/17/10 15:43	09/22/10 11:49	7440-22-4	M6
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	9.8	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:55	7439-97-6	1n
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	126	1000	09/09/10 13:59	09/13/10 11:33	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	23.1	%	0.10	1		09/16/10 20:54		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: Goldhouse South 0-6" Lab ID: 254835037 Collected: 08/31/10 11:49 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/17/10 20:44						
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:51	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 17:51	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:51	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:51	7440-47-3	
Lead	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:51	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:51	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:51	7440-22-4	1n
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	27.5	mg/kg	0.58	20	09/17/10 15:43	09/20/10 23:23	7440-38-2	
Barium	98.2	mg/kg	0.35	20	09/17/10 15:43	09/20/10 23:23	7440-39-3	
Cadmium	0.49	mg/kg	0.092	20	09/17/10 15:43	09/20/10 23:23	7440-43-9	
Chromium	25.4	mg/kg	0.58	20	09/17/10 15:43	09/20/10 23:23	7440-47-3	
Lead	49.4	mg/kg	0.58	20	09/17/10 15:43	09/20/10 23:23	7439-92-1	
Selenium	0.70	mg/kg	0.58	20	09/17/10 15:43	09/20/10 23:23	7782-49-2	
Silver	0.57	mg/kg	0.58	20	09/17/10 15:43	09/22/10 11:58	7440-22-4	
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
		Leachate Method/Date: EPA 1311; 09/17/10 20:44						
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:57	7439-97-6	1n
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	6.7	mg/kg	6.2	50	09/09/10 13:59	09/13/10 10:02	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	24.7	%	0.10	1		09/16/10 20:55		

Sample: LFN1B Lab ID: 254835038 Collected: 08/31/10 12:55 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	8.0	mg/kg	0.52	20	09/17/10 15:43	09/20/10 23:27	7440-38-2	
Barium	47.6	mg/kg	0.31	20	09/17/10 15:43	09/20/10 23:27	7440-39-3	
Cadmium	3.2	mg/kg	0.083	20	09/17/10 15:43	09/20/10 23:27	7440-43-9	
Chromium	3.9	mg/kg	0.52	20	09/17/10 15:43	09/20/10 23:27	7440-47-3	
Lead	6.6	mg/kg	0.52	20	09/17/10 15:43	09/20/10 23:27	7439-92-1	
Selenium	ND	mg/kg	0.52	20	09/17/10 15:43	09/20/10 23:27	7782-49-2	
Silver	ND	mg/kg	0.52	20	09/17/10 15:43	09/22/10 12:02	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFN1B **Lab ID: 254835038** Collected: 08/31/10 12:55 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.11	1	09/09/10 13:59	09/13/10 11:35	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	12.9	%	0.10	1		09/16/10 20:56		

Sample: LFN1A **Lab ID: 254835039** Collected: 08/31/10 12:28 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	31.5	mg/kg	0.50	20	09/17/10 15:43	09/20/10 23:32	7440-38-2	
Barium	83.2	mg/kg	0.30	20	09/17/10 15:43	09/20/10 23:32	7440-39-3	
Cadmium	0.50	mg/kg	0.080	20	09/17/10 15:43	09/20/10 23:32	7440-43-9	
Chromium	17.9	mg/kg	0.50	20	09/17/10 15:43	09/20/10 23:32	7440-47-3	
Lead	25.5	mg/kg	0.50	20	09/17/10 15:43	09/20/10 23:32	7439-92-1	
Selenium	0.82	mg/kg	0.50	20	09/17/10 15:43	09/20/10 23:32	7782-49-2	
Silver	ND	mg/kg	0.50	20	09/17/10 15:43	09/22/10 12:06	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.50	mg/kg	0.095	1	09/09/10 13:59	09/13/10 11:37	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	10	%	0.10	1		09/16/10 20:57		

Sample: LFN2B **Lab ID: 254835040** Collected: 08/31/10 12:32 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	17.2	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:36	7440-38-2	
Barium	62.6	mg/kg	0.30	20	09/17/10 15:43	09/20/10 23:36	7440-39-3	
Cadmium	0.95	mg/kg	0.079	20	09/17/10 15:43	09/20/10 23:36	7440-43-9	
Chromium	14.0	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:36	7440-47-3	
Lead	17.2	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:36	7439-92-1	
Selenium	0.65	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:36	7782-49-2	
Silver	ND	mg/kg	0.49	20	09/17/10 15:43	09/22/10 12:11	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.10	1	09/09/10 13:59	09/13/10 11:39	7439-97-6	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFN2B **Lab ID: 254835040** Collected: 08/31/10 12:32 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	13.4 %		0.10	1		09/16/10 20:59		

Sample: LFN2A **Lab ID: 254835041** Collected: 08/31/10 12:57 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	20.6 mg/kg		0.42	20	09/17/10 15:43	09/20/10 23:40	7440-38-2	
Barium	49.2 mg/kg		0.25	20	09/17/10 15:43	09/20/10 23:40	7440-39-3	
Cadmium	0.26 mg/kg		0.068	20	09/17/10 15:43	09/20/10 23:40	7440-43-9	
Chromium	13.5 mg/kg		0.42	20	09/17/10 15:43	09/20/10 23:40	7440-47-3	
Lead	17.2 mg/kg		0.42	20	09/17/10 15:43	09/20/10 23:40	7439-92-1	
Selenium	0.66 mg/kg		0.42	20	09/17/10 15:43	09/20/10 23:40	7782-49-2	
Silver	0.44 mg/kg		0.42	20	09/17/10 15:43	09/22/10 12:43	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND mg/kg		0.097	1	09/09/10 13:59	09/13/10 11:42	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.4 %		0.10	1		09/16/10 16:53		

Sample: LFN3B **Lab ID: 254835042** Collected: 08/31/10 13:01 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	19.8 mg/kg		0.49	20	09/17/10 15:43	09/20/10 23:44	7440-38-2	
Barium	56.1 mg/kg		0.30	20	09/17/10 15:43	09/20/10 23:44	7440-39-3	
Cadmium	0.36 mg/kg		0.079	20	09/17/10 15:43	09/20/10 23:44	7440-43-9	
Chromium	16.4 mg/kg		0.49	20	09/17/10 15:43	09/20/10 23:44	7440-47-3	
Lead	14.9 mg/kg		0.49	20	09/17/10 15:43	09/20/10 23:44	7439-92-1	
Selenium	ND mg/kg		0.49	20	09/17/10 15:43	09/20/10 23:44	7782-49-2	
Silver	ND mg/kg		0.49	20	09/17/10 15:43	09/22/10 12:48	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND mg/kg		0.11	1	09/09/10 13:59	09/13/10 11:44	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	12.5 %		0.10	1		09/16/10 16:55		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Sample Project No.: 254835

Sample: LFN3A **Lab ID: 254835043** Collected: 08/31/10 12:33 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	14.3	mg/kg	0.53	20	09/17/10 15:43	09/20/10 23:48	7440-38-2	
Barium	50.5	mg/kg	0.32	20	09/17/10 15:43	09/20/10 23:48	7440-39-3	
Cadmium	0.28	mg/kg	0.085	20	09/17/10 15:43	09/20/10 23:48	7440-43-9	
Chromium	13.8	mg/kg	0.53	20	09/17/10 15:43	09/20/10 23:48	7440-47-3	
Lead	15.4	mg/kg	0.53	20	09/17/10 15:43	09/20/10 23:48	7439-92-1	
Selenium	ND	mg/kg	0.53	20	09/17/10 15:43	09/20/10 23:48	7782-49-2	
Silver	ND	mg/kg	0.53	20	09/17/10 15:43	09/22/10 12:52	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	0.14	mg/kg	0.096	1	09/09/10 13:59	09/13/10 11:46	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	11.1	%	0.10	1		09/16/10 16:58		

Sample: LFN4B **Lab ID: 254835044** Collected: 08/31/10 12:34 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	19.7	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:52	7440-38-2	
Barium	71.4	mg/kg	0.30	20	09/17/10 15:43	09/20/10 23:52	7440-39-3	
Cadmium	1.0	mg/kg	0.079	20	09/17/10 15:43	09/20/10 23:52	7440-43-9	
Chromium	12.3	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:52	7440-47-3	
Lead	49.6	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:52	7439-92-1	
Selenium	3.1	mg/kg	0.49	20	09/17/10 15:43	09/20/10 23:52	7782-49-2	
Silver	ND	mg/kg	0.49	20	09/17/10 15:43	09/22/10 12:56	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.077	1	09/09/10 13:59	09/13/10 11:48	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	11.8	%	0.10	1		09/16/10 16:59		

Sample: LFN4A **Lab ID: 254835045** Collected: 08/31/10 13:02 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	44.7	mg/kg	0.52	20	09/17/10 15:43	09/21/10 00:17	7440-38-2	
Barium	75.2	mg/kg	0.31	20	09/17/10 15:43	09/21/10 00:17	7440-39-3	
Cadmium	1.2	mg/kg	0.083	20	09/17/10 15:43	09/21/10 00:17	7440-43-9	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFN4A **Lab ID: 254835045** Collected: 08/31/10 13:02 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Chromium	19.2	mg/kg	0.52	20	09/17/10 15:43	09/21/10 00:17	7440-47-3	
Lead	27.6	mg/kg	0.52	20	09/17/10 15:43	09/21/10 00:17	7439-92-1	
Selenium	1.3	mg/kg	0.52	20	09/17/10 15:43	09/21/10 00:17	7782-49-2	
Silver	ND	mg/kg	0.52	20	09/17/10 15:43	09/22/10 13:01	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	0.17	mg/kg	0.12	1	09/09/10 13:59	09/13/10 11:55	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	14.6	%	0.10	1		09/16/10 20:59		

Sample: LFN5B **Lab ID: 254835046** Collected: 08/31/10 13:03 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	11.9	mg/kg	0.55	20	09/17/10 15:43	09/21/10 00:21	7440-38-2	
Barium	63.9	mg/kg	0.33	20	09/17/10 15:43	09/21/10 00:21	7440-39-3	
Cadmium	1.4	mg/kg	0.088	20	09/17/10 15:43	09/21/10 00:21	7440-43-9	
Chromium	11.0	mg/kg	0.55	20	09/17/10 15:43	09/21/10 00:21	7440-47-3	
Lead	45.3	mg/kg	0.55	20	09/17/10 15:43	09/21/10 00:21	7439-92-1	M6
Selenium	ND	mg/kg	0.55	20	09/17/10 15:43	09/21/10 00:21	7782-49-2	
Silver	ND	mg/kg	0.55	20	09/17/10 15:43	09/22/10 13:05	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.091	1	09/09/10 13:59	09/13/10 11:57	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	15.9	%	0.10	1		09/16/10 21:02		

Sample: LFNFA **Lab ID: 254835047** Collected: 08/31/10 12:35 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	23.1	mg/kg	0.51	20	09/17/10 15:43	09/21/10 00:25	7440-38-2	
Barium	100	mg/kg	0.30	20	09/17/10 15:43	09/21/10 00:25	7440-39-3	
Cadmium	0.96	mg/kg	0.081	20	09/17/10 15:43	09/21/10 00:25	7440-43-9	
Chromium	13.8	mg/kg	0.51	20	09/17/10 15:43	09/21/10 00:25	7440-47-3	
Lead	25.6	mg/kg	0.51	20	09/17/10 15:43	09/21/10 00:25	7439-92-1	
Selenium	0.89	mg/kg	0.51	20	09/17/10 15:43	09/21/10 00:25	7782-49-2	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFNFA **Lab ID: 254835047** Collected: 08/31/10 12:35 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Silver	ND	mg/kg	0.51	20	09/17/10 15:43	09/22/10 13:10	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.11	1	09/09/10 13:59	09/13/10 12:03	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	21.0	%	0.10	1		09/16/10 21:03		

Sample: LFN6B **Lab ID: 254835048** Collected: 08/31/10 12:37 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	22.5	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:29	7440-38-2	
Barium	332	mg/kg	0.28	20	09/17/10 15:43	09/21/10 00:29	7440-39-3	
Cadmium	0.95	mg/kg	0.075	20	09/17/10 15:43	09/21/10 00:29	7440-43-9	
Chromium	14.8	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:29	7440-47-3	
Lead	45.2	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:29	7439-92-1	
Selenium	0.64	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:29	7782-49-2	
Silver	ND	mg/kg	0.47	20	09/17/10 15:43	09/22/10 13:14	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.13	1	09/09/10 13:59	09/13/10 12:05	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	21.1	%	0.10	1		09/16/10 21:04		

Sample: LFN6A **Lab ID: 254835049** Collected: 08/31/10 13:04 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	64.6	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:33	7440-38-2	
Barium	101	mg/kg	0.28	20	09/17/10 15:43	09/21/10 00:33	7440-39-3	
Cadmium	0.70	mg/kg	0.075	20	09/17/10 15:43	09/21/10 00:33	7440-43-9	
Chromium	18.5	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:33	7440-47-3	
Lead	43.7	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:33	7439-92-1	
Selenium	0.84	mg/kg	0.47	20	09/17/10 15:43	09/21/10 00:33	7782-49-2	
Silver	ND	mg/kg	0.47	20	09/17/10 15:43	09/22/10 13:18	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFN6A **Lab ID: 254835049** Collected: 08/31/10 13:04 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.087	1	09/09/10 13:59	09/13/10 12:08	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	13.8	%	0.10	1		09/16/10 21:05		

Sample: LFN7B **Lab ID: 254835050** Collected: 08/31/10 13:06 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	22.6	mg/kg	0.42	20	09/17/10 15:43	09/21/10 00:38	7440-38-2	
Barium	45.5	mg/kg	0.25	20	09/17/10 15:43	09/21/10 00:38	7440-39-3	
Cadmium	0.30	mg/kg	0.067	20	09/17/10 15:43	09/21/10 00:38	7440-43-9	
Chromium	11.4	mg/kg	0.42	20	09/17/10 15:43	09/21/10 00:38	7440-47-3	
Lead	12.1	mg/kg	0.42	20	09/17/10 15:43	09/21/10 00:38	7439-92-1	
Selenium	0.42	mg/kg	0.42	20	09/17/10 15:43	09/21/10 00:38	7782-49-2	
Silver	ND	mg/kg	0.42	20	09/17/10 15:43	09/22/10 13:40	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.093	1	09/09/10 13:59	09/13/10 12:10	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	7.6	%	0.10	1		09/16/10 21:06		

Sample: LFN7A **Lab ID: 254835051** Collected: 08/31/10 12:45 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	18.5	mg/kg	0.48	20	09/17/10 15:43	09/21/10 00:42	7440-38-2	
Barium	74.7	mg/kg	0.29	20	09/17/10 15:43	09/21/10 00:42	7440-39-3	
Cadmium	0.35	mg/kg	0.076	20	09/17/10 15:43	09/21/10 00:42	7440-43-9	
Chromium	11.9	mg/kg	0.48	20	09/17/10 15:43	09/21/10 00:42	7440-47-3	
Lead	26.9	mg/kg	0.48	20	09/17/10 15:43	09/21/10 00:42	7439-92-1	
Selenium	ND	mg/kg	0.48	20	09/17/10 15:43	09/21/10 00:42	7782-49-2	
Silver	ND	mg/kg	0.48	20	09/17/10 15:43	09/22/10 13:45	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.098	1	09/09/10 13:59	09/13/10 12:12	7439-97-6	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: LFN7A **Lab ID: 254835051** Collected: 08/31/10 12:45 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.8 %		0.10	1		09/16/10 21:07		

Sample: LFN8B **Lab ID: 254835052** Collected: 08/31/10 12:49 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	22.1 mg/kg		0.54	20	09/17/10 15:43	09/21/10 00:46	7440-38-2	
Barium	54.4 mg/kg		0.33	20	09/17/10 15:43	09/21/10 00:46	7440-39-3	
Cadmium	0.32 mg/kg		0.087	20	09/17/10 15:43	09/21/10 00:46	7440-43-9	
Chromium	19.2 mg/kg		0.54	20	09/17/10 15:43	09/21/10 00:46	7440-47-3	
Lead	50.9 mg/kg		0.54	20	09/17/10 15:43	09/21/10 00:46	7439-92-1	
Selenium	0.61 mg/kg		0.54	20	09/17/10 15:43	09/21/10 00:46	7782-49-2	
Silver	ND mg/kg		0.54	20	09/17/10 15:43	09/22/10 13:49	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND mg/kg		0.11	1	09/09/10 13:59	09/13/10 12:18	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	12.1 %		0.10	1		09/16/10 21:08		

Sample: LFN8A **Lab ID: 254835053** Collected: 08/31/10 13:07 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	23.2 mg/kg		0.44	20	09/17/10 15:43	09/21/10 00:50	7440-38-2	
Barium	55.6 mg/kg		0.26	20	09/17/10 15:43	09/21/10 00:50	7440-39-3	
Cadmium	0.37 mg/kg		0.070	20	09/17/10 15:43	09/21/10 00:50	7440-43-9	
Chromium	17.2 mg/kg		0.44	20	09/17/10 15:43	09/21/10 00:50	7440-47-3	
Lead	21.8 mg/kg		0.44	20	09/17/10 15:43	09/21/10 00:50	7439-92-1	
Selenium	0.97 mg/kg		0.44	20	09/17/10 15:43	09/21/10 00:50	7782-49-2	
Silver	ND mg/kg		0.44	20	09/17/10 15:43	09/22/10 13:54	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND mg/kg		0.080	1	09/09/10 13:59	09/13/10 12:21	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	8.9 %		0.10	1		09/16/10 21:09		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Sample Project No.: 254835

Sample: Alt SE **Lab ID: 254835054** Collected: 08/31/10 13:12 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	23.4	mg/kg	0.37	20	09/17/10 15:43	09/21/10 01:10	7440-38-2	
Barium	72.3	mg/kg	0.22	20	09/17/10 15:43	09/21/10 01:10	7440-39-3	
Cadmium	0.23	mg/kg	0.059	20	09/17/10 15:43	09/21/10 01:10	7440-43-9	
Chromium	14.9	mg/kg	0.37	20	09/17/10 15:43	09/21/10 01:10	7440-47-3	
Lead	10.3	mg/kg	0.37	20	09/17/10 15:43	09/21/10 01:10	7439-92-1	
Selenium	0.51	mg/kg	0.37	20	09/17/10 15:43	09/21/10 01:10	7782-49-2	
Silver	ND	mg/kg	0.37	20	09/17/10 15:43	09/22/10 13:58	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.092	1	09/09/10 13:59	09/13/10 12:23	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	9.1	%	0.10	1		09/16/10 21:11		

Sample: Alt NE **Lab ID: 254835055** Collected: 08/31/10 13:14 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	28.8	mg/kg	0.39	20	09/17/10 15:43	09/21/10 01:14	7440-38-2	
Barium	34.8	mg/kg	0.24	20	09/17/10 15:43	09/21/10 01:14	7440-39-3	
Cadmium	0.43	mg/kg	0.063	20	09/17/10 15:43	09/21/10 01:14	7440-43-9	
Chromium	12.2	mg/kg	0.39	20	09/17/10 15:43	09/21/10 01:14	7440-47-3	
Lead	10.3	mg/kg	0.39	20	09/17/10 15:43	09/21/10 01:14	7439-92-1	
Selenium	0.80	mg/kg	0.39	20	09/17/10 15:43	09/21/10 01:14	7782-49-2	
Silver	ND	mg/kg	0.39	20	09/17/10 15:43	09/22/10 14:02	7440-22-4	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.091	1	09/09/10 13:59	09/13/10 12:25	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	5.7	%	0.10	1		09/16/10 21:12		

Sample: Alt SW **Lab ID: 254835056** Collected: 08/31/10 13:13 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	38.0	mg/kg	0.47	20	09/16/10 15:41	09/19/10 19:45	7440-38-2	
Barium	84.5	mg/kg	0.28	20	09/16/10 15:41	09/19/10 19:45	7440-39-3	
Cadmium	0.24	mg/kg	0.075	20	09/16/10 15:41	09/19/10 19:45	7440-43-9	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: Alt SW **Lab ID: 254835056** Collected: 08/31/10 13:13 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Chromium	12.8	mg/kg	0.47	20	09/16/10 15:41	09/19/10 19:45	7440-47-3	
Lead	6.8	mg/kg	0.47	20	09/16/10 15:41	09/19/10 19:45	7439-92-1	
Selenium	0.59	mg/kg	0.47	20	09/16/10 15:41	09/19/10 19:45	7782-49-2	
Silver	ND	mg/kg	0.47	20	09/16/10 15:41	09/19/10 19:45	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.093	1	09/09/10 13:59	09/13/10 12:27	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	8.2	%	0.10	1		09/16/10 21:16		

Sample: Alt NW **Lab ID: 254835057** Collected: 08/31/10 13:16 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	23.5	mg/kg	0.43	20	09/16/10 15:41	09/19/10 19:49	7440-38-2	
Barium	10.9	mg/kg	0.26	20	09/16/10 15:41	09/19/10 19:49	7440-39-3	
Cadmium	0.19	mg/kg	0.069	20	09/16/10 15:41	09/19/10 19:49	7440-43-9	
Chromium	16.1	mg/kg	0.43	20	09/16/10 15:41	09/19/10 19:49	7440-47-3	
Lead	8.2	mg/kg	0.43	20	09/16/10 15:41	09/19/10 19:49	7439-92-1	
Selenium	0.48	mg/kg	0.43	20	09/16/10 15:41	09/19/10 19:49	7782-49-2	
Silver	ND	mg/kg	0.43	20	09/16/10 15:41	09/19/10 19:49	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.11	1	09/09/10 13:59	09/13/10 12:29	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	11.0	%	0.10	1		09/16/10 21:16		

Sample: DUP-1 **Lab ID: 254835058** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
		Leachate Method/Date: EPA 1311; 09/17/10 20:44						
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:54	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 17:54	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:54	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:54	7440-47-3	
Lead	22.5	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:54	7439-92-1	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: DUP-1 **Lab ID: 254835058** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:54	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:54	7440-22-4	1n
6020 MET ICPMS								
Analytical Method: EPA 6020								
Arsenic	818	mg/kg	18.9	1000	09/16/10 15:41	09/20/10 18:40	7440-38-2	
Barium	85.1	mg/kg	0.23	20	09/16/10 15:41	09/19/10 20:09	7440-39-3	
Cadmium	1.4	mg/kg	0.060	20	09/16/10 15:41	09/19/10 20:09	7440-43-9	
Chromium	37.0	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:09	7440-47-3	
Lead	3040	mg/kg	18.9	1000	09/16/10 15:41	09/20/10 18:40	7439-92-1	
Selenium	3.3	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:09	7782-49-2	
Silver	31.6	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:09	7440-22-4	
7470 Mercury, TCLP								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 13:59	7439-97-6	
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	720	mg/kg	88.1	1000	09/09/10 13:59	09/13/10 12:31	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	5.4	%	0.10	1		09/16/10 21:17		

Sample: DUP-2 **Lab ID: 254835059** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:57	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 17:57	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:57	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:57	7440-47-3	
Lead	69.5	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:57	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 17:57	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 17:57	7440-22-4	
6020 MET ICPMS								
Analytical Method: EPA 6020								
Arsenic	790	mg/kg	18.8	1000	09/16/10 15:41	09/20/10 18:44	7440-38-2	
Barium	103	mg/kg	0.23	20	09/16/10 15:41	09/19/10 20:13	7440-39-3	
Cadmium	2.6	mg/kg	0.060	20	09/16/10 15:41	09/19/10 20:13	7440-43-9	
Chromium	84.9	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:13	7440-47-3	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: DUP-2 **Lab ID: 254835059** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020								
Lead	4900	mg/kg	18.8	1000	09/16/10 15:41	09/20/10 18:44	7439-92-1	
Selenium	5.9	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:13	7782-49-2	
Silver	21.3	mg/kg	0.38	20	09/16/10 15:41	09/19/10 20:13	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 14:01	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	778	mg/kg	96.2	1000	09/09/10 13:59	09/13/10 12:34	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	5.5	%	0.10	1		09/16/10 21:18		

Sample: DUP-3 **Lab ID: 254835060** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:01	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 18:01	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 18:01	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:01	7440-47-3	
Lead	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:01	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 18:01	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:01	7440-22-4	1n
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	139	mg/kg	18.2	1000	09/16/10 15:41	09/20/10 18:48	7440-38-2	
Barium	42.6	mg/kg	0.22	20	09/16/10 15:41	09/19/10 20:18	7440-39-3	
Cadmium	0.59	mg/kg	0.058	20	09/16/10 15:41	09/19/10 20:18	7440-43-9	
Chromium	13.5	mg/kg	0.36	20	09/16/10 15:41	09/19/10 20:18	7440-47-3	
Lead	121	mg/kg	18.2	1000	09/16/10 15:41	09/20/10 18:48	7439-92-1	
Selenium	1.0	mg/kg	0.36	20	09/16/10 15:41	09/19/10 20:18	7782-49-2	
Silver	0.67	mg/kg	0.36	20	09/16/10 15:41	09/19/10 20:18	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 14:03	7439-97-6	1n

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: DUP-3 **Lab ID: 254835060** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	33.6	mg/kg	5.1	50	09/09/10 13:59	09/13/10 11:16	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	4.7	%	0.10	1		09/16/10 21:19		

Sample: DUP-4 **Lab ID: 254835061** Collected: 08/31/10 23:00 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Arsenic	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:04	7440-38-2	
Barium	ND	mg/L	5.0	1	09/18/10 23:10	09/20/10 18:04	7440-39-3	
Cadmium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 18:04	7440-43-9	
Chromium	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:04	7440-47-3	
Lead	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:04	7439-92-1	
Selenium	ND	mg/L	0.20	1	09/18/10 23:10	09/20/10 18:04	7782-49-2	
Silver	ND	mg/L	1.0	1	09/18/10 23:10	09/20/10 18:04	7440-22-4	
6020 MET ICPMS Analytical Method: EPA 6020								
Arsenic	90.2	mg/kg	0.47	20	09/16/10 15:41	09/19/10 20:22	7440-38-2	
Barium	77.6	mg/kg	0.28	20	09/16/10 15:41	09/19/10 20:22	7440-39-3	
Cadmium	0.53	mg/kg	0.076	20	09/16/10 15:41	09/19/10 20:22	7440-43-9	
Chromium	17.5	mg/kg	0.47	20	09/16/10 15:41	09/19/10 20:22	7440-47-3	
Lead	236	mg/kg	2.4	100	09/16/10 15:41	09/20/10 18:52	7439-92-1	
Selenium	1.3	mg/kg	0.47	20	09/16/10 15:41	09/19/10 20:22	7782-49-2	
Silver	1.2	mg/kg	0.47	20	09/16/10 15:41	09/19/10 20:22	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 09/17/10 20:44								
Mercury	ND	ug/L	8.3	1	09/20/10 11:33	09/21/10 14:06	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	54.6	mg/kg	8.3	100	09/09/10 13:59	09/13/10 12:36	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	7.3	%	0.10	1		09/16/10 21:19		

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Sample Project No.: 254835

Sample: UPSTREAM **Lab ID: 254835062** Collected: 08/31/10 18:43 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	29.7	mg/kg	0.44	20	09/16/10 15:41	09/19/10 20:26	7440-38-2	
Barium	42.7	mg/kg	0.26	20	09/16/10 15:41	09/19/10 20:26	7440-39-3	
Cadmium	0.35	mg/kg	0.070	20	09/16/10 15:41	09/19/10 20:26	7440-43-9	
Chromium	11.7	mg/kg	0.44	20	09/16/10 15:41	09/19/10 20:26	7440-47-3	
Lead	18.0	mg/kg	0.44	20	09/16/10 15:41	09/19/10 20:26	7439-92-1	
Selenium	0.66	mg/kg	0.44	20	09/16/10 15:41	09/19/10 20:26	7782-49-2	
Silver	ND	mg/kg	0.44	20	09/16/10 15:41	09/19/10 20:26	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.11	1	09/09/10 13:59	09/13/10 12:42	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	23.7	%	0.10	1		09/16/10 21:20		

Sample: DOWNSTREAM **Lab ID: 254835063** Collected: 08/31/10 19:08 Received: 09/04/10 00:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Arsenic	29.9	mg/kg	0.48	20	09/16/10 15:41	09/19/10 20:30	7440-38-2	
Barium	57.4	mg/kg	0.29	20	09/16/10 15:41	09/19/10 20:30	7440-39-3	
Cadmium	0.37	mg/kg	0.077	20	09/16/10 15:41	09/19/10 20:30	7440-43-9	
Chromium	14.4	mg/kg	0.48	20	09/16/10 15:41	09/19/10 20:30	7440-47-3	
Lead	12.4	mg/kg	0.48	20	09/16/10 15:41	09/19/10 20:30	7439-92-1	
Selenium	0.66	mg/kg	0.48	20	09/16/10 15:41	09/19/10 20:30	7782-49-2	
Silver	ND	mg/kg	0.48	20	09/16/10 15:41	09/19/10 20:30	7440-22-4	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471						
Mercury	ND	mg/kg	0.096	1	09/09/10 13:59	09/13/10 12:44	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	8.4	%	0.10	1		09/16/10 21:20		

Sample: UPSTREAM **Lab ID: 254835064** Collected: 08/31/10 18:43 Received: 09/04/10 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Chromium	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:03	7440-47-3	
Arsenic	0.94	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:03	7440-38-2	
Selenium	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:03	7782-49-2	
Silver	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:03	7440-22-4	

ANALYTICAL RESULTS

Project: Utica Mine 1080-35

Pace Project No.: 254835

Sample: UPSTREAM		Lab ID: 254835064	Collected: 08/31/10 18:43	Received: 09/04/10 00:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Cadmium	ND	ug/L	0.080	1	09/20/10 14:02	09/22/10 14:03	7440-43-9	
Barium	20.7	ug/L	0.30	1	09/20/10 14:02	09/22/10 14:03	7440-39-3	
Lead	ND	ug/L	0.10	1	09/20/10 14:02	09/22/10 14:03	7439-92-1	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	09/14/10 10:44	09/14/10 16:05	7439-97-6	

Sample: DOWNSTREAM		Lab ID: 254835065	Collected: 08/31/10 19:08	Received: 09/04/10 00:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Chromium	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:08	7440-47-3	
Arsenic	0.88	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:08	7440-38-2	
Selenium	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:08	7782-49-2	
Silver	ND	ug/L	0.50	1	09/20/10 14:02	09/22/10 14:08	7440-22-4	
Cadmium	ND	ug/L	0.080	1	09/20/10 14:02	09/22/10 14:08	7440-43-9	
Barium	20.5	ug/L	0.30	1	09/20/10 14:02	09/22/10 14:08	7440-39-3	
Lead	ND	ug/L	0.10	1	09/20/10 14:02	09/22/10 14:08	7439-92-1	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	09/14/10 10:44	09/14/10 16:07	7439-97-6	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MPRP/1771 Analysis Method: EPA 6010
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015, 254835016, 254835017

METHOD BLANK: 40945 Matrix: Water
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015, 254835016, 254835017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	1.0	09/17/10 16:45	
Barium	mg/L	ND	5.0	09/17/10 16:45	
Cadmium	mg/L	ND	0.20	09/17/10 16:45	
Chromium	mg/L	ND	1.0	09/17/10 16:45	
Lead	mg/L	ND	1.0	09/17/10 16:45	
Selenium	mg/L	ND	0.20	09/17/10 16:45	
Silver	mg/L	ND	1.0	09/17/10 16:45	

LABORATORY CONTROL SAMPLE: 40946

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.1	102	80-120	
Barium	mg/L	5	5.2	104	80-120	
Cadmium	mg/L	5	5.3	106	80-120	
Chromium	mg/L	5	4.9	98	80-120	
Lead	mg/L	5	5.1	102	80-120	
Selenium	mg/L	5	5.2	104	80-120	
Silver	mg/L	2.5	2.2	87	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 40947 40948

Parameter	Units	254835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/L	ND	5	5	5.1	5.1	102	103	75-125	1	
Barium	mg/L	ND	5	5	5.6	5.7	102	103	75-125	.7	
Cadmium	mg/L	ND	5	5	5.2	5.3	103	106	75-125	2	
Chromium	mg/L	ND	5	5	4.9	4.9	99	97	75-125	1	
Lead	mg/L	ND	5	5	5.1	5.1	101	102	75-125	1	
Selenium	mg/L	ND	5	5	5.1	5.2	101	104	75-125	2	
Silver	mg/L	ND	2.5	2.5	2.3	2.2	93	90	75-125	3	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MPRP/1774 Analysis Method: EPA 6010
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
 Associated Lab Samples: 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034

METHOD BLANK: 41153 Matrix: Water
 Associated Lab Samples: 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	1.0	09/19/10 01:50	
Barium	mg/L	ND	5.0	09/19/10 01:50	
Cadmium	mg/L	ND	0.20	09/19/10 01:50	
Chromium	mg/L	ND	1.0	09/19/10 01:50	
Lead	mg/L	ND	1.0	09/19/10 01:50	
Selenium	mg/L	ND	0.20	09/19/10 01:50	
Silver	mg/L	ND	1.0	09/19/10 01:50	

LABORATORY CONTROL SAMPLE: 41154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	4.9	98	80-120	
Barium	mg/L	5	4.9J	99	80-120	
Cadmium	mg/L	5	5.0	101	80-120	
Chromium	mg/L	5	5.0	100	80-120	
Lead	mg/L	5	4.9	98	80-120	
Selenium	mg/L	5	4.9	98	80-120	
Silver	mg/L	2.5	2.5	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41155 41156

Parameter	Units	254835018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/L	ND	5	5	4.9	5.0	98	101	75-125	3	
Barium	mg/L	ND	5	5	5.1	5.1	102	102	75-125	.1	
Cadmium	mg/L	ND	5	5	5.0	4.9	99	99	75-125	.1	
Chromium	mg/L	ND	5	5	5.0	5.0	100	100	75-125	.4	
Lead	mg/L	ND	5	5	6.1	6.2	121	123	75-125	2	
Selenium	mg/L	ND	5	5	4.8	4.8	97	97	75-125	.1	
Silver	mg/L	ND	2.5	2.5	2.5	2.5	98	100	75-125	1	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MPRP/1775 Analysis Method: EPA 6010
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
 Associated Lab Samples: 254835035, 254835036, 254835037, 254835058, 254835059, 254835060, 254835061

METHOD BLANK: 41243 Matrix: Water
 Associated Lab Samples: 254835035, 254835036, 254835037, 254835058, 254835059, 254835060, 254835061

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	1.0	09/20/10 17:26	
Barium	mg/L	ND	5.0	09/20/10 17:26	
Cadmium	mg/L	ND	0.20	09/20/10 17:26	
Chromium	mg/L	ND	1.0	09/20/10 17:26	
Lead	mg/L	ND	1.0	09/20/10 17:26	
Selenium	mg/L	ND	0.20	09/20/10 17:26	
Silver	mg/L	ND	1.0	09/20/10 17:26	

LABORATORY CONTROL SAMPLE: 41244

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.0	100	80-120	
Barium	mg/L	5	5.1	102	80-120	
Cadmium	mg/L	5	5.1	103	80-120	
Chromium	mg/L	5	5.1	101	80-120	
Lead	mg/L	5	5.0	100	80-120	
Selenium	mg/L	5	5.0	100	80-120	
Silver	mg/L	2.5	2.5	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41245 41246

Parameter	Units	254835035 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Arsenic	mg/L	ND	5	5	4.8	4.9	97	98	75-125	2	
Barium	mg/L	ND	5	5	5.4	5.5	100	101	75-125	1	
Cadmium	mg/L	ND	5	5	5.1	5.1	101	103	75-125	1	
Chromium	mg/L	ND	5	5	5.1	5.1	101	102	75-125	.7	
Lead	mg/L	ND	5	5	4.8	4.9	96	97	75-125	1	
Selenium	mg/L	ND	5	5	5.0	5.0	99	101	75-125	2	
Silver	mg/L	ND	2.5	2.5	2.5	2.5	100	101	75-125	1	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: ICPM/22231 Analysis Method: EPA 6020
 QC Batch Method: EPA 6020 Analysis Description: 6020 MET
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015

METHOD BLANK: 851219 Matrix: Solid
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.38	09/17/10 01:26	
Barium	mg/kg	ND	0.23	09/17/10 01:26	
Cadmium	mg/kg	ND	0.060	09/17/10 01:26	
Chromium	mg/kg	ND	0.38	09/17/10 01:26	
Lead	mg/kg	ND	0.38	09/17/10 01:26	
Selenium	mg/kg	ND	0.38	09/17/10 01:26	
Silver	mg/kg	ND	0.38	09/17/10 01:26	

LABORATORY CONTROL SAMPLE: 851220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	16.4	15.4	94	75-125	
Barium	mg/kg	16.4	16.1	98	75-125	
Cadmium	mg/kg	16.4	15.9	97	75-125	
Chromium	mg/kg	16.4	16.0	97	75-125	
Lead	mg/kg	16.4	16.5	101	75-125	
Selenium	mg/kg	16.4	15.2	92	75-125	
Silver	mg/kg	16.4	16.0	98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851221 851222

Parameter	Units	10137695001		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec				
Arsenic	mg/kg	4.4	18.9	18.3	21.9	21.1	92	91	75-125	4		
Barium	mg/kg	65.7	18.9	18.3	86.3	77.6	108	65	75-125	11	M6	
Cadmium	mg/kg	0.27	18.9	18.3	18.8	17.6	98	95	75-125	7		
Chromium	mg/kg	14.2	18.9	18.3	33.4	29.6	101	84	75-125	12		
Lead	mg/kg	49.8	18.9	18.3	69.3	68.4	103	101	75-125	1		
Selenium	mg/kg	1.0	18.9	18.3	18.9	17.1	94	88	75-125	10		
Silver	mg/kg	ND	18.9	18.3	17.9	16.8	92	90	75-125	6		

MATRIX SPIKE SAMPLE: 851223

Parameter	Units	254835006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	59.7	16.4	148	537	75-125	M6
Barium	mg/kg	55.5	16.4	81.2	157	75-125	M6
Cadmium	mg/kg	0.50	16.4	16.0	94	75-125	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

MATRIX SPIKE SAMPLE:		851223					
Parameter	Units	254835006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	mg/kg	12.4	16.4	32.5	122	75-125	
Lead	mg/kg	122	16.4	317	1190	75-125	E,M6
Selenium	mg/kg	1.0	16.4	15.0	85	75-125	
Silver	mg/kg	0.65	16.4	18.4	108	75-125	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: ICPM/22232 Analysis Method: EPA 6020
 QC Batch Method: EPA 6020 Analysis Description: 6020 MET
 Associated Lab Samples: 254835016, 254835017, 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024

METHOD BLANK: 851225 Matrix: Solid
 Associated Lab Samples: 254835016, 254835017, 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034, 254835035

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.40	09/20/10 20:43	P6
Barium	mg/kg	ND	0.24	09/20/10 20:43	
Cadmium	mg/kg	ND	0.064	09/20/10 20:43	
Chromium	mg/kg	ND	0.40	09/20/10 20:43	
Lead	mg/kg	ND	0.40	09/20/10 20:43	
Selenium	mg/kg	ND	0.40	09/20/10 20:43	
Silver	mg/kg	ND	0.40	09/21/10 14:37	

LABORATORY CONTROL SAMPLE: 851226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	40	38.4	96	75-125	
Barium	mg/kg	40	38.4	96	75-125	
Cadmium	mg/kg	40	36.2	90	75-125	
Chromium	mg/kg	40	37.6	94	75-125	
Lead	mg/kg	40	37.5	94	75-125	
Selenium	mg/kg	40	34.6	87	75-125	
Silver	mg/kg	20	21.2	106	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851227 851228

Parameter	Units	254835016		MSD		MS		MSD		% Rec Limits	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Arsenic	mg/kg	128	47.5	43.4	155	155	58	62	75-125	.4	M6	
Barium	mg/kg	48.0	47.5	43.4	95.1	103	99	128	75-125	8	M6	
Cadmium	mg/kg	0.46	47.5	43.4	42.5	38.8	88	88	75-125	9		
Chromium	mg/kg	11.5	47.5	43.4	56.2	50.9	94	91	75-125	10		
Lead	mg/kg	375	47.5	43.4	450	490	156	264	75-125	9	E, M6	
Selenium	mg/kg	2.7	47.5	43.4	40.4	36.5	79	78	75-125	10		
Silver	mg/kg	1.8	23.8	21.6	24.5	25.9	95	111	75-125	6		

MATRIX SPIKE SAMPLE: 851229

Parameter	Units	254835026 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	830	47.7	539	-610	75-125	E, M6
Barium	mg/kg	77.6	47.7	141	133	75-125	M6

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

MATRIX SPIKE SAMPLE:		851229					
Parameter	Units	254835026 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/kg	1.0	47.7	43.7	89	75-125	
Chromium	mg/kg	27.0	47.7	68.9	88	75-125	
Lead	mg/kg	5030	47.7	3710	-2770	75-125	E,M6
Selenium	mg/kg	4.6	47.7	40.3	75	75-125	
Silver	mg/kg	26.2	23.9	32.0	24	75-125	M6

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: ICPM/22233 Analysis Method: EPA 6020
 QC Batch Method: EPA 6020 Analysis Description: 6020 MET
 Associated Lab Samples: 254835036, 254835037, 254835038, 254835039, 254835040, 254835041, 254835042, 254835043, 254835044, 254835045, 254835046, 254835047

METHOD BLANK: 851230 Matrix: Solid

Associated Lab Samples: 254835036, 254835037, 254835038, 254835039, 254835040, 254835041, 254835042, 254835043, 254835044, 254835045, 254835046, 254835047, 254835048, 254835049, 254835050, 254835051, 254835052, 254835053, 254835054, 254835055

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.48	09/22/10 11:44	
Barium	mg/kg	ND	0.29	09/20/10 22:30	
Cadmium	mg/kg	ND	0.076	09/20/10 22:30	
Chromium	mg/kg	ND	0.48	09/20/10 22:30	
Lead	mg/kg	ND	0.48	09/20/10 22:30	
Selenium	mg/kg	ND	0.48	09/20/10 22:30	
Silver	mg/kg	ND	0.48	09/22/10 11:44	

LABORATORY CONTROL SAMPLE: 851231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	45.9	47.5	104	75-125	
Barium	mg/kg	45.9	46.8	102	75-125	
Cadmium	mg/kg	45.9	47.8	104	75-125	
Chromium	mg/kg	45.9	44.7	97	75-125	
Lead	mg/kg	45.9	49.1	107	75-125	
Selenium	mg/kg	45.9	46.2	101	75-125	
Silver	mg/kg	22.9	21.3	93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851232 851233

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Qual
		254835036 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Arsenic	mg/kg	2080	60.2	54.6	1630	1350	-736	-1330	75-125	19	D3,M6	
Barium	mg/kg	89.9	60.2	54.6	189	148	164	107	75-125	24	D6,M6	
Cadmium	mg/kg	2.6	60.2	54.6	97.8	67.5	158	119	75-125	37	D6,M6	
Chromium	mg/kg	41.0	60.2	54.6	115	90.7	123	91	75-125	24	D6	
Lead	mg/kg	2450	60.2	54.6	3050	2690	997	432	75-125	13	D3,M6	
Selenium	mg/kg	9.0	60.2	54.6	92.2	61.7	138	96	75-125	40	D6,M6	
Silver	mg/kg	12.2	30	27.3	33.7	34.6	71	82	75-125	3	M6	

MATRIX SPIKE SAMPLE: 851234

Parameter	Units	254835046 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg		11.9	56.1	65.5	96	75-125
Barium	mg/kg		63.9	56.1	119	98	75-125

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QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

MATRIX SPIKE SAMPLE:		851234					
Parameter	Units	254835046 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/kg	1.4	56.1	53.0	92	75-125	
Chromium	mg/kg	11.0	56.1	62.7	92	75-125	
Lead	mg/kg	45.3	56.1	76.7	56	75-125	M6
Selenium	mg/kg	ND	56.1	51.0	90	75-125	
Silver	mg/kg	ND	28.1	26.5	94	75-125	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: ICPM/22256

Analysis Method: EPA 6020

QC Batch Method: EPA 6020

Analysis Description: 6020 MET

Associated Lab Samples: 254835056, 254835057, 254835058, 254835059, 254835060, 254835061, 254835062, 254835063

METHOD BLANK: 851656

Matrix: Solid

Associated Lab Samples: 254835056, 254835057, 254835058, 254835059, 254835060, 254835061, 254835062, 254835063

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.020	09/20/10 18:36	
Barium	mg/kg	ND	0.24	09/19/10 18:22	
Cadmium	mg/kg	ND	0.063	09/19/10 18:22	
Chromium	mg/kg	ND	0.40	09/19/10 18:22	
Lead	mg/kg	ND	0.40	09/19/10 18:22	
Selenium	mg/kg	ND	0.40	09/19/10 18:22	
Silver	mg/kg	ND	0.020	09/20/10 18:36	

LABORATORY CONTROL SAMPLE: 851657

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	15.7	16.8	107	75-125	
Barium	mg/kg	15.7	15.6	99	75-125	
Cadmium	mg/kg	15.7	14.9	95	75-125	
Chromium	mg/kg	15.7	15.5	99	75-125	
Lead	mg/kg	15.7	15.2	96	75-125	
Selenium	mg/kg	15.7	13.8	88	75-125	
Silver	mg/kg	15.7	16.2	103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851658 851659

Parameter	Units	1013777001		MS		MSD		MS		MSD		% Rec	
		Result	Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec	Limits	RPD	Qual		
Arsenic	mg/kg	4.4	15.2	16.5	18.9	22.5	96	110	75-125	17			
Barium	mg/kg	60.7	15.2	16.5	68.1	76.5	49	96	75-125	12	M6		
Cadmium	mg/kg	0.12	15.2	16.5	14.7	18.2	96	110	75-125	21	D6		
Chromium	mg/kg	7.5	15.2	16.5	21.5	26.8	92	117	75-125	22	D6		
Lead	mg/kg	3.2	15.2	16.5	18.0	21.6	97	112	75-125	18			
Selenium	mg/kg	ND	15.2	16.5	13.5	16.6	88	100	75-125	21	D6		
Silver	mg/kg	ND	15.2	16.5	16.0	19.7	104	118	75-125	21	D6		

MATRIX SPIKE SAMPLE: 851660

Parameter	Units	254815016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	1.7	16.7	16.8	91	75-125	
Barium	mg/kg	6.5	16.7	24.1	106	75-125	
Cadmium	mg/kg	0.079	16.7	15.7	94	75-125	
Chromium	mg/kg	5.7	16.7	20.0	86	75-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

MATRIX SPIKE SAMPLE:		851660						
Parameter	Units	254815016 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers	
Lead	mg/kg	0.43	16.7	16.3	95	75-125		
Selenium	mg/kg	ND	16.7	14.0	83	75-125		
Silver	mg/kg	ND	16.7	17.2	103	75-125		

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: ICPM/22290 Analysis Method: EPA 6020
 QC Batch Method: EPA 6020 Analysis Description: 6020 MET
 Associated Lab Samples: 254835064, 254835065

METHOD BLANK: 852395 Matrix: Water

Associated Lab Samples: 254835064, 254835065

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	0.50	09/22/10 14:45	
Barium	ug/L	ND	0.30	09/22/10 14:45	
Cadmium	ug/L	ND	0.080	09/22/10 14:45	
Chromium	ug/L	ND	0.50	09/22/10 14:45	
Lead	ug/L	ND	0.10	09/22/10 14:45	
Selenium	ug/L	ND	0.50	09/22/10 14:45	
Silver	ug/L	ND	0.50	09/22/10 14:45	

LABORATORY CONTROL SAMPLE: 852396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	80	83.2	104	80-120	
Barium	ug/L	80	83.1	104	80-120	
Cadmium	ug/L	80	85.2	107	80-120	
Chromium	ug/L	80	81.4	102	80-120	
Lead	ug/L	80	86.2	108	80-120	
Selenium	ug/L	80	81.4	102	80-120	
Silver	ug/L	80	86.2	108	80-120	

MATRIX SPIKE SAMPLE: 852397

Parameter	Units	254856001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	6.9	80	94.4	109	75-125	
Barium	ug/L	33.9	80	121	109	75-125	
Cadmium	ug/L	0.83	80	92.0	114	75-125	
Chromium	ug/L	5.2	80	90.6	107	75-125	
Lead	ug/L	12.9	80	103	112	75-125	
Selenium	ug/L	0.58	80	34.3	42	75-125	M1
Silver	ug/L	ND	80	35.6	44	75-125	M1

MATRIX SPIKE SAMPLE: 852398

Parameter	Units	10137902008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	4.7	80	95.3	113	75-125	
Barium	ug/L	981	80	1090	140	75-125	M1
Cadmium	ug/L	<0.020	80	92.8	116	75-125	
Chromium	ug/L	0.44J	80	87.8	109	75-125	
Lead	ug/L	0.028J	80	93.4	117	75-125	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

MATRIX SPIKE SAMPLE:		852398					
Parameter	Units	10137902008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	ug/L	0.10J	80	88.6	111	75-125	
Silver	ug/L	<0.071	80	15.6	19	75-125	M1

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch:	MERP/1264	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury TCLP
Associated Lab Samples:	254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015, 254835016, 254835017		

METHOD BLANK:	41149	Matrix:	Water
Associated Lab Samples:	254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015, 254835016, 254835017		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	8.3	09/21/10 11:56	

LABORATORY CONTROL SAMPLE:	41150					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	25	26.5	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	41151											
Parameter	Units	254835001	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual	
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits			
Mercury	ug/L	ND	25	25	26.8	26.5	107	106	85-115	1		

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1265 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
 Associated Lab Samples: 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034

METHOD BLANK: 41157 Matrix: Water
 Associated Lab Samples: 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	8.3	09/21/10 12:48	

LABORATORY CONTROL SAMPLE: 41158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	25	25.6	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41159 41160

Parameter	Units	254835018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	ND	25	25	26.2	26.1	102	101	85-115	.4	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1266 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
 Associated Lab Samples: 254835035, 254835036, 254835037, 254835058, 254835059, 254835060, 254835061

METHOD BLANK: 41306 Matrix: Water
 Associated Lab Samples: 254835035, 254835036, 254835037, 254835058, 254835059, 254835060, 254835061

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	8.3	09/21/10 13:40	

LABORATORY CONTROL SAMPLE: 41307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	25	28.0	112	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41308 41309

Parameter	Units	254835035 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	ND	25	25	27.9	27.8	111	111	85-115	.3	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35
Pace Project No.: 254835

QC Batch: MERP/1258 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 254835064, 254835065

METHOD BLANK: 40413 Matrix: Water
Associated Lab Samples: 254835064, 254835065

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/14/10 15:55	

LABORATORY CONTROL SAMPLE: 40414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 40415 40416

Parameter	Units	254861002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	0.28	5	5	5.2	5.4	98	102	75-125	4	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1254 Analysis Method: EPA 7471
 QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
 Associated Lab Samples: 254835029, 254835030, 254835031, 254835032, 254835033, 254835034, 254835035, 254835036, 254835037, 254835038, 254835039, 254835040, 254835041, 254835042, 254835043, 254835044, 254835045

METHOD BLANK: 39790 Matrix: Solid
 Associated Lab Samples: 254835029, 254835030, 254835031, 254835032, 254835033, 254835034, 254835035, 254835036, 254835037, 254835038, 254835039, 254835040, 254835041, 254835042, 254835043, 254835044, 254835045

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	09/13/10 09:31	

LABORATORY CONTROL SAMPLE: 39791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39792 39793

Parameter	Units	254835029 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	83.7	.42	.42	336	815	59300	176000	80-120	83	M1

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1255 Analysis Method: EPA 7471
 QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
 Associated Lab Samples: 254835046, 254835047, 254835048, 254835049, 254835050, 254835051, 254835052, 254835053, 254835054, 254835055, 254835056, 254835057, 254835058, 254835059, 254835060, 254835061, 254835062, 254835063

METHOD BLANK: 39794 Matrix: Solid
 Associated Lab Samples: 254835046, 254835047, 254835048, 254835049, 254835050, 254835051, 254835052, 254835053, 254835054, 254835055, 254835056, 254835057, 254835058, 254835059, 254835060, 254835061, 254835062, 254835063

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	09/13/10 10:28	

LABORATORY CONTROL SAMPLE: 39795

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39796 39797

Parameter	Units	254835046 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	ND	.45	.42	0.51	0.54	102	118	80-120	6	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1262 Analysis Method: EPA 7471
 QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014

METHOD BLANK: 40624 Matrix: Solid
 Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	09/20/10 08:36	

LABORATORY CONTROL SAMPLE: 40625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 40626 40627

Parameter	Units	254835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	9.8	.54	.57	13.1	11.2	611	247	80-120	16	M1

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MERP/1267 Analysis Method: EPA 7471
 QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
 Associated Lab Samples: 254835015, 254835016, 254835017, 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028

METHOD BLANK: 41339 Matrix: Solid
 Associated Lab Samples: 254835015, 254835016, 254835017, 254835018, 254835019, 254835020, 254835021, 254835022, 254835023, 254835024, 254835025, 254835026, 254835027, 254835028

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.10	09/21/10 09:22	

LABORATORY CONTROL SAMPLE: 41340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41341 41342

Parameter	Units	254835018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	976	.46	.48	913	1030	-13900	12100	80-120	12	M1

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MPRP/22380

Analysis Method: % Moisture

QC Batch Method: % Moisture

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 254835026, 254835029, 254835030, 254835031, 254835032, 254835033, 254835034

SAMPLE DUPLICATE: 854805

Parameter	Units	10137948001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	19.3	19.9	3	

SAMPLE DUPLICATE: 854835

Parameter	Units	20815672 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	28.4	29.5	4	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: MPRP/22492 Analysis Method: % Moisture
 QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
 Associated Lab Samples: 254835022, 254835023, 254835024, 254835025

SAMPLE DUPLICATE: 858599

Parameter	Units	10138309005 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	19.9	19.9	.3	

SAMPLE DUPLICATE: 858611

Parameter	Units	10138406001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	9.7	9.6	.7	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: PMST/1343

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 254835001, 254835002, 254835003, 254835004, 254835005, 254835006, 254835007, 254835008, 254835009, 254835010, 254835011, 254835012, 254835013, 254835014, 254835015, 254835016, 254835017, 254835018, 254835019, 254835020

SAMPLE DUPLICATE: 40509

Parameter	Units	254835001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	16.9	24.1	35	2n

SAMPLE DUPLICATE: 40510

Parameter	Units	254835011 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	7.5	8.2	9	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: PMST/1351

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 254835041, 254835042, 254835043, 254835044

SAMPLE DUPLICATE: 40842

Parameter	Units	254835041 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	9.4	10.6	13	

SAMPLE DUPLICATE: 40843

Parameter	Units	254959002 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	6.3	6.2	.9	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: PMST/1352 Analysis Method: ASTM D2974-87
 QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
 Associated Lab Samples: 254835021, 254835027, 254835028, 254835035, 254835036, 254835037, 254835038, 254835039, 254835040,
 254835045, 254835046, 254835047, 254835048, 254835049, 254835050, 254835051, 254835052, 254835053,
 254835054, 254835055

SAMPLE DUPLICATE: 41024

Parameter	Units	254835045 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	14.6	10.4	33	3n

SAMPLE DUPLICATE: 41025

Parameter	Units	254835053 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	8.9	11.2	22	

QUALITY CONTROL DATA

Project: Utica Mine 1080-35

Pace Project No.: 254835

QC Batch: PMST/1353

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 254835056, 254835057, 254835058, 254835059, 254835060, 254835061, 254835062, 254835063

SAMPLE DUPLICATE: 41026

Parameter	Units	254835058 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	5.4	5.8	6	

QUALIFIERS

Project: Utica Mine 1080-35

Pace Project No.: 254835

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-S Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

- 1n Sample analysis conducted on a TCLP extraction from less than 100 grams of soil.
- 2n The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits. RPD exceedence due to sample inhomogeneity.
- 3n The relative percent difference (RPD) value exceeds control due to sample inhomogeneity.
- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835001	1A Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835002	1A 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835003	1A 1-2	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835004	1B Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835005	1B 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835006	1B 0-2	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835007	1C Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835008	1C 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835009	1C 0-2	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835010	1-D Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835011	1-D 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835012	1-D 1-2	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835013	2A Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835014	2A 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835015	2A 1-2	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835016	2B 0-1	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835017	2C Surface	EPA 3010	MPRP/1771	EPA 6010	ICP/1680
254835018	2C 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835019	2C 1-2	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835020	2D Surface	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835021	2D 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835022	2D 1-2	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835023	3A 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835024	3B 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835025	3C Surface	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835026	3C 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835027	3C 1-2	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835028	4B 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835029	4C Surface	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835030	4C 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835031	4C 1-2	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835032	4D Surface	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835033	4D 0-1	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835034	Goldhouse North 0-6	EPA 3010	MPRP/1774	EPA 6010	ICP/1686
254835035	Goldhouse East 0-6"	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835036	Goldhouse West	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835037	Goldhouse South 0-6"	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835058	DUP-1	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835059	DUP-2	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835060	DUP-3	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835061	DUP-4	EPA 3010	MPRP/1775	EPA 6010	ICP/1687
254835001	1A Surface	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835002	1A 0-1	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835003	1A 1-2	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835004	1B Surface	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835005	1B 0-1	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835006	1B 0-2	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835007	1C Surface	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835008	1C 0-1	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835009	1C 0-2	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835010	1-D Surface	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835011	1-D 0-1	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835012	1-D 1-2	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835013	2A Surface	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835014	2A 0-1	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835015	2A 1-2	EPA 6020	ICPM/22231	EPA 6020	ICPM/9111
254835016	2B 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835017	2C Surface	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835018	2C 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835019	2C 1-2	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835020	2D Surface	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835021	2D 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835022	2D 1-2	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835023	3A 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835024	3B 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835025	3C Surface	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835026	3C 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835027	3C 1-2	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835028	4B 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835029	4C Surface	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835030	4C 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835031	4C 1-2	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835032	4D Surface	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835033	4D 0-1	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835034	Goldhouse North 0-6	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835035	Goldhouse East 0-6"	EPA 6020	ICPM/22232	EPA 6020	ICPM/9137
254835036	Goldhouse West	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835037	Goldhouse South 0-6"	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835038	LFN1B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835039	LFN1A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835040	LFN2B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835041	LFN2A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835042	LFN3B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835043	LFN3A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835044	LFN4B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835045	LFN4A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835046	LFN5B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835047	LFNFA	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835048	LFN6B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835049	LFN6A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835050	LFN7B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835051	LFN7A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835052	LFN8B	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835053	LFN8A	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835054	Alt SE	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138

Date: 09/24/2010 04:43 PM

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835055	Alt NE	EPA 6020	ICPM/22233	EPA 6020	ICPM/9138
254835056	Alt SW	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835057	Alt NW	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835058	DUP-1	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835059	DUP-2	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835060	DUP-3	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835061	DUP-4	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835062	UPSTREAM	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835063	DOWNSTREAM	EPA 6020	ICPM/22256	EPA 6020	ICPM/9125
254835064	UPSTREAM	EPA 6020	ICPM/22290	EPA 6020	ICPM/9142
254835065	DOWNSTREAM	EPA 6020	ICPM/22290	EPA 6020	ICPM/9142
254835001	1A Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835002	1A 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835003	1A 1-2	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835004	1B Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835005	1B 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835006	1B 0-2	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835007	1C Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835008	1C 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835009	1C 0-2	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835010	1-D Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835011	1-D 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835012	1-D 1-2	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835013	2A Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835014	2A 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835015	2A 1-2	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835016	2B 0-1	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835017	2C Surface	EPA 7470	MERP/1264	EPA 7470	MERC/1280
254835018	2C 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835019	2C 1-2	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835020	2D Surface	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835021	2D 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835022	2D 1-2	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835023	3A 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835024	3B 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835025	3C Surface	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835026	3C 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835027	3C 1-2	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835028	4B 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835029	4C Surface	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835030	4C 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835031	4C 1-2	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835032	4D Surface	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835033	4D 0-1	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835034	Goldhouse North 0-6	EPA 7470	MERP/1265	EPA 7470	MERC/1281
254835035	Goldhouse East 0-6"	EPA 7470	MERP/1266	EPA 7470	MERC/1282

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835036	Goldhouse West	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835037	Goldhouse South 0-6"	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835058	DUP-1	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835059	DUP-2	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835060	DUP-3	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835061	DUP-4	EPA 7470	MERP/1266	EPA 7470	MERC/1282
254835064	UPSTREAM	EPA 7470	MERP/1258	EPA 7470	MERC/1273
254835065	DOWNSTREAM	EPA 7470	MERP/1258	EPA 7470	MERC/1273
254835001	1A Surface	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835002	1A 0-1	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835003	1A 1-2	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835004	1B Surface	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835005	1B 0-1	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835006	1B 0-2	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835007	1C Surface	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835008	1C 0-1	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835009	1C 0-2	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835010	1-D Surface	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835011	1-D 0-1	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835012	1-D 1-2	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835013	2A Surface	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835014	2A 0-1	EPA 7471	MERP/1262	EPA 7471	MERC/1277
254835015	2A 1-2	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835016	2B 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835017	2C Surface	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835018	2C 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835019	2C 1-2	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835020	2D Surface	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835021	2D 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835022	2D 1-2	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835023	3A 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835024	3B 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835025	3C Surface	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835026	3C 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835027	3C 1-2	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835028	4B 0-1	EPA 7471	MERP/1267	EPA 7471	MERC/1279
254835029	4C Surface	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835030	4C 0-1	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835031	4C 1-2	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835032	4D Surface	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835033	4D 0-1	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835034	Goldhouse North 0-6	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835035	Goldhouse East 0-6"	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835036	Goldhouse West	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835037	Goldhouse South 0-6"	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835038	LFN1B	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835039	LFN1A	EPA 7471	MERP/1254	EPA 7471	MERC/1269

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835040	LFN2B	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835041	LFN2A	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835042	LFN3B	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835043	LFN3A	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835044	LFN4B	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835045	LFN4A	EPA 7471	MERP/1254	EPA 7471	MERC/1269
254835046	LFN5B	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835047	LFNFA	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835048	LFN6B	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835049	LFN6A	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835050	LFN7B	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835051	LFN7A	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835052	LFN8B	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835053	LFN8A	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835054	Alt SE	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835055	Alt NE	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835056	Alt SW	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835057	Alt NW	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835058	DUP-1	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835059	DUP-2	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835060	DUP-3	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835061	DUP-4	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835062	UPSTREAM	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835063	DOWNSTREAM	EPA 7471	MERP/1255	EPA 7471	MERC/1270
254835022	2D 1-2	% Moisture	MPRP/22492		
254835023	3A 0-1	% Moisture	MPRP/22492		
254835024	3B 0-1	% Moisture	MPRP/22492		
254835025	3C Surface	% Moisture	MPRP/22492		
254835026	3C 0-1	% Moisture	MPRP/22380		
254835029	4C Surface	% Moisture	MPRP/22380		
254835030	4C 0-1	% Moisture	MPRP/22380		
254835031	4C 1-2	% Moisture	MPRP/22380		
254835032	4D Surface	% Moisture	MPRP/22380		
254835033	4D 0-1	% Moisture	MPRP/22380		
254835034	Goldhouse North 0-6	% Moisture	MPRP/22380		
254835001	1A Surface	ASTM D2974-87	PMST/1343		
254835002	1A 0-1	ASTM D2974-87	PMST/1343		
254835003	1A 1-2	ASTM D2974-87	PMST/1343		
254835004	1B Surface	ASTM D2974-87	PMST/1343		
254835005	1B 0-1	ASTM D2974-87	PMST/1343		
254835006	1B 0-2	ASTM D2974-87	PMST/1343		
254835007	1C Surface	ASTM D2974-87	PMST/1343		
254835008	1C 0-1	ASTM D2974-87	PMST/1343		
254835009	1C 0-2	ASTM D2974-87	PMST/1343		
254835010	1-D Surface	ASTM D2974-87	PMST/1343		
254835011	1-D 0-1	ASTM D2974-87	PMST/1343		
254835012	1-D 1-2	ASTM D2974-87	PMST/1343		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Utica Mine 1080-35

Pace Project No.: 254835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254835013	2A Surface	ASTM D2974-87	PMST/1343		
254835014	2A 0-1	ASTM D2974-87	PMST/1343		
254835015	2A 1-2	ASTM D2974-87	PMST/1343		
254835016	2B 0-1	ASTM D2974-87	PMST/1343		
254835017	2C Surface	ASTM D2974-87	PMST/1343		
254835018	2C 0-1	ASTM D2974-87	PMST/1343		
254835019	2C 1-2	ASTM D2974-87	PMST/1343		
254835020	2D Surface	ASTM D2974-87	PMST/1343		
254835021	2D 0-1	ASTM D2974-87	PMST/1352		
254835027	3C 1-2	ASTM D2974-87	PMST/1352		
254835028	4B 0-1	ASTM D2974-87	PMST/1352		
254835035	Goldhouse East 0-6"	ASTM D2974-87	PMST/1352		
254835036	Goldhouse West	ASTM D2974-87	PMST/1352		
254835037	Goldhouse South 0-6"	ASTM D2974-87	PMST/1352		
254835038	LFN1B	ASTM D2974-87	PMST/1352		
254835039	LFN1A	ASTM D2974-87	PMST/1352		
254835040	LFN2B	ASTM D2974-87	PMST/1352		
254835041	LFN2A	ASTM D2974-87	PMST/1351		
254835042	LFN3B	ASTM D2974-87	PMST/1351		
254835043	LFN3A	ASTM D2974-87	PMST/1351		
254835044	LFN4B	ASTM D2974-87	PMST/1351		
254835045	LFN4A	ASTM D2974-87	PMST/1352		
254835046	LFN5B	ASTM D2974-87	PMST/1352		
254835047	LFNFA	ASTM D2974-87	PMST/1352		
254835048	LFN6B	ASTM D2974-87	PMST/1352		
254835049	LFN6A	ASTM D2974-87	PMST/1352		
254835050	LFN7B	ASTM D2974-87	PMST/1352		
254835051	LFN7A	ASTM D2974-87	PMST/1352		
254835052	LFN8B	ASTM D2974-87	PMST/1352		
254835053	LFN8A	ASTM D2974-87	PMST/1352		
254835054	Alt SE	ASTM D2974-87	PMST/1352		
254835055	Alt NE	ASTM D2974-87	PMST/1352		
254835056	Alt SW	ASTM D2974-87	PMST/1353		
254835057	Alt NW	ASTM D2974-87	PMST/1353		
254835058	DUP-1	ASTM D2974-87	PMST/1353		
254835059	DUP-2	ASTM D2974-87	PMST/1353		
254835060	DUP-3	ASTM D2974-87	PMST/1353		
254835061	DUP-4	ASTM D2974-87	PMST/1353		
254835062	UPSTREAM	ASTM D2974-87	PMST/1353		
254835063	DOWNSTREAM	ASTM D2974-87	PMST/1353		



Sample Condition Upon Receipt

Client Name: Alaska Analytical Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other Alaskan Airlines

Tracking #: 027 4307 0495

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags None Other _____ Temp. Blank Yes No

Thermometer Used 132013 or 101731962 or 226099 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 0.2, 0.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: NJS 9/4/10

Temp should be above freezing $\leq 6^{\circ}\text{C}$ Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>soil, water</u>		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>Water samples received pH neutral.</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, coliform, TOC, O&G		Initial when completed <u>NJS 9/4/10</u> Lot # of added preservative <u>043448</u>
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blanks Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody Record

NO# 254835



Client Contact Information
 Project Manager (PM): *Melissa St. Peter*
 Tel/Fax: *907-485-7225 / 7228*
 Lab Contact: *Kelley Lovjoy*
 Date: *9/2/10*
 Carrier: _____
 COC No: *10-0061*
 Page *1* of *6*

Project Name: *Utica Mine*
 Project Number: *1080-35*
 Analysis Turnaround Time
 Requested Turnaround Time if different from below:
 10 business days (Standard)
 3 business days
 2 Business Days
 1 Business Day

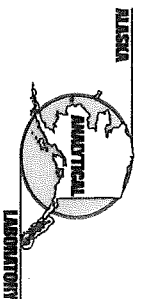
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	PM Email: <i>mshoop@alaskaanalytical.com</i>	Job No. <i>61</i>
IA SURFACE	8/31/10	10:04	Grab	Soil	1	✓	Comments: Lab needs to preserve H ₂ O sample, please see COC page 6.
IA O-1	8/31/10	10:13	Grab	Soil	1	✓	
IA 1-2	8/31/10	10:17	Grab	Soil	1	✓	
IB Surface	8/31/10	10:19	Grab	Soil	1	✓	
IB O-1	8/31/10	10:18	Grab	Soil	1	✓	
IB O-2	8/31/10	10:21	Grab	Soil	1	✓	
IC Surface	8/31/10	10:23	Grab	Soil	1	✓	
IC O-1	8/31/10	10:25	Grab	Soil	1	✓	
IC O-2	8/31/10	10:27	Grab	Soil	1	✓	
ID surface	8/31/10	10:31	Grab	Soil	1	✓	
ID O-1	8/31/10	10:35	Grab	Soil	1	✓	
ID 1-2	8/31/10	10:32	Grab	Soil	1	✓	

Preservation Used: 1 = Ice, 2 = Methanol 3 = Other
 Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/OC Requirements & Comments [Please note if there is Mercury in the sample.]
EPA 6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
EPA 1311/6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
Temp Blank 4.3g mercury: EPA 1311/6020/7471
color dump 4.3g " : EPA 6020/7471
gray water

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	<i>TRC</i>	<i>8/31/10 9:56 AM</i>	<i>Kelley Lovjoy</i>	<i>AAI</i>	<i>9/2/10 10:58 AM</i>
<i>Kelley Lovjoy</i>	<i>AAI</i>	<i>9/3/10 1:09 PM</i>	<i>Jyoti Sooy</i>	<i>PACE</i>	<i>9/4/10 10:32 0:50</i>

Chain of Custody Record



Client Contact Information

Traavis Peterson Env. Consult
 399 4th Street
 Fairbanks, AK 99712

Project Manager (PM): Melissa Shugart

Tel/Fax: 907-455-7225 / 7228

Analysis Turnaround Time

Requested Turnaround Time if different from below:

Project Name: Office Mine
 Project Number: 1080-35

- 10 business days (Standard)
- 3 business days
- 2 Business Days
- 1 Business Day

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.
2A Surface	8/31/10	10:49	Grab	Soil	1
2A 0-1	8/31/10	10:52	Grab	Soil	1
2A 1-2	8/31/10	10:53	Grab	Soil	1
2B 0-1	8/31/10	10:47	Grab	Soil	1
2C Surface	8/31/10	10:41	Grab	Soil	1
2C 0-1	8/31/10	10:43	Grab	Soil	1
2C 1-2	8/31/10	10:45	Grab	Soil	1
2D Surface	8/31/10	10:38	Grab	Soil	1
2D 0-1	8/31/10	10:36	Grab	Soil	1
2D 1-2	8/31/10	10:40	Grab	Soil	1
3A 0-1	8/31/10	11:06	Grab	Soil	1
3B 0-1	8/31/10	11:08	Grab	Soil	1

Preservation Used: 1 = Ice, 2 = Methanol 3 = Other

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

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

Special Instructions/QC Requirements & Comments [Please note if there is Mercury in the sample.]
 EPA 6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
 EPA 1311/6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
 Temp Bundle Mercury: EPA 1311/6020/7471
 4.3C
 Center temp 4.5C : EPA 6020/7471

PM Email: mshugart@anal.com
 Lab Contact: Kelley Lovejoy

Date: 9/2/10
 Carrier:

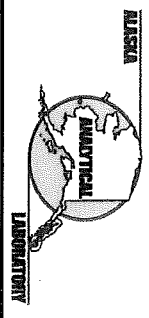
COC No: _____
 Page 2 of 6
 Job No. _____

Comments:

Sample Specific Notes:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	TRACOR	8/31/10 9:58am	Kelley Lovejoy	AAE	9/3/10 10:15 AM
Kelley Lovejoy	AAE	9/3/10 1:00 PM	Sybil Samy	BCE	9/4/10 10:32

Chain of Custody Record



msk@pacbell.net

Date: 9/2/10

COC No:

Page 3 of 6

Job No.

LABORATORY

Client Contact Information

IRBUI's/Peterson Env. Consult.
 399 2nd Street
 Fairbanks, AK 99701

Lab Contact: Kelley Lovejoy

Carrier:

Project Manager (PM): Melissa Schmitt
 Tel/Fax: 907 455-7225 / 7228

Analysis Turnaround Time

Requested Turnaround Time if different from below:

- 10 business days (Standard)
- 3 business days
- 2 Business Days
- 1 Business Day

Comments:

Project Name: Utica Mine
 Project Number: 1080-35

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.
3C Surface	8/24/10	10:58	Grab	Soil	1
3C O-1	8/31/10	11:01	Grab	Soil	1
3C 1-2	8/31/10	11:02	Grab	Soil	1
4B O-1	8/31/10	11:15	Grab	Soil	1
4C Surface	8/31/10	11:18	Grab	Soil	1
4C O-1	8/31/10	11:19	Grab	Soil	1
4C O-2	8/31/10	11:21	Grab	Soil	1
4D Surface	8/31/10	11:23	Grab	Soil	1
4D O-1	8/31/10	11:25	Grab	Soil	1
Goldhouse north O-1	8/31/10	11:52	Grab	Soil	1
Goldhouse east O-6"	8/31/10	11:47	Grab	Soil	1
Goldhouse west	8/31/10	11:49	Grab	Soil	1

EPA 6020 TOTAL
 EPA 1311/6020 CLP
 Mercury EPA 6020
 Mercury EPA 7471

Sample Specific Notes:

Preservation Used: 1 = Ice, 2 = Methanol 3 = Other
 Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown

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

Special Instructions/QC Requirements & Comments [Please note if there is Mercury in the sample.]
 EPA 6020: arsenic, barium, cadmium, chromium, lead, selenium, silver, sulfur, copper, temp 4.5°C
 EPA 1311/6020: arsenic, barium, cadmium, chromium, lead, selenium, silver, sulfur, copper, temp 4.5°C
 Mercury: EPA 1311/6020/7471
 Mercury: EPA 6020/7471

Relinquished by: *[Signature]* Company: *TRICE* Date/Time: 9/3/10 9:50pm
 Received by: *Kelley Lovejoy* Company: *AAI* Date/Time: 9/3/10 10:15 AM

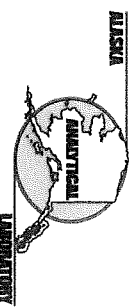
Relinquished by: *Kelley Lovejoy* Company: *AAI* Date/Time: 9/3/10 10:00 AM
 Received by: *Jyothi Soamy* Company: *PACE* Date/Time: 9/4/10 10:52 05°C

Chain of Custody Record



Client Contact Information		Project Manager (PM): <i>Melissa Skyray</i>		PM Email: <i>mlopez@alaskaanalytical.com</i>		Date: <i>9/2/10</i>		COC No. _____	
Trais/Peterson Sov. Consult 329 2nd Street Fairbanks, AK 99701		Tel/Fax: 907 455-7225		Lab Contact: Kelley Lovejoy		Carrier: _____		Page <i>4</i> of <i>6</i>	
Project Name: <i>Utca Mine</i>		Project Number: <i>1080-35</i>		Requested Turnaround Time if different from below:		Analysis Turnaround Time		Job No. _____	
<input checked="" type="checkbox"/> 10 business days (Standard) <input type="checkbox"/> 3 business days <input type="checkbox"/> 2 Business Days <input type="checkbox"/> 1 Business Day		Sample Identification		Sample Date		Sample Time		Sample Type	
Goldhouse South 0-6"		8/5/10		11:54		Grab		Soil	
LEN1B		8/3/10		12:55		Grab		Soil	
LEN1A		8/3/10		12:28		Grab		Soil	
LEN2B		8/3/10		12:32		Grab		Soil	
LEN3A		8/3/10		12:57		Grab		Soil	
LEN3B		8/3/10		1:01 pm		Grab		Soil	
LEN3A		8/3/10		12:33		Grab		Soil	
LEN4B		8/3/10		12:34		Grab		Soil	
LEN4A		8/3/10		1:02 pm		Grab		Soil	
LEN5B		8/3/10		1:05 pm		Grab		Soil	
LEN5A		8/3/10		12:35		Grab		Soil	
LEN6B		8/3/10		12:37		Grab		Soil	
Preservation Used: 1 = Ice, 2 = Methanol 3 = Other Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		EPA 6020 TOTAL EPA 1311/6020 TOLP Mercury EPA 8580 Mercury EPA 1311/6020		Received by: <i>Kelley Skyray</i> Received by: <i>Typhie Snowy</i>		Company: <i>ATL</i> Company: <i>ATL</i> Company: <i>ATL</i> Company: <i>ATL</i>	
Special Instructions/OC Requirements & Comments [Please note if there is Mercury in the sample.] EPA 6020: arsenic, barium, cadmium, chromium, lead, selenium, silver, tungsten EPA 1311/6020: arsenic, barium, cadmium, chromium, lead, selenium, silver, tungsten Mercury: EPA 1311/6020/7471 Mercury: EPA 1311/6020/7471 Mercury: EPA 1311/6020/7471 Mercury: EPA 1311/6020/7471		Date/Time: <i>9/3/10 9:54 PM</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/4/10 10:32</i>		Date/Time: <i>9/3/10 9:54 PM</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/4/10 10:32</i>		Date/Time: <i>9/3/10 9:54 PM</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/4/10 10:32</i>		Date/Time: <i>9/3/10 9:54 PM</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/3/10 10:32</i> Date/Time: <i>9/4/10 10:32</i>	

Chain of Custody Record



Client Contact Information: **Ironis/Johnson Env. Consult**
 321 2nd Street
 Fairbanks, AK 99701

Project Manager (PM): **Ms. Lisa Sklar**
 Tel/Fax: **87 455-7225/7222**

Analysis Turnaround Time
 Requested Turnaround Time if different from below:
 10 business days (Standard)
 3 business days
 2 Business Days
 1 Business Day

Project Name: **Otica Mine**
 Project Number: **1080-35**

PM Email: **ms.l.sklar@alaska-analytical.com**
 Lab Contact: **Kelley Lovejoy**
 Date: **9/2/10**
 Carrier: **ACE**

COC No.: **5** of **6**
 Job No.:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Comments
LENVA	8/31/10	1:04pm	Grab	Soil	1	✓
LENVA	8/31/10	1:06pm	Grab	Soil	1	✓
LENVA	8/31/10	12:45	Grab	Soil	1	✓
LENVA	8/31/10	12:49	Grab	Soil	1	✓
LENVA	8/31/10	1:07pm	Grab	Soil	1	✓
AIT SE	8/31/10	1:12pm	Grab	Soil	1	✓
AIT NE	8/31/10	1:14pm	Grab	Soil	1	✓
AIT SW	8/31/10	1:13pm	Grab	Soil	1	✓
AIT NW	8/31/10	1:14pm	Grab	Soil	1	✓
DUP-1	8/31/10	23:00	Grab	Soil	1	✓
DUP-2	8/31/10	23:00	Grab	Soil	1	✓
DUP-3	8/31/10	23:00	Grab	Soil	1	✓

Preservation Used: 1 = Ice, 2 = Methanol 3 = Other

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

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

Special Instructions/OC Requirements & Comments [Please note if there is Mercury in the sample.]
EPA 6020: arsenic, barium, cadmium, chromium, lead, silver, selenium, Temp Blank 4.32
EPA 1311/6020: TCLP
EPA 6020: mercury
EPA 1311/6020: mercury
EPA 1311/6020: TCLP
EPA 6020 TOTAL
EPA 1311/6020 TCLP
mercury EPA 6020
mercury EPA 1311/6020

Relinquished by: **[Signature]**
 Company: **ATL**
 Date/Time: **9/3/10 9:50 AM**

Relinquished by: **[Signature]**
 Company: **ATL**
 Date/Time: **9/3/10 1:09 PM**

Relinquished by: **[Signature]**
 Company: **ATL**
 Date/Time: **9/3/10 1:09 PM**

Received by: **[Signature]**
 Company: **ATL**
 Date/Time: **9/3/10 10:52 AM**

Received by: **[Signature]**
 Company: **PACE**
 Date/Time: **9/4/10 10:32 AM**

Chain of Custody Record



Client Contact Information			Project Manager (PM): <i>Melissa Skyles</i>			PM Email: <i>mskyles@aalab.com</i>			Date: <i>9/2/02</i>		
Taus/Relson Env. Consult.			Tel/Fax: <i>907 455-7225/7428</i>			Lab Contact: <i>Kelley Lovejoy</i>			Carrier: <i>1/2/02</i>		
399 2nd Street			Analysis Turnaround Time			COC No: <i>6</i>			Page <i>6</i> of <i>6</i>		
Fairbanks, AK 99701			Requested Turnaround Time if different from below:			Job No.			Comments:		
Project Name: <i>Utica Mine</i>			<input checked="" type="checkbox"/> 10 business days (Standard)			Project Number: <i>1080-35</i>			Sample Specific Notes:		
			<input type="checkbox"/> 3 business days								
			<input type="checkbox"/> 2 Business Days								
			<input type="checkbox"/> 1 Business Day								
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	EPA 6020 TOTAL EPA 1311/6020 TCLP Mercury EPA 6020/ Mercury EPA 1311/6020				
DUP-4		8/3/10	23:00	Grab	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
UPSTREAM		8/3/10	6:43pm	Grab	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DOUBTSTREAM		8/3/10	7:08pm	Grab	Soil	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
UPSTREAM		8/3/10	6:43pm	Grab	H ₂ O	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	HNO ₃ Preserve (CAS)
DOUBTSTREAM		8/3/10	7:08pm	Grab	H ₂ O	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	HNO ₃ Preserve (CAS)

Preservation Used: 1 = Ice, 2 = Methanol 3 = Other SEE NOTES

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

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

Special Instructions/OC Requirements & Comments [Please note if there is Mercury in the sample.]
 EPA 6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
 EPA 1311/6020: arsenic, barium, cadmium, chromium, lead, selenium, silver
 Temp 8:10am Mercury: EPA 1311/6020/7471
 4.30c
 4.50c
 Custody Seals intact

Relinquished by: *[Signature]* Company: *MPBC* Date/Time: *9/3/10 9am* Received by: *Kelley Lovejoy* Company: *AAI* Date/Time: *9/3/10 10:15 AM*

Relinquished by: *[Signature]* Company: *AAI* Date/Time: *9/10/10 10:32* Received by: *[Signature]* Company: *PACE* Date/Time: *9/10/10 0:50c*

Relinquished by: *[Signature]* Company: *AAI* Date/Time: *9/10/10 10:32* Received by: *[Signature]* Company: *PACE* Date/Time: *9/10/10 0:50c*

CLIENT: Alaska Analytical

COC PAGE 1 of 6
COC ID# _____

Comments

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG ^{1/2} FU	WGKU	Comments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												Trip Blank? <u>No</u>
12												

AG1H	1 liter HCL amber glass	BP2S	500mL H2SO4 plastic	JGFU	4oz unreserved amber wide
AG1U	1 liter unreserved amber glass	BP2U	500mL unreserved plastic	R	terra core kit
AG2S	500mL H2SO4 amber glass	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
AG2U	500mL unreserved amber glass	BP3C	250mL NaOH plastic	VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass	BP3N	250mL HNO3 plastic	VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250mL H2SO4 plastic	VG9U	40mL unreserved clear vial
BG1U	1 liter unreserved glass	BP3U	250mL unreserved plastic	VG9W	40mL glass vial preweighed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40mL Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40mL HCL amber vial	WGFU	4oz clear soil jar
BP1U	1 liter unreserved plastic	DG9M	40mL MeOH clear vial	WGFV	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40mL Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic	DG9U	40mL unreserved amber vial		
BP2O	500mL NaOH plastic		1 Wipe/Swab		



CLIENT: Alaska Analytical

COC PAGE# 2 of 6
COC ID# _____

Comments

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG ^{1/2} FU	WGKU	Comments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												Trip Blank? <u>Yes</u>
12												

AG1H	1 liter HCL amber glass	BP2S	500ml H2SO4 plastic	JGFU	4oz unreserved amber wide
AG1U	1 liter unreserved amber glass	BP2U	500ml unreserved plastic	R	terra core kit
AG2S	500ml H2SO4 amber glass	BP2Z	500ml NaOH Zn Ac	U	Summa Can
AG2U	500ml unreserved amber glass	BP3C	250ml NaOH plastic	VG9H	40ml HCL clear vial
AG3S	250ml H2SO4 amber glass	BP3N	250ml HNO3 plastic	VG9T	40ml Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250ml H2SO4 plastic	VG9U	40ml unreserved clear vial
BG1U	1 liter unreserved glass	BP3U	250ml unreserved plastic	VG9W	40ml glass vial preweighed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40ml Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40ml HCL amber voe vial	WGFU	4oz clear roll jar
BP1U	1 liter unreserved plastic	DG3M	40ml MeOH clear vial	WGFY	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40ml Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500ml HNO3 plastic	DG9U	40ml unreserved amber vial		
BP2O	500ml NaOH plastic		1 Wipes/Swab		



CLIENT: Alaska Analytical

COC PAGE# 3 of 6
 COC ID# _____

Comments

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG ^{1/2} FU	WGKU									
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				Trip Blank? <u>PLB</u>
12																				

AG1H	1 liter HCL amber glass	BP2S	500ml H2SO4 plastic	JG ^{1/2} FU	4oz unpreserved amber vials
AG1U	1 liter unpreserved amber glass	BP2U	500ml unpreserved plastic	R	terra core kit
AG2S	500ml H2SO4 amber glass	BP2Z	500ml NaOH Zn Ac	U	Summa Can
AG2U	500ml unpreserved amber glass	BP3C	250ml NaOH plastic	VG9H	40ml HCL clear vial
AG3S	250ml H2SO4 amber glass	BP3N	250ml HNO3 plastic	VG9T	40ml Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250ml H2SO4 plastic	VG9U	40ml unpreserved clear vial
BG1U	1 liter unpreserved glass	BP3U	250ml unpreserved plastic	VG9W	40ml glass vial preweighed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40ml Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40ml HCL amber vial	WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic	DG9M	40ml MBOH clear vial	WGFY	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40ml Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500ml HNO3 plastic	DG9U	40ml unpreserved amber vial		
BP2O	500ml NaOH plastic		1 Wipe/Swab		



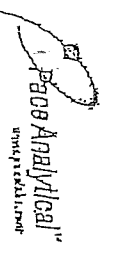
CLIENT: Alaska Analytical

COC PAGE# 4 of 6
 COCID# _____

Comments

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG ¹ FU	WGKU	Comments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												Trip Blank? <u>No</u>
12												

AG1H	1 liter HCL amber glass	BP2S	500ml H2SO4 plastic	JGFU	4oz unpreserved amber wide
AG1U	1 liter unpreserved amber glass	BP2U	500ml unpreserved plastic	R	terra core kit
AG2S	500ml H2SO4 amber glass	BP2Z	500ml NaOH Zn Ac	U	Summa Can
AG2U	500ml unpreserved amber glass	BP3C	250ml NaOH plastic	VG9H	40ml HCL clear vial
AG3S	250ml H2SO4 amber glass	BP3N	250ml HNO3 plastic	VG9T	40ml Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250ml H2SO4 plastic	VG9U	40ml unpreserved clear vial
BG1U	1 liter unpreserved glass	BP3U	250ml unpreserved plastic	VG9W	40ml glass vial prewashed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40ml Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40ml HCL amber vna vial	WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic	DG9M	40ml MeOH clear vial	WGFY	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40ml Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500ml HNO3 plastic	DG9U	40ml unpreserved amber vial		
BP2O	500ml NaOH plastic		1 Wipes/Swab		



CLIENT: Alaska Analytical

COC PAGE# 5 of 6
COC ID# _____



Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG9U	WGKU	Comments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												Trip Blank? <u>No</u>
12												

AG1H	1 liter HCL amber glass	BP2S	500mL H2SO4 plastic	JGFU	4oz unpreserved amber vials
AG1U	1 liter unpreserved amber glass	BP2U	500mL unpreserved plastic	R	terra core kit
AG2S	500mL H2SO4 amber glass	BP2Z	500mL NaOH Zn Ac	U	Summa Can
AG2U	500mL unpreserved amber glass	BP3C	250mL NaOH plastic	VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass	BP3N	250mL HNO3 plastic	VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250mL H2SO4 plastic	VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass	BP3U	250mL unpreserved plastic	VG9W	40mL glass vial prewashed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40mL Na Bisulfate amber vial	VSG	Headspaces septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40mL HCL amber vial	WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic	DG9M	40mL MeOH clear vial	WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40mL Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic	DG9U	40mL unpreserved amber vial		
BP2O	500mL NaOH plastic		Wipe/Swab		

CLIENT: Alaska Analytical

COC PAGE# 6 of 6
 COC ID# _____

Comments

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG9U	WGKU										
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Trip Blank? No

AG1H	1 liter HCL amber glass	BP2S	500ml H2SO4 plastic	JGFU	4oz unreserved amber wide
AG1U	1 liter unreserved amber glass	BP2U	500ml unreserved plastic	R	terra core kit
AG2S	500ml H2SO4 amber glass	BP2Z	500ml NaOH, Zn Ac	U	Summa Can
AG2U	500ml unreserved amber glass	BP3C	250ml NaOH plastic	VG9H	40ml HCL clear vial
AG3S	250ml H2SO4 amber glass	BP3N	250ml HNO3 plastic	VG9T	40ml Na Thio. clear vial
BG1H	1 liter HCL clear glass	BP3S	250ml H2SO4 plastic	VG9U	40ml unreserved clear vial
BG1U	1 liter unreserved glass	BP3U	250ml unreserved plastic	VG9W	40ml glass vial preweighed (EPA 5035)
BP1N	1 liter HNO3 plastic	DG9B	40ml Na Bisulfate amber vial	VSA	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic	DG9H	40ml HCL amber vial	WGFU	4oz clear roll jar
BP1U	1 liter unreserved plastic	DG9M	40ml MeOH clear vial	WGFY	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac	DG9T	40ml Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500ml HNO3 plastic	DG9U	40ml unreserved amber vial		
BP2O	500ml NaOH plastic		Wipe/Swab		



Alaska Air Cargo™

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800-225-2752 ALASKACARGO.COM

SHIPPER

MAPPA INC
1956 RICHARDSON HWY
NORTH POLE, AK 99705

CONSIGNEE

Pace Analytical Svcs
HFPU
Seattle, WA 99

AWB Number	Pieces	Weight	Origin / Dest	Nature of Goods	Arriving Flight Details	Customs
027-43070495	2	102.0 Lb	FAI-SEA	SOIL SAMPLES	AS 128 04-Sep-2010	

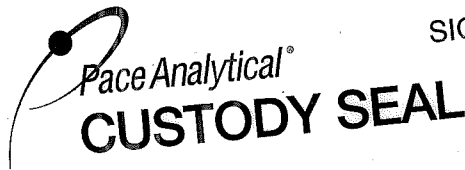
Storage Locations: AWB5 2

LOCAL CHARGES :

Bonded Warehouse

Total Local Charges:	USD	0.00
VAT 1.34%:	USD	0.00
Grand Total:	USD	0.00

PO Number




SIGNATURE Kallay Lawrence
DATE 9/3/10

RECEIPT STATEMENT	
The undersigned acknowledge the receipt of above mentioned consignment complete and in good condition.	
Date: <u>04-Sep-2010</u>	Registration: _____
Time: <u>10:32</u>	Signature: <u>Swamy</u>
Driver: <u>Jyothi</u>	

027 FAI 4307 0495

027-4307 0495

Shipper's Name and Address MAPPA INC 1956 RICHARDSON HWY NORTH POLE, AK 99705 USA Tel: 9074881266	Shipper's Account Number 27440067686	Not Negotiable Air Waybill Issued By  ALASKA AIRLINES & HORIZON AIR P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM
	Customer's ID Number 10564	

Consignee's Name and Address Pace Analytical Svcs HFPU Seattle, WA 99 USA Tel: 206-767-5060	Consignee's Account Number	Also notify Tel:
--	----------------------------	-----------------------------

Issuing Carrier's Agent and City	Accounting Information MAPPA INC 1956 RICHARDSON HWY NORTH POLE, AK 99705 USA	10564
Agent's IATA Code	Account No.	

Airport of Departure (Addr. of First Carrier) and Requested Routing Fairbanks	GoldStreak
--	------------

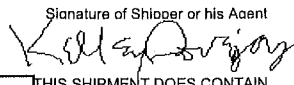
To By First Carrier SEA Alaska Airlines	To / By	To / By	Currency USD PX	WT/VAL X	Other X	Declared Value For Carriage NVD	Declared Value For Customs NCV
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Airport of Destination Seattle	Flight/Date AS 128/04	Flight/Date	Amount of Insurance XXX
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Handling Information TENDERED BY KELLEY LOVEJOY	SCI
--	-----

No of Pieces	Gross Weight	kg	lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
2	102.0	L	Q		102.0		AS AGREED	SOIL SAMPLES Dims: 25 x 14 x18 x 1 26 x 14 x14 x 1
2	102.0						AS AGREED	GSX PER Volume:6.600

Prepaid AS AGREED	Weight Charge	Collect	Other Charges MYC 12.24 SCC 2.04
	Valuation Charge		
	Tax		

Total Other Charges Due Agent	Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo. For: MAPPA INC <input checked="" type="checkbox"/> THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS <input type="checkbox"/> THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS
Total Other Charges Due Carrier	
Signature of Shipper or his Agent 	

Total Prepaid AS AGREED	Total Collect	03 Sep 2010 16:13	Fairbanks	Alaska Airlines
		Executed On (Date)	at (Place)	Signature of Issuing Carrier or its Agent

027-4307 0495

Laboratory Data Review Checklist

Completed by:

Title:

Melissa S. Shippey

Date:

January 25, 2011

CS Report Name:

Utica Mine Camp Site Cleanup

Report Date:

October 4, 2010

Consultant Firm:

Travis/Peterson Environmental Consulting, Inc.

Laboratory Name:

Pace Analytical Laboratory

Laboratory Report Number: 254835

ADEC File Number: 510.38.002

ADEC RecKey Number:

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No

Comments:

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No

Comments:

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No

Comments:

b. Correct analyses requested?

Yes No

Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes No Comments:

Cooler temperatures were 4.2°C and 4.5°C , temperature blanks were 4.3°C .

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No Comments:

Samples were all in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No Comments:

The Sample Condition Upon Receipt form completed by Pace personnel states that the sampler name and signature are not on the COC submitted with the samples. This is not correct. Dr. Eddie Packee Jr. collected the samples and he filled out the COC's and signed them before submitting them to AAL/Pace. Also, this SCUR form states near the bottom that "all containers needing preservation are found to be in compliance with EPA recommendation" this item is checked NO. however an explanation of this is not really provided.

TPECI personnel had originally requested that Pace lab personnel add the HNO_3 to the water samples for metals because the airlines will not allow us to ship sample containers with acid preservative in them – specifically HNO_3 . This presents a problem for field personnel since we must collect unpreserved samples in some cases. Alaska Airlines has been very picky on this issue whenever we try to ship sample kits to the field on the cargo planes.

Sample condition for both soil and water samples was good. There were no missing jars, incomplete jar labels or broken sample jars in the lot of samples submitted Pace.

e. Data quality or usability affected? Explain.

Comments:

No

4. Case Narrative

a. Present and understandable?

Yes No Comments:

Sample Analyte count presented on pages 3 through 10 of 97. Project narrative presented on pages 11 through 21 of 97 pages.

b. Discrepancies, errors or QC failures identified by the lab?

Yes No

Comments:

For method EPA 6010 a note is presented on pages 11 and 12 that some of the sample analyses were conducted on a TCLP extraction from less than 100 grams of soil. The samples that this comment applies to are listed underneath the comment along with a notation that it was for silver analysis. This comment was applied to QC batch numbers 1771, 17741, and 1775. There are no indications on the part of the lab as to whether or not this affects data quality. TPECI assumes data quality is fine.

c. Were all corrective actions documented?

Yes No

Comments:

None taken/documentated

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No effect anticipated

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No

Comments:

b. All applicable holding times met?

Yes No

Comments:

c. All soils reported on a dry weight basis?

Yes No

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes No

Comments:

e. Data quality or usability affected?

Comments:

N/A

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No Comments:

Based on the information presented in the lab report multiple Method Blanks were analyzed for EPA 6020, EPA 6010, EPA 7470 and EPA 7471 for soil and water and all were ND.

ii. All method blank results less than PQL?

Yes No Comments:

All were non-detect.

iii. If above PQL, what samples are affected?

Comments:

N/A

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No Comments:

LCS number 40946 for EPA 6010 TCLP had good recoveries and results were within QC criteria.
LCS number 41153 for EPA 6010 TCLP had good recoveries and results were within QC criteria.
The LCS result however for barium was Jflagged and considered an estimated result.
LCS number 41244 for EPA 6010 TCLP had good recoveries and results were within QC criteria.
LCS number 851220 for EPA 6020 total metals had good recoveries and results were within QC criteria.
LCS number 851226 for EPA 6020 total metals had good recoveries and results were within QC criteria.
LCS number 851231 for EPA 6020 tot. metals had good recoveries and results were within QC criteria.
LCS number 851657 for EPA 6020 total metals had good recoveries and results were within QC criteria.
LCS number 852396 for EPA 6020 total metals had good recoveries and results were within QC criteria.
LCS number 41150 for EPA 7470 TCLP mercury had acceptable recovery and results were within QC criteria.
LCS number 41158 for EPA 7470 TCLP mercury had good % recovery and results were within QC criteria.
LCS number 41307 for EPA 7470 TCLP mercury had good % recovery and results were within QC criteria.
LCS number 40414 for EPA 7470 mercury had good % recovery and results were within QC criteria.
LCS number 39791 for EPA 7471 mercury had good % recovery and results were within QC criteria.
LCS number 39795 for EPA 7471 mercury had good % recovery and results were within QC criteria.
LCS number 40625 for EPA 7471 mercury had good % recovery and results were within QC criteria.
LCS number 41340 for EPA 7471 mercury had good % recovery and results were within QC criteria.

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No Comments:

See above notes.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No Comments:

See notes in b. above.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

The Matrix spike and Matrix spike duplicate samples had RPD's calculated for their results and they were as follows:

MS/MSD number 40947 for EPA 6010 TCLP metals had good % recoveries and good RPD's for all analytes;

MS/MSD number 41155 for EPA 6010 TCLP metals had good % recoveries and good RPDs for all analytes;

MS/MSD number 41245 for EPA 6010 TCLP metals had good % recoveries and good RPDs for all analytes;

MS/MSD number 851221 for EPA 6020 metals had good % recoveries and good RPDs for all analytes except barium. The MDS % recovery was 65 which is below the lower limit of 75. This result was flagged as M6 by Pace labs which states that MS and MSD recovery were not evaluated against control limits due to sample dilution.

MS number 851223 for EPA 6020 total metals had good % recoveries and good RPDs for all analytes except arsenic, barium, and lead which had MS recoveries outside established control limits. These items were flagged with M6 and the lead result also had an "E" flag which means analyte concentration exceeded the calibration range. The reported result is estimated.

MS/MSD number 851227 for EPA 6020 total metals had good recoveries and RPDs except for arsenic, barium, and lead. These analytes were flagged with the same M6 data flag the previous MS/MSDs that were data flagged.

MS/MSD 851229 for EPA 6020 total metals had four analytes with % recoveries that were out of range. Results were flagged as M6, some with an "E" flag also.

MS/MSD 851232 for EPA 6020 total metals had one analyte with % recovery that was within range. All other analytes had % recoveries and RPDs out of acceptance range and their results were flagged with either D3, D6, and/or M6 or some combination thereof. See page 71 of 97 for the details on this QC sample.

MS 851234 for EPA 6020 metals had one analyte with % recovery outside the acceptance range. The results were flagged with M6.

MS 851660 for EPA 6020 metals had % recoveries that were all within acceptance criteria.

MS 852397 for EPA 6020 metals had two analytes with % recoveries that were below the lower acceptance range for their analysis. The results were flagged with M1. The remaining results were all within acceptance range.

MS 852398 for EPA 6020 metals had two analytes with % recoveries outside acceptance range and both were flagged with an M1. The remaining results were all within QC criteria for this type of sample.

MS/MSD 41151 for EPA 7470 mercury had acceptable results and percent recoveries therefore the RPDs were also within QC criteria for this analysis.

MS/MSD 41159 for EPA 7470 mercury had acceptable results and percent recoveries therefore the RPDs were within QC criteria for this analysis.

MS/MSD 41308 for EPA 7470 TCLP mercury had % recoveries and RPDs within acceptance range.

MS/MSD 40415 for EPA 7470 TCLP mercury had % recoveries and RPDs within acceptance range.

MS/MSD 39792 for EPA 7471 total mercury had % recoveries that were fairly high. The RPD was within acceptance range. Results were flagged with an M1. M1 indicates that the matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MS/MSD 39795 for EPA 7471 total mercury had % recoveries and RPDs that were within acceptance range. These results were good.

MS/MSD 40626 for EPA 7471 had very high % recoveries. The RPD was also outside control limits and the results were flagged with an M1. The batch was accepted based on the LCS results.

MS/MSD 41341 for EPA 7471 total mercury had % recoveries of -13,900 and 12,100 which are both out of acceptance range. The RPD was 12. Results flagged with M1 indicating the batch was accepted based on LCS results.

Yes No

Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

See above notes for question iv.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

M6 and E data flags. See above notes.

Data quality or usability affected? (Use comment box to explain)

Comments:

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No

Comments:

No organic analyses performed for this set of samples. Only metals.

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No

Comments:

N/A

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

N/A

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

N/A

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

Metals analyses do not required a volatile analysis trip blank.

Yes No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

Yes No Comments:

N/A

iii. All results less than PQL?

Yes No Comments:

N/A

iv. If above PQL, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No Comments:

Four field duplicate samples were collected for all of the metals analyses.

ii. Submitted blind to lab?

Yes No Comments:

No – TPECI personnel in the field labeled the duplicates as duplicates.

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No Comments:

See all calculations done by TPECI personnel for every primary and duplicate pair in the attached notes. Some RPDs were outside the 50% acceptance range however, this is indicative of collecting grab samples in non-homogenous soils that have clearly visible stratification due to human impacts.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No – data quality is fine.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

Yes No Not Applicable

i. All results less than PQL?

Yes No Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No Comments:

N/A

APPENDIX C
PHOTOGRAPHIC LOG



1. Contaminated soil stockpile that was recovered with heavier liner.



2. Contaminated soil stockpiles located in the upper camp area.



3. Polyethylene drums containing lead-acid batteries for transport to a disposal facility.



4. Drums staged at Deering landing strip.



5. View facing north looking at the Gold House sampling locations. Mine camp road to the right.



6. View facing north west looking at former Gold House location and sampling points marked with pink flagging.



7. View facing west northwest of Gold House sampling area. Note pink flagging marking sample points.



8. View closer up of the area that was behind the former Gold House where tailings were previously disposed out the back of the building. Note the area devoid of plant life that is high in mercury and lead contamination indicated by the yellow arrow in the photo above.



9. View looking north along road in mine camp. Yellow drum is containment for the old drum of lubricant found buried in the excavation immediately to the right of the drum in this photo. Beyond the drum is the main contaminated soil stockpile generated from the Power Generating Shed excavation across the road. Also note the pink flagging on the left side of the road where the former Gold House sampling was completed.



10. Machinist Shop.



11. Proposed land farming sampling area located in upper portion of former mine camp. Note pink flagging that denotes the limits of each sampling grid cell. The camp road comes uphill on the right side of this photo and the sampling area was on the left in the vegetation.



12. View of proposed land farming area looking toward the south. Opposite view from the above photo.



15. Inmachuk River looking at the upstream sampling location. View toward the south.



16. Photo copied from SLR 2005 Phase I ESA. SLR identified this piece of equipment as a roller mill. This is a gold recovery trommel and is used like a screen and as the main drum portion of the trommel rotates it mechanically separates coarse material from fine grained material. Water is introduced in the upper portion of the trommel which catches the fines to transport them along the sluice for gold recovery. There is no crushing or grinding involved with the use of gold recovery trommels.



17. This is also a gold recovery trommel. SLR identified this trommel as a “crusher or ball mill” in Appendix D of their 2005 Phase I ESA. This trommel works in the same manner as the trommel in photograph 17 above. For more information on gold trommels see the technical specifications presented in Appendix D of this report and the following link to the Youtube video that demonstrates how a gold trommel is used in placer mining: <http://www.youtube.com/watch?v=IfKUBIhfr0s>

APPENDIX D
REFERENCES AND REFERENCE MATERIALS

REFERENCES

- ADEC, 2010. *DRAFT Field Sampling Guidance*. Alaska Department of Environmental Conservation. Juneau, Alaska. 60 pages. May, 2010.
- ADEC, 2009. Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites. Juneau, Alaska. 14 pages. September, 2009.
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- ADEC, 2005. Electronic communications between Ms. Sharon Richmond and Ms. Lisa Maserjian of the Contaminated Sites department regarding the Utica Mine Phase I ESA conducted by SLR in 2005. September, 2005.
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MINING / MINERAL
PROCESSING EQUIPMENT

EARTH MOVING, DIGGING, &
CONSTRUCTION
EQUIPMENT

INSTRUMENTS, TOOLS, &
ACCESSORIES

TECHNICAL AND
CONSULTING SERVICES

TROMMELS, REVOLVING SCREENS (WET & DRY)



DOVE™ Trommel screens, Drum Screens, or Revolving Screens provide a simple, efficient and economical solution to upgrade a wide range of material and optimize the subsequent process steps of recovery. This method of screening helps to reduce operating and investment cost and to increase product quality, while allowing rapid and large volume processing.

With over 40 years of manufacturing experience, **DOVE™** offers a largest range of **Trommel screens** worldwide, with over 90 standard models and capacity range of 6 tons/hours to over 500 tons/hour of solids, per single Trommel screen.

APPLICATION

DOVE™ Trommel screens are configured for a variety of material screening, classification and grading, in different industries:

- MINING & MINERALS PROCESSING
- INDUSTRIAL APPLICATIONS
- MUNICIPAL APPLICATIONS

PRODUCT RANGE

DOVE™ manufactures and supplies various types of trommel screens, including:

- Classifiers drum trommel screens (wet type)
- Dry Classifier drum trommel screens.
- Scrubber trommels
- Cone Trommels.
- Screw Trommels.

FEATURES

DOVE™ Trommels are designed for high performance screening, classification and grading application. With over 40 years in manufacturing experience,

DOVE™ Trommel screens are built for highest performance, highest production rates, lowest operating costs and long and maintenance free life.

DOVE™ Trommel Screens, provide an efficient material flow grading into fraction of predetermined size ranges, which provides a reliable basis for optimizing the downstream plant components. The efficiency of DOVE Trommel screens, results in maximizing the product quality, by efficient particle size grading.

- over 90 standard models to choose.
- capacity range of 7.5-1500 m³/hour of slurry, or 6-600 tons/hour of solids, per single trommel.
- lowest total ownership cost, per trommel screen highest quality material fabrication.
- one-year manufacturer warranty, on all models
- configured for economical & efficient classification, Screening and grading
- largest processing capacity per single trommel, in the industry.
- unique screen design, result in higher capacities, up to 4 times longer screen life and no material clogging.
- heavy duty feed hopper and extension.
- chain drive mechanism.
- Powered by diesel engines or Electric motor variable speed drive mechanism. trommel slope adjustment mechanism.
- heavy duty jacking and adjustable stands, assist in rapid set up & assembly time.
- high pressure spray bar network around the hopper and through out the length of the trommel.
- heavy duty roller supports (steel or rubber) wheels.
- portable mobile or stationary configuration





CONTACT FOR BROCHURE & QUOTATION sales@dovemining.com

TECHNICAL SPECIFICATION

NO	MODEL	TYPE	PROCESSING CAPACITY		OVERALL DIMENSION (L x W x H)(CM)	POWER		
			SLURRY (M ³ /HR)	SOLIDS (TONS/HR)		DIESEL	ELECTRIC	GASOLINE
1	TMC-60	DRUM	7.5-15	3-6	245 X 78 X 150	5.5	300	5.5
2	TMC-100	DRUM	15-30	6-12	320 X 108 X 150	8	5	8
3	TMC-120	DRUM	30-75	15-25	375 X 120 X 150	9	7.5	8.2
4	TMC-150	DRUM	50-90	20-35	470 X 140 X 200	9	7.5	8.2
5	TMC-250	DRUM	70-125	35-50	580 X 160 X 200	10.5	10	11.7
6	TMC-C200	CONE	70-150	35-50	300 X 150 X 130	9	5.5	8.2
7	TMC-C300	CONE	100-175	50-70	400 X 150 X 130	10.5	8	11.7

8	TMC-C320	CONE	120-200	60-80	400 X 150 X 150	12	10	11.5
9	TMC-C350	CONE	140-225	70-90	475 X 196 X 193	12	10	12
10	TMC-300	DRUM	120-200	80-100	685 X 185 X 320	80	30	-
11	TMC-450	SCRUBBER	240-450	100-150	785 X 185 X 342	80	60	-
12	TMS-450	DRUM	240-450	120-180	785 X 185 X 342	80	40	-
13	TMC-550	DRUM	320-550	160-220	912 X 185 X 342	80	40	-
14	TMS550	SCRUBBER	240-400	120-160	912 X 185 X 342	80	40	-
15	TMC-585	DRUM	360-600	180-240	912 X 220 X 342	100	30	-
16	TMC-650	DRUM	360-600	180-240	1050 X 185 X 342	120	40	-
17	TMS-650	SCRUBBER	300-500	150-200	1050 X 220 X 342	120	40	-
18	TMS-685	SCRUBBER	360-550	180-220	1050 X 185 X 342	120	50	-
19	TMC-685	DRUM	400-600	200-260	1050 X 220 X 342	120	40	-
20	TMC-850	DRUM	600-950	300-380	1380 X 185 X 342	130	50	-
21	TMS-850	SCRUBBER	560-900	280-360	1380 X 185 X 342	145	50	-
22	TMC-885	DRUM	640-1000	320-400	1380 X 185 X 342	130	60	-
23	TMS-885	SCRUBBER	600-950	300-380	1380 X 220 X 365	150	60	-
24	TMC-950	DRUM	720-1100	360-440	1895 X 185 X 342	160	60	-
25	TMS-950	SCRUBBER	680-1050	340-420	1895 X 185 X 342	160	60	-
26	TMC-985	DRUM	780-1200	390-480	1380 X 220 X 365	195	75	-
27	TMS-985	SCRUBBER	720-100	360-440	1380 X 220 X 365	195	75	-
28	TMC-1050	DRUM	880-1300	440-520	1760 X 185 X 342	195	60	-
29	TMS-1050	SCRUBBER	760-1150	380-460	1760 X 185 X 342	195	75	-
30	TMC-1085	DRUM	960-1375	480-550	1760 X 220 X 365	195	60	-
31	TMS-1085	SCRUBBER	800-1200	400-460	1760 X 220 X 365	195	75	-
32	TMC-1150	DRUM	1000-1450	500-580	1870 X 185 X 342	220	75	-
33	TMS-1150	SCRUBBER	880-1200	440-480	1870 X 185 X 342	220	80	-

- Ore through put capacity of the Trommel may fluctuate in accordance to the mechanism & speed of feeding, type of ore and the screen mesh size.
- Specifications may be changed without notice.

Mercury Contamination from Historic Gold Mining in California

By Charles N. Alpers and Michael P. Humerlach

Mercury contamination from historic gold mines represents a potential risk to human health and the environment. This fact sheet provides background information on the use of mercury in historic gold mining and processing operations in California, and describes a new USGS project that addresses the potential risks associated with mercury from these sources, with emphasis on historic hydraulic mining areas.

Miners used mercury (quicksilver) to recover gold throughout the western United States at both placer (alluvial) and hardrock (lode) mines. The vast majority of mercury lost to the environment in California was from placer-gold mines, which used hydraulic, drift, and dredging methods. At hydraulic mines, placer ores were broken down with monitors (or water cannons, fig. 1) and the resulting slurry was directed through sluices and drainage tunnels, where gold particles combined with liquid mercury to form gold-mercury amalgam. Loss of mercury in this process was 10 to 30 percent per season (Bowie, 1905), resulting in highly contaminated sediments at mine sites (fig. 2). Elevated mercury concentrations in present-day mine waters and sediments indicate that hundreds to thousands of pounds of mercury remain at each of the many sites affected by hydraulic mining. High mercury levels in fish, amphibians, and invertebrates downstream of the hydrau-



Figure 2. Gold pan with more than 30 grams of mercury from 1 kilogram of mercury-contaminated sediments.



Figure 1. Monitors (water cannons) were used to break down the gold-bearing gravel deposits with tremendous volumes of water under high pressure. Some mines operated several monitors in the same pit. Malakoff Diggings, circa 1860.

lic mines are a consequence of historic mercury use. On the basis of USGS studies and other recent work, a better understanding is emerging of mercury distribution, ongoing transport, transformation processes, and the extent of biological uptake in areas affected by historic gold mining. This information will be useful to agencies responsible for prudent land and resource management and for protecting public health.

Origins of Hydraulic Mining

Vast gravel deposits from ancestral rivers within the Sierra Nevada gold belt contained large quantities of placer gold, which provided the basis for the first large-scale mining in California. Around 1852, hydraulic mining technology evolved, using monitors (fig. 1) to deliver large volumes of water that stripped the ground of soil, sand, and gravel above bedrock. The water and sediment formed slurries that were directed through linear sluices (fig. 3) where the gold was recovered. An extensive water transfer system of ditches, canals, and vertical pipes provided the

sustained water pressure necessary for hydraulic mining. As mining progressed into deeper gravels, tunnels were constructed to facilitate drainage and to remove debris from the bottom of hydraulic mine pits. The tunnels provided a protected environment for sluices and a way to discharge processed sediments (placer tailings) to adjacent waterways. Hydraulic mines operated on



Figure 3. Gravel deposits were washed into sluices (from center to lower part of figure) where gold was recovered.

a large scale from the 1850s to the 1880s in California's northern Sierra Nevada region, where more than 1.5 billion cubic yards of gold-bearing placer gravels were worked. In 1884, the Sawyer Decision prohibited discharge of mining debris in the Sierra Nevada region, but not in the Klamath-Trinity Mountains (fig. 4), where hydraulic mining continued until the 1950s. Underground mining of placer deposits (drift mining) and of hardrock gold-quartz vein deposits produced most of California's gold from the mid-1880s to the early 1900s. Dredging of gold-bearing sediments in the Sierra Nevada foothills has been an important source of gold since the early 1900s. Mercury also was used extensively until the early 1960s in the dredging of flood plain deposits, where over 3.6 billion cubic yards were mined. Mercury is recovered today as a by-product from large- and small-scale dredging operations.

Mercury Mining

Most of the mercury used in gold recovery in California was obtained from the Coast Ranges mercury belt on the west side of California's Central Valley (fig. 4). Historic mercury production peaked in the late 1870s (fig. 5). Total mercury production in California between 1850 and 1981 was more than 220,000,000 lb (pounds) (Churchill, 1999). Although most of this mercury was exported around the Pacific Rim or transported to Nevada and other western states, a significant portion (about 12 percent, or 26,000,000 lb) was used for gold recovery in California, mostly in the Sierra Nevada and Klamath-Trinity Mountains.

Mercury Use in Hydraulic Mining

In a typical sluice, hundreds of pounds of liquid mercury (several 76-lb flasks) were added to riffles and troughs to enhance gold recovery. The density of mercury is between that of gold and the gravel slurry, so gold and gold-mercury amalgam would sink, while the sand and gravel would pass over the mercury and through the sluice. Because such large volumes of turbulent water flowed through the sluice, many of the finer gold and mercury particles were washed through and out of the sluice before they could settle in the mercury-laden riffles. A modification known as an undercurrent (fig. 6) was

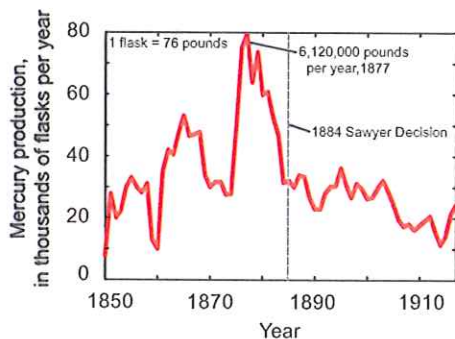


Figure 5. Mercury production from mines in the Coast Ranges of California, 1850-1917 (Bradley, 1918).

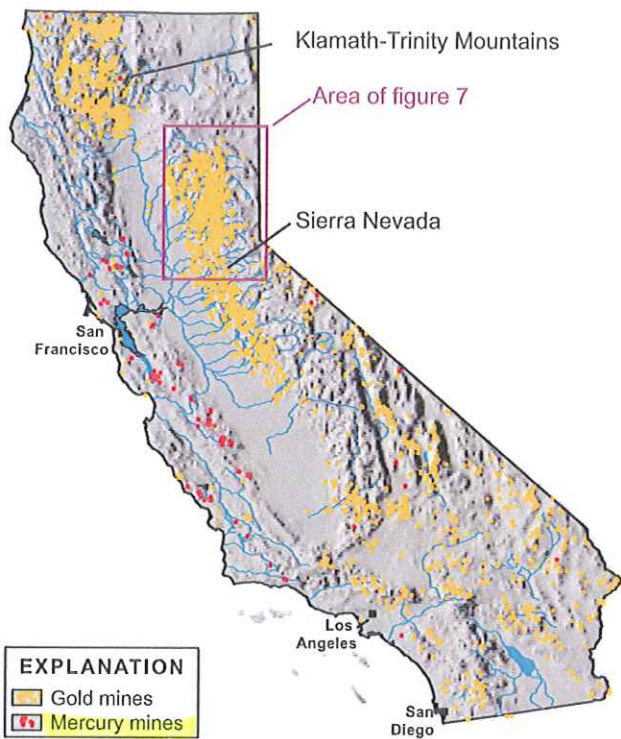


Figure 4. Locations of past-producing gold and mercury mines in California. Source: MAS/MILS (Minerals Availability System/Mineral Information Location System) database compiled by the former U.S. Bureau of Mines, now archived by the USGS.

developed to address this loss. Fine-grained sediment was allowed to drop onto the undercurrent, where gold and amalgam were caught. The entire surface of the undercurrent (as much as 5,000 to 10,000 square feet) typically was covered by copper plates coated with mercury.

Gravel and cobbles that entered the sluices caused the mercury to flour, or break into tiny particles. Flouring was aggravated by agitation, exposure of mercury to air, and other chemical reactions. Eventually, the entire bottom of the sluice became coated with mercury. Some mercury escaped from the sluice through leakage into underlying soils and bedrock, and some was transported downstream with the placer tailings. Some remobilized placer sediments remain close to their source in ravines that drained the hydraulic mines. Minute particles of

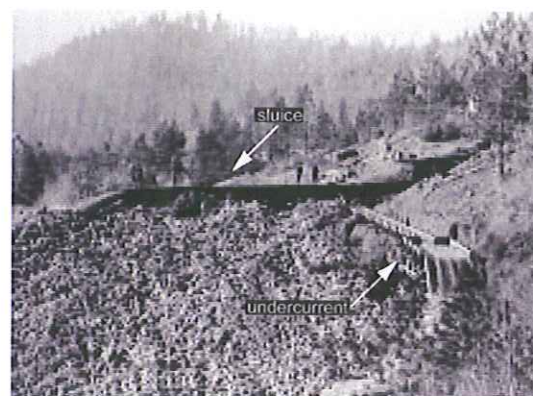


Figure 6. Undercurrent in use, circa 1860, Siskyou County, California.

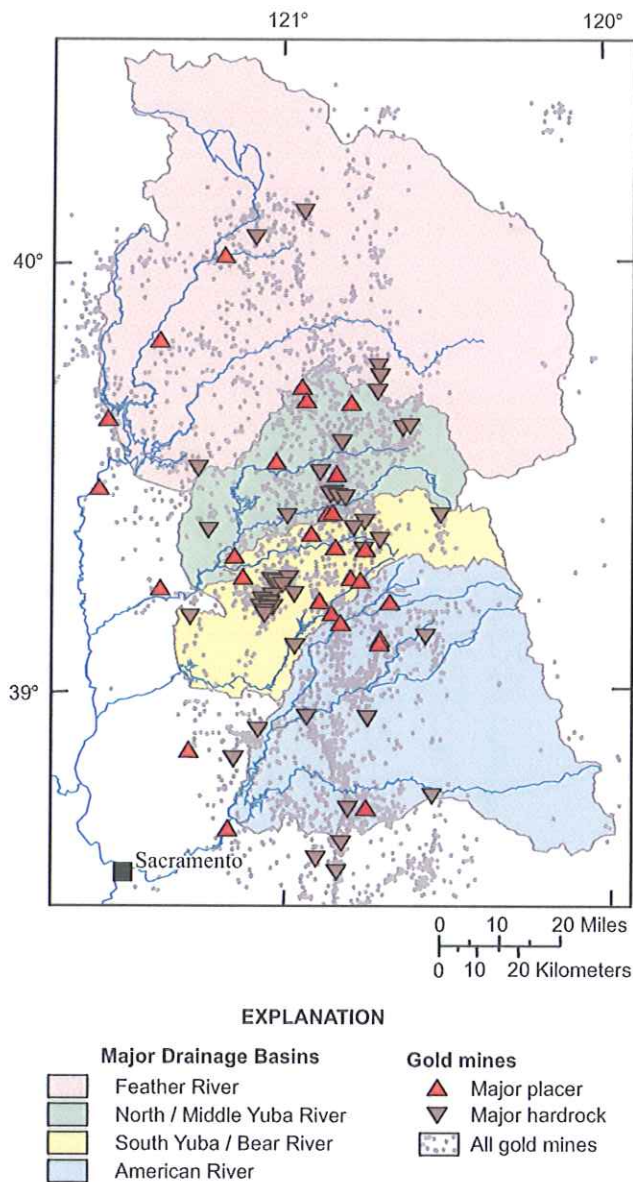


Figure 7. Watersheds in the northwestern Sierra Nevada of California showing past-producing gold mines (as in figure 4) and major placer and hardrock gold mines. Source: USGS KNOWNDEP database (Long and others, 1998).

quicksilver were found floating on surface water as far as 20 miles downstream of mining operations (Bowie, 1905).

Averill (1946) estimated that, under the best operating conditions, 10 percent of the mercury used was lost and, under average conditions, the annual loss of mercury was up to 30 percent. Mercury use varied from 0.1 to 0.36 pounds per square foot of sluice. We estimate that a typical sluice had an area of 2,400 square feet and used up to 800 lb of mercury during initial start-up, after which several additional 76-lb flasks were added weekly to monthly throughout its operating season (generally 6 to 8 months, depending on water availability). Assuming a 10–30 percent loss, the annual loss of mercury from a typical sluice was likely several hundred

pounds during the operating season. From the 1860s through the early 1900s, hundreds of hydraulic placer-gold mines operated in the Sierra Nevada. The total amount of mercury lost to the environment from these operations may have been 3–8 million lb or more, from estimates by Churchill (1999) that about 26,000,000 lb of mercury were used in California. Historic records indicate that about 3 million lb of mercury were used at hardrock mines in stamp mills, where ores were crushed. Mercury was also used extensively at drift mines and in dredging operations. The present distribution and fate of the mercury used in historic gold mining operations remains largely unknown, and is the focus of ongoing studies.

The Bear–Yuba Project

The northwestern Sierra Nevada region has been mined extensively for both its hardrock-gold and placer-gold deposits (fig. 7). The American, Bear, Yuba, and Feather River watersheds each have been affected by hydraulic mining. In the northwestern Sierra Nevada, the highest average levels of mercury bioaccumulation occur in the Bear River and South Yuba River watersheds (Slotton and others, 1997). USGS scientists (Hunerlach and others, 1999) have demonstrated a positive correlation of mercury bioaccumulation with intensity of hydraulic gravel mined in the Sierra Nevada (fig. 8). The Bear River and South Yuba River watersheds have been selected by the USGS and federal land management agencies (the Bureau of Land Management and the Forest Service) as well as state and local agencies (see last page) for detailed studies of mercury distribution in relation to historic mine sites. In April 1999, the study team began sampling water, sediment, and biota at mine sites identified as containing mercury “hot spots,” where remediation might reduce risks to human health and the environment. The USGS is also analyzing mercury in sport fish from several lakes and streams in the Bear River and South Yuba River watersheds to allow assessment of potential risks to human health from fish consumption.

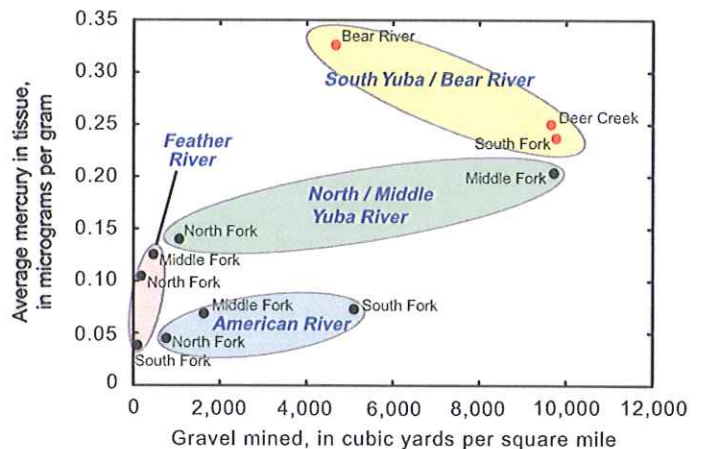


Figure 8. Relationship between intensity of hydraulic mining in Sierra Nevada watersheds and average mercury concentration in tissues of aquatic organisms. Modified from Hunerlach and others (1999). Mercury data from Slotton and others (1997).

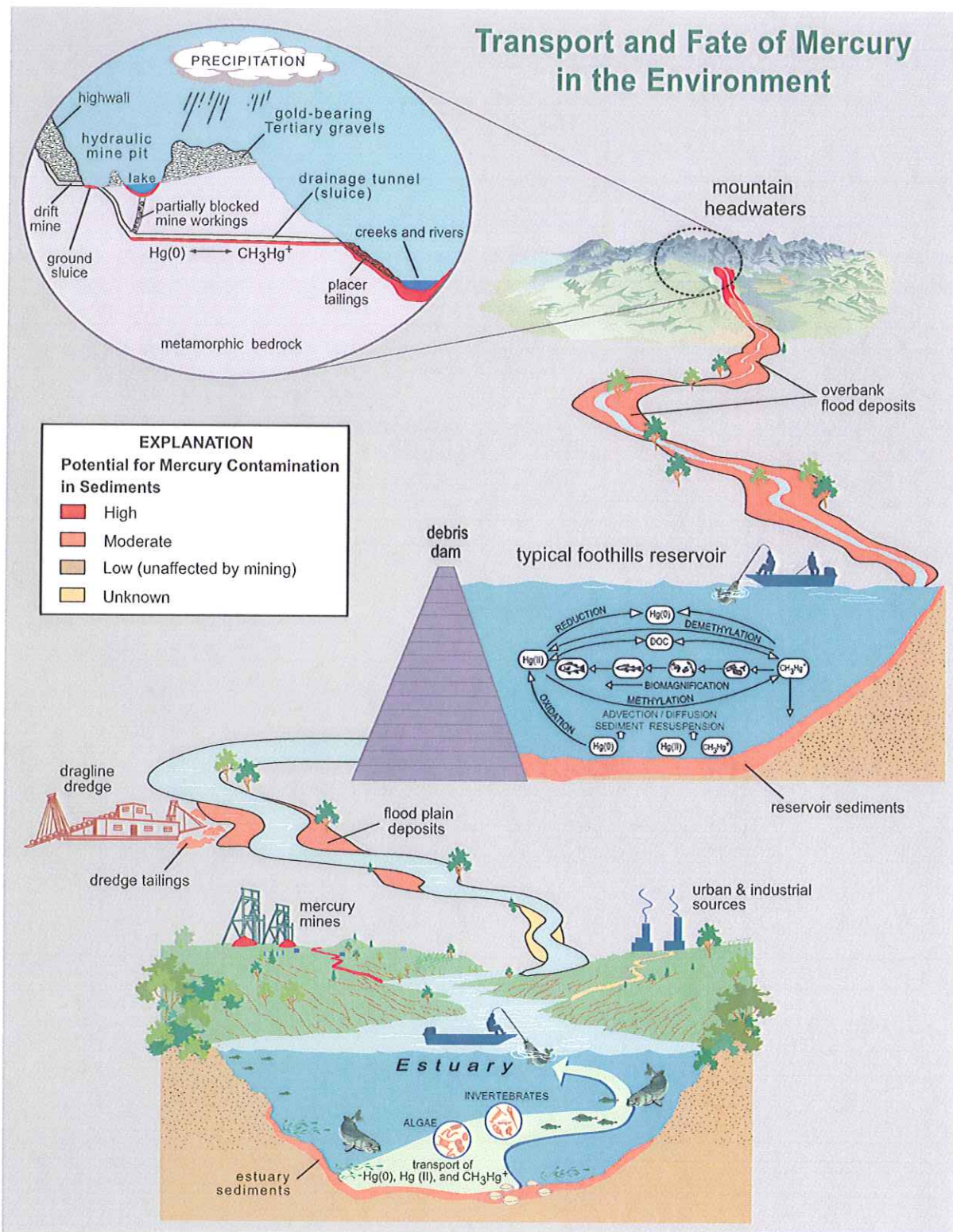


Figure 9. Schematic diagram showing transport and fate of mercury and potentially contaminated sediments from the mountain headwaters (hydraulic and drift mine environment) through rivers, reservoirs, and the flood plain, and into an estuary. A simplified mercury cycle is shown, including overall methylation reactions and bioaccumulation; the actual cycling is much more complex. $Hg(0)$, elemental mercury; $Hg(II)$, ionic mercury (mercuric ion); CH_3Hg^+ , methylmercury; DOC, dissolved organic carbon.

MERCURY CONTAMINATION: KEY ISSUES

Risks to Human Health

- Consumption of contaminated fish
- Improper handling of contaminated sediments
- Inhalation of mercury vapors
- Low risk in municipal drinking water
- Some mine waters unsafe for consumption

Challenges for Land Management

- Public access to contaminated areas
- Physically hazardous sites
- Environmental consequences of resource development
- Remediation of affected sites

Environmental Fate of Mercury

- “Hot spots” at mine sites
- Contaminated sediments
- Transport to downstream areas
- Bioaccumulation and biomagnification in food chain

Mercury Methylation and Biomagnification

Mercury occurs in several different geochemical forms, including elemental mercury [Hg(0)], ionic (or oxidized) mercury [Hg(II)], and a suite of organic forms, the most important of which is methylmercury (CH_3Hg^+). Methylmercury is the form most readily incorporated into biological tissues and most toxic to humans. The transformation from elemental mercury to methylmercury is a complex biogeochemical process that requires at least two steps, as shown in figure 9: (1) Oxidation of Hg(0) to Hg(II), followed by (2) Transformation from Hg(II) to CH_3Hg^+ ; step “2” is referred to as **methylation**. Mercury methylation is controlled by sulfate-reducing bacteria and other microbes that tend to thrive in conditions of low dissolved oxygen, such as the sediment-water interface or in algal mats. Numerous environmental factors influence the rates of mercury methylation and the reverse reaction known as demethylation. These factors include temperature, dissolved organic carbon, salinity, acidity (pH), oxidation-reduction conditions, and the form and concentration of sulfur in water and sediments.

The concentration of CH_3Hg^+ generally increases by a factor of ten or less with each step up the food chain, a process known as **biomagnification**. Therefore, even though the concentrations of Hg(0), Hg(II), and CH_3Hg^+ in water may be very low and deemed safe for human consumption as drinking water, CH_3Hg^+ concentration levels in fish, especially predatory species such as bass and catfish, may reach levels that are considered potentially harmful to humans and fish-eating wildlife, such as bald eagles.

Fish Consumption Advisories for Mercury

Methylmercury (CH_3Hg^+) is a potent neurotoxin that impairs the nervous system. Fetuses and young children are more sensitive to methylmercury exposure than adults. Methylmercury can cause many types of problems in children, including brain and nervous system damage, retardation of development, mental impairment, seizures, abnormal muscle tone, and problems in coordination. Therefore, the consumption guidelines in areas where CH_3Hg^+ is known to occur in fish at potentially harmful levels tend to be more restrictive for children as well as for pregnant women, nursing mothers, and women of childbearing age.

In the United States, as of 1998, there were a total of 2,506 fish and wildlife consumption advisories for all substances, of which 1,931 (more than 75 percent) were for mercury. Forty states have issued advisories for mercury, and ten states have statewide advisories for mercury in all freshwater lakes and (or) rivers.

In California, as of 1999, there were fish consumption advisories for mercury in 13 waterbodies, including the San Francisco Bay and Delta Region and several areas in the **Coast Ranges affected by mercury mining** (fig. 10; compare with fig. 4). Data on CH_3Hg^+ levels in fish are presently insufficient for public agencies to determine whether advisories are warranted for lakes and rivers in areas affected by historic gold mining, such as the Sierra Nevada foothills.

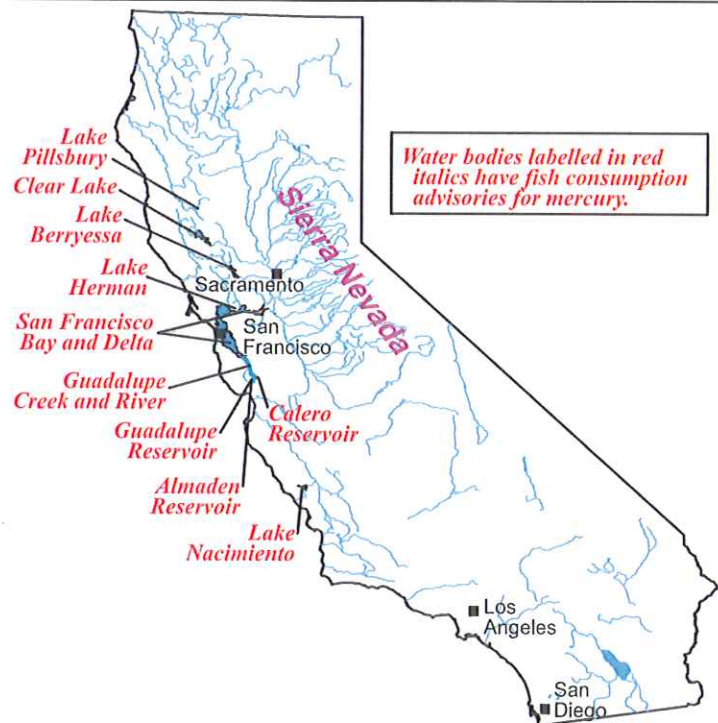
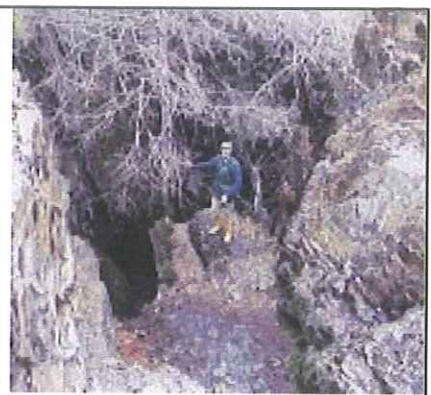
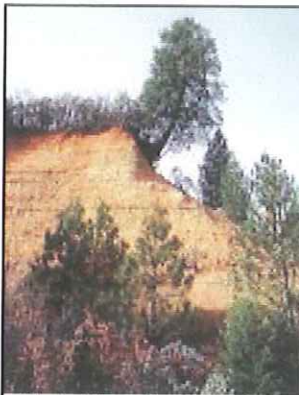


Figure 10. Locations of health advisories for mercury in sport fish consumption in California. Source: California Office of Environmental Health Hazard Assessment, 1999. Lake Pillsbury has interim advisory by Lake County; state advisory pending, as of May 2000.



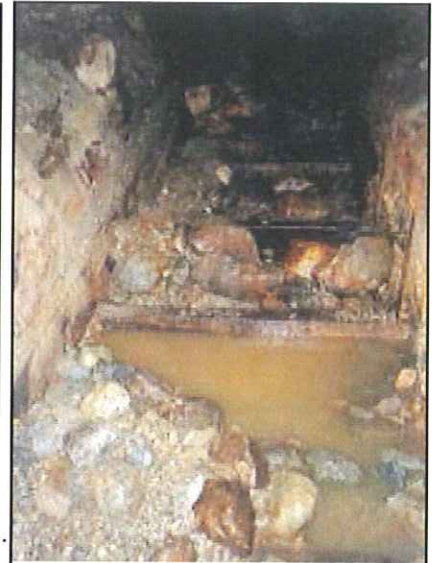
Lake in hydraulic mine pit caused by blocked drainage tunnel. Acidic water in this pit lake (pH 3.5) caused by oxidation of sulfide minerals in gold-bearing gravel deposits.



Physical hazards at hydraulic mine sites include highwalls (left photo) and open shafts (right photo). Highwalls are steep unstable slopes subject to sudden collapse. Shafts vary from tens to hundreds of feet in depth and connect with horizontal mine workings including drift mines and drainage tunnels.

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Tunnel sluice with mercury-contaminated sediments.

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Sacramento, CA 95819-6129

<http://ca.water.usgs.gov/mercury/>
<http://mine-drainage.usgs.gov/mine/>
<http://amli.usgs.gov/amli/>
<http://www.usgs.gov/>

Cooperating Agencies

U.S. Forest Service



Bureau of Land Management



California Department of Conservation



U.S. Environmental Protection Agency



California State Water Resources Control Board



California Department of Parks and Recreation



Nevada County Resource Conservation District



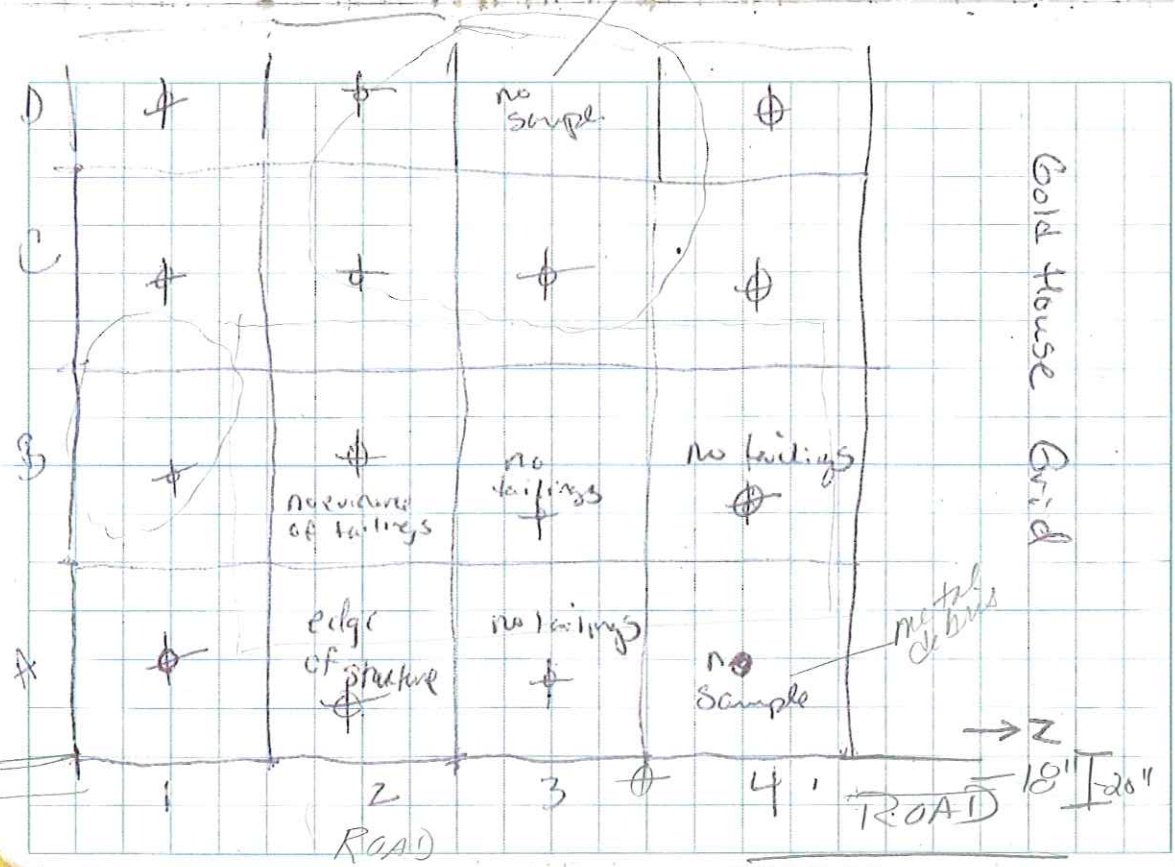
APPENDIX E
FIELD NOTES

Location _____

Project / Client _____

Date _____

debris



Location _____

Project / Client _____

Date 08-31-10

Uttara Nare

1/11/10

114 Location Utica Mine Date 8-31-10
 Project / Client NADA 2/16

Sample	Time	Sample	Time
1A	10:07	2D surface -	10:38
Surface		2D 0-1 -	10:36
1A		2D 1-2 -	10:40
0-1	10:13	2E surface -	10:41
1A		2C 0-1 -	10:43
1-2	10:17	2E 1-2 -	10:45
1B		2B 0-1	10:42
0-1	10:19	no tails	
1B			
Surface	10:19	2A surface	10:49
1B		2A 0-1	10:50
1-2	10:21	2A 1-2	10:53
1C		3C surface -	10:58
Surface	10:23	3C 0-1 -	10:01
1C		3C 1-2 -	11:02
0-1	10:25	3B 0-1	11:08
1C		3A 0-1	11:10
1-2	10:27	4A no sample	
1D surface -	10:31	4B 0-1	11:15
1D 0-1 -	10:29		
1D 1-2 -	10:32		

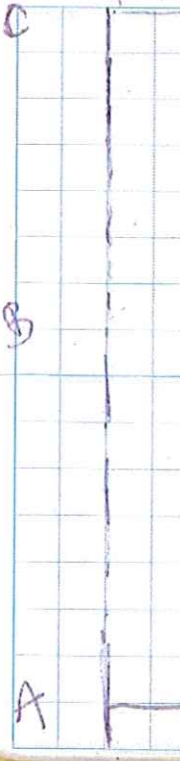
115 Location Utica Mine Date 8-31-10
 Project / Client NADA 3/16
Goldhouse Notes

- where no tailings present, samples were collected from 0-1 bgs
- keeping residence between 15-18" carbon and gravel
- gravel > 1" diameter rejected from sample

Gold House Grid duplicates

- Duplicate 1 - 1C surface
- Duplicate 2 - 2C surface
- Duplicate 3 - 3A surface 3A-D
- Duplicate 4 - 3B surface 3B-D

locations were 1' below run, and samples will be analyzed for Tox and metals and TCEP



Location Ute Mine Date 8-31-10
 Project / Client NAVA 4/10

Sample Time

4C surface 11:18
 4C 0-1 11:19
 4C 1-2 11:21

4D surface 11:23

4D 0-1 11:25

~~4A 0-2~~ all on surface - 6' 33 sec

Gold Mine South - down gradient of leaching pile, something that means all needles to run here

11:44

Gold Mine West - down gradient west to road east of

11:47 Stacks 3

Gold mine west - up gradient between 2/3

Gold mine north - outside of gravel

11:52 even gradient in a small depression

Location Ute Mine Date 8-31-10
 Project / Client NAVA 5/10

Proposed Landfill Location

Landfill Total Metals

LFN/A 0-2" 12:28

LFN 2B 12:32

LFN 3A 12:33

LFN 4B 12:34

LFN 5A 12:35

LFN 6B 12:37

LFN 7A 12:45

LFN 8B 12:49

Total Metals No additional

LFN 1B 12:55 duplicate

LFN 2A 12:57 at this

LFN 3B 1:01 sample

LFN 4A 1:02 grid

LFN 5B 1:03 area -

LFN 6A 1:04

LFN 7B 1:06

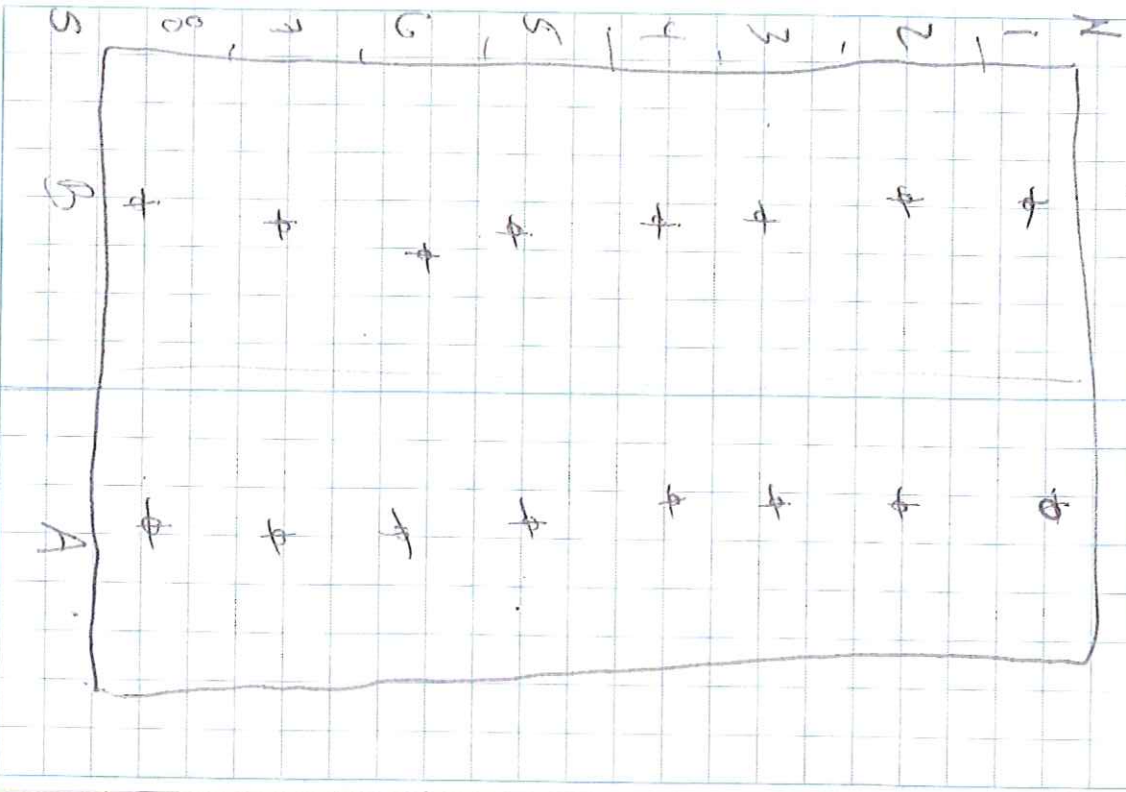
LFN 8A 1:07

Location Utica Mine Date 8-31-10
Project / Client NANDA 2/10

- Returned at 2 inches in handpani
- Solo the underlying gravel is broken
- then we set pocket traps
- ~~Set traps from every other grid~~
- ~~Set traps see attached figure~~
- Deviation - no using the Sample holders
- & method
- Sampled from each grid square

Location Utica Mine Date 8-31-10
Project / Client NANDA 7/10

Proposed layout from



Location Utica Mine Date 8-31-10
 Project / Client NANA SAE

Alternate lined from location

A14 SE 1:12
 A14 SW 1:13
 A14 NE 1:14
 A14 NW 1:16

• Located adjacent to manafill

Location Utica Mine Date 8-31-10
 Project / Client NANA 9/11e

Machinist Shop

Machine Shop - Outside

MS - Outside east 0-1 - BRD
 @ drum rack 2:14 pm

MS - Outside north 0-1 - BRD
 near diesel drum 2:04

MS - Outside west 0-1 - BRD
 staining marks of entrance 2:22

Bay (welding shop)

NS ~~west~~ surface 3:30

NS east 0-1 3:32

NS east 1-2 3:33

NS west 5m high 3:37

NS west 0-1 3:50

NS west 1-2 3:57

NA east surface 4:01

NZ east 0-1 4:02

NZ east 1-2 4:03

Location Utica Mine Date 8-31-10Project / Client NANA 10/tteMachinist Shop

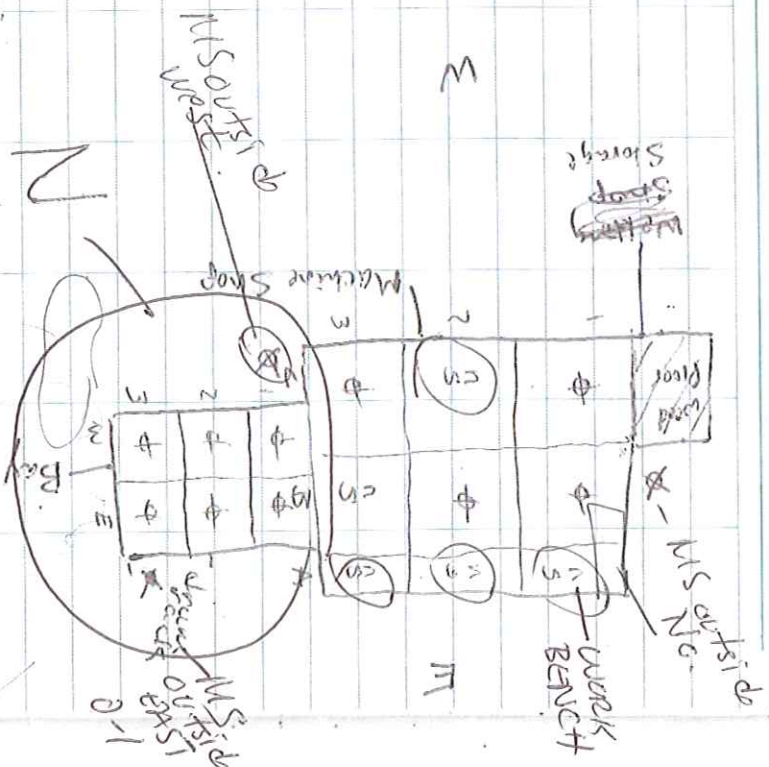
N2 west surface	4:05
N2 west 0-1	4:07
N2 west 1-2	4:09
N1 west surface	4:11
N1 west 0-1	4:13
N1 west 1-2	4:15
N1 east surface	5:08
N1 east 0-1	5:12
N1 east 1-2	5:12
MSN1C MSN1C surface	4:19
MSN1Z 0-1	4:28
MSN1E 1-2	4:32
MSN1B surface	4:34
MSN3C surface	4:38
MSN3C 0-1	4:39
MSN3C 1-2	4:40
MSN2B surface	Dup 5 5:00
MSN2B 0-1	5:03
MSN2B 1-2	5:05

dup 6 33:00
 dup 7 NANA
 dup 7 SUPPLY

Location Utica Mine Date 8-31-10Project / Client NANA 11/tteMachinist Shop

- Very rocky surface - angular cobbles - large enough to step / impede the auger
- No sample at A location due to equipment and furnishings
- No sample collected at MSN2C because the deposition of the previous sampling there is clearly visible
- No sample at MSN3B because it was already sampled - previous sampling site still visible
- Machinist Shop / Bay / outside well. We analyzed for:
 - RRO

Location Utica Mine Date 8-31-10
Project / Client DAWA 2 12/10



• Machine shop has deteriorated since June 2010, unstable

Mechanist Shop

Location Utica Mine Date 8-31-10
Project / Client DAWA 2 13/16

Inwashuk River
Water Sampling

• Upstream 6:43
• Sand when near small
• you'll find up from where
the settling pond channel
was located

• downstream 7:08
• around vent river bend
about 1/2 between main
camp and single cabin

Location Utica Mine Date 8-31-10
 Project / Client UANA H/10

Immachinac River
 upstream and downstream
 samples will be analyzed
 for:

CrO/BTEX
 DRO
 Total metals

Location Utica Mine Date ~~8-31-10~~ 9-1-10
 Project / Client UANA 1571
 Batteries / Airbreze / Lead waste oil

• steel overpacks of the largest
 placed batteries inside in poly 30 gallon
 drum weight

Drums

1 - 75 lbs - 100 lbs	2 can - 1 big
2 - 75 - 100 lbs	2 can - 1 walking big
3 - 50 - 75 lbs	1 walking big - 1 big
4 - 100 - 125	2 big - 2 can
5 - 50 - 75 lb	3 big
6 - 100 - 125 lbs	7 bricks
7 - 125 lbs	5 big plastic
8 - ~50 lbs	2 batteries / parts
9 - ~125 lbs	4 batteries big
10 - ~75 lbs	part of batteries

* need two
 more labels
 - 2 more labels
 for poly overpacks

Location Utica, Indiana Date 9-1-10
Project / Client NAWA 10/14

Drums

- Overpacks of batteries (10) , anti freeze, and lead - contaminated waste oil - stored at airport for off site transport

Location _____ Date _____
Project / Client _____