REMOVAL ASSESSMENT REPORT

FOR

EL PASO COUNTY METALS SITE
EL PASO, EL PASO COUNTY, TEXAS

Prepared for

U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, Texas 75202

U.S. Army Corps of Engineers
Fort Crook Area, Rapid Response Resident Office

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Submitted by

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EXECUTIVE SUMMARY

The primary objective for Roy F. Weston (WESTON®) was to coordinate with federal, state, and local officials while performing a removal assessment of potential on-site contaminants and contaminated materials at various schools and parks in El Paso, El Paso County, Texas. WESTON personnel were responsible for conducting and documenting on-site activities during the removal assessment. Samples collected were used to ascertain contaminant concentrations for comparison to the Environmental Protection Agency (EPA) Region 6 action levels for lead and arsenic. The primary concerns associated with the El Paso County Metals Survey site are the presence of lead and arsenic, above the EPA benchmarks of 500 parts per million (ppm) lead and 20 ppm arsenic. The goal of the sampling and analysis for level and extent of contamination, which was conducted at various locations across the site was to confirm the presence of these metals at levels above the established benchmarks. Removal assessment activities took place from 28 July 2001 to 5 August 2001. During this time, the following assessment activities were conducted:

- A sample program was designed using the EPA FIELDS module.
- Approximately 1,200 soil samples were collected.
- Lead and arsenic screening on 580 of the samples was performed by AES Laboratory Services.
- Ten percent of samples were sent to a U.S. Army Corp of Engineers (USACE)-approved laboratory (Xenco) for quality assurance/quality control (QA/QC).
- Sample points were located and identified using a Differential Global Positioning System (DGPS).
- Base-maps of the sites were developed in a GIS (Geographic Information System) format using rectified custom aerial imagery.

Analytical results reported the presence of lead and arsenic within the majority of the sites' samples. In a few isolated areas, samples showed elevated levels above the EPA action limits for arsenic and lead. Based on the action levels provided by the EPA of 20 ppm for arsenic and 500 ppm for lead WESTON estimated the area above action levels to be 480,000 square feet. This estimate is based on areas determined from the isopleth maps in Appendices B through L and the data presented in

Section 3. The 480,000 square feet estimated above action levels does not include the residential area along San Marcos Street.

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1. INTRODUCTION

WESTON® was tasked by the U.S. Environmental Protection Agency (EPA) Region 6 under U.S. Army Corps of Engineers (USACE) Rapid Response Contract Number DACA45-98-D-0004, Task Order 0028 to perform soil sampling associated with removal activities pending at the El Paso Metals Survey in El Paso, El Paso County, Texas. The removal assessment activities took place in an area approximately 6 miles in diameter centered in the southern portion of El Paso, El Paso County, Texas. A Site Location Map is provided in Appendix A.

On 28 July 2001, WESTON began providing technical assistance for on-site work through the completion of the removal assessment activities. WESTON has prepared this Removal Assessment Report to document the sampling activities performed in the field and to present the results of these activities.

1.1 OBJECTIVES

The purpose of the removal assessment activities at the El Paso County Metals site was to continue an ongoing screening process of potentially hazardous areas within El Paso, El Paso County, Texas. The objectives of the removal assessment at the El Paso Metals site include the following:

- Identify immediate or potential threats that hazardous substances attributable to the area may pose to human health and the environment, and identify the receptors, or targets, potentially exposed to the hazardous substances.
- Locate potential sources of contamination, and verify areas of contamination by sampling.
- Define the horizontal and vertical extent of soil contamination.
- Use the analytical results to delineate contaminated areas, and estimate the area of contaminated material for potential removal actions.

The objectives of the investigation were achieved by evaluating data that were obtained during the sampling and analysis phases of this survey. The specific sample locations, available background file information as well as aerial photographs provided by EPA Region 6 personnel were used and incorporated into this document. The activities that were performed to meet objectives of the investigation were described in the site-specific Quality Assurance Sampling Plan (QASP) presented in Appendix P.

1.2 SCOPE OF WORK

The scope of work defined by Task Order 0028 was to collect soil samples at various depths (0, 6, 12, 18, and 24 inches) from grid-based sampling points at several on-site locations. Sample locations were provided by the EPA-developed FIELDS data management system. WESTON implemented FIELDS to determine the locations and spacing of the grid samples based on statistical input from the Federal On-scene Coordinator (FOSC). Base maps of each sampled location, which was a school or park, were prepared by WESTON based on ortho-rectified aerial photographs provided by EPA Region 6. FIELDS was utilized to “lay the grid” upon the unpaved areas of each location. Based upon results obtained, gridded areas of each location were identified that contained soil above the established EPA health-based benchmarks, thus requiring potential removal actions. Data management was conducted using the EPA-provided Forms II Lite software.

WESTON was also tasked to maintain a site logbook; to prepare a health and safety plan; to prepare maps and sketches; to prepare a Quality Assurance Sampling Plan (QASP); to procure laboratory services; to provide digitized photo documentation; to provide video documentation; to review background files; to review validation of analytical laboratory results; and to coordinate with FOSC and USACE. During implementation of the project, some of the originally tasked elements were modified or deleted.

1.3 REPORT FORMAT

The El Paso Metals Survey Removal Assessment Report is organized as follows:

- Section 1 - Introduction
- Section 2 - Site Background
- Section 3 - Assessment Activities
- Section 4 - Summary of Results

All figures and tables are included at the end of each respective section. Appendices are attached with the following information:

- Appendix A Site Area/Location Map
- Appendix B Alamo Elementary School
- Appendix C Althea Park
- Appendix D Arroyo Park
- Appendix E Doniphan Park
- Appendix F El Paso High School
- Appendix G El Paso Library
- Appendix H Mesita Elementary School
- Appendix I Roosevelt Elementary School
- Appendix J La Calavera Settlement, San Marcos Street
- Appendix K University of Texas at El Paso (UTEP)
- Appendix L Vilas Elementary School
- Appendix M Digital Photographs
- Appendix N Analytical Maximums and Summary of all Locations
- Appendix O Copy of WESTON Logbook
- Appendix P Quality Assurance Sampling Plan (QASP)
- Appendix Q Analytical Laboratory Summary Reports

2. SITE BACKGROUND

Information regarding site location, summary of previous investigations, site reconnaissance information, and site descriptions are presented in the following subsections.

2.1 SITE LOCATION AND DESCRIPTION

The El Paso County Metals Survey site is located over approximately a 6-mile area centered in the southern portion of El Paso, Texas. The area of concern extends into New Mexico and potentially south of the Rio Grande River into Mexico. The survey area for this assessment is Texas properties within the 3-mile radius from the Junction of Texas, New Mexico and Mexico borders (Appendix A). Sample locations were determined based on FIELDS input, and from EPA and USACE representatives on-site during the removal assessment. The priority for sampling locations has included schools, day care facilities, public parks, other high traffic areas, and residential areas within the area of concern. The sampled areas include the following:

1. Alamo Elementary School; 500 South Hills, El Paso, Texas.
2. Althea Park; 901 Alethea Park Drive, El Paso, Texas.
3. Arroyo Park; 700 Robinson Avenue, El Paso, Texas.
4. Doniphan Park; 1800 West Paisano Drive, El Paso, Texas.
5. El Paso High School; 800 East Schuster Avenue, El Paso, Texas.
6. El Paso Library; 501 North Oregon Street, El Paso, Texas.
7. Mesita Elementary School; 500 Alethea Park Drive, El Paso, Texas.
8. Roosevelt Elementary School; 616 East Fifth Street, El Paso, Texas.
9. La Calavera Settlement; San Marcos Street, El Paso, Texas.
10. University of Texas at El Paso, 500 West University Avenue, El Paso, Texas: North Kidd Field, Memorial Triangle, Library, Liberal Arts, Leech Grove, Jack C. Vowell, Geosciences Building, Engineering Building, day care, and a campus apartment complex.
11. Vilas Elementary School; 220 Lawton Drive, El Paso, Texas.

2.2 SUMMARY OF PREVIOUS INVESTIGATIONS

Previous independent investigations, primary soil investigations, of the area of concern have been conducted by students of the University of Texas at El Paso (UTEP). As part of several theses efforts, extensive sampling of surface soils throughout the site have been completed, and elevated levels of metals, namely arsenic and lead, have been detected. The source of these elevated metals as of present time, have not been not confirmed. In addition to the UTEP studies, a study was conducted by the Texas Air Control Board (TACB), and very recently by a USACE contractor.

The Sampling and Analysis Division of the TACB conducted soil sampling within the area of concern on 12 and 13 July, 1989. The primary objective of the project was to document levels of arsenic in the top 0.5 inch of soils. The highest value of arsenic detected was 1,100 micrograms per gram (parts per million (ppm) of arsenic in soil. This result was from a sample located at the International Boundary and Water Commission, which was also located directly across from a brick manufacturing company in Mexico. The TACB study emphasized collection of soils in the vicinity of schools and recreational parks. At each sampling location, twelve samples were collected from evenly spaced locations, on the circumference of a 2-foot diameter circle. At each location, an aliquot of soil was obtained by removing approximately 1-inch diameter by 0.5-inch depth core.

In May 1993, Brenda E. Barnes, a UTEP graduate student, presented a Master Thesis, titled An Evaluation of Metals Concentrations in Surficial Soils, El Paso County, Texas. The study involved the collection of soil samples from areas surrounding various facilities in El Paso, Texas, that were potential sources of metals contamination. Potential sources of contamination included the ASARCO Smelter, Memorial Park in central El Paso where a former smelter was located, and Phelps Dodge Copper Refinery. Soil samples were collected from outlying areas north and east of El Paso in an effort to observe affects of distance from the potential contaminant sources. Concentrations of arsenic, cadmium, copper, lead, and zinc were found at highest concentrations in the area around the ASARCO Smelter. Higher concentrations were found in the surface samples (2.5 centimeter depth) than in those samples taken from deeper locations. The metals concentrations did not appear to be affected by sample lithology or soil type.

In December 1993, Emmanuel Chukwuka Ndame, a UTEP graduate student, presented a Master Thesis titled, Heavy Metals in Soils in the Vicinity of the University of Texas at El Paso Campus (El Paso County, Texas). The study involved the collection and analysis of 78 soil samples. Areas of interest for the study included the campus of UTEP and parks and public school playgrounds within a 2-kilometer radius of the campus. The samples were analyzed for several metals including arsenic, barium, cadmium, chromium, lead, and selenium. The Ndame Thesis concluded that there was no point source or large-scale contamination. Further, it concluded that lead concentrations increased from the west part of the campus to the ASARCO Smelter. Sample results indicated the presence of arsenic in soils ranging from below the instrument detection limit of 51 ppm to 92 ppm. Surface soil concentrations of lead were reported as high as 1500 ppm. Significant concentrations of arsenic and lead were not detected in any of the off-campus public schools or parks with the exception of a surface soil sample collected from Althea Park which had a lead concentration of 840 ppm.

In May 1994, Dilip Kumar Devanahalli, a UTEP graduate student, presented a Master Thesis, titled Survey of Heavy Metal Concentrations of Soils in Downtown El Paso, Texas. The thesis study involved the collection of soil samples from a downtown area of El Paso, Texas, bounded by Interstate 10 to the north, the Rio Grande River to the south, the Sun Metro Terminal to the west, and Phelps Dodge Copper Refinery to the east. A total of 54 soil samples were collected from the surface and at a depth of 6 inches in public parks, playgrounds, and schools. Arsenic concentrations in the samples ranged from below the instrument detection limit of 13 ppm to 33 ppm. Lead concentrations ranged from the instrument detection limit of 17 ppm to 560 ppm.

Also in May 1994, Shyam Srinivas, a UTEP graduate student, presented a Master Thesis, titled Heavy Metal Contamination of Soils in Public Parks, El Paso, Texas. As part of this study, seventy-two surface and subsurface (6-inch depth) samples were collected from public parks in El Paso. The results of the sample analyses indicated that concentrations of metals were higher in surface soils than in subsurface soils. Arsenic was detected in only one sample, at the instrument detection limit of 55 ppm. Lead concentrations ranged from below the instrument detection limit of 30 ppm to 130 ppm.

In June 2001, Ecology & Environment, a USACE contracted consultant, collected samples from approximately 100 locations within the site. On 21 June 2001, WESTON accompanied by EPA

FOSC Lon Biasco, conducted a site reconnaissance visit of the El Paso County Metals site. WESTON conducted a Total Suspended Particulate (TSP) survey of El Paso, El Paso County, Texas, presented in a report dated November 2001.

Numerous other studies have been conducted, or are in the process of being conducted, by other university and environmental research centers.

2.3 SITE DESCRIPTIONS

The El Paso County Metals Survey consisted of samples collected from 13 locations on the UTEP campus, 5 schools, 3 parks, the El Paso Library, and the La Calavera Settlement located on San Marcos Street, El Paso, Texas. The majority of the soil appeared to be backfill material, except for the La Calavera Settlement, Arroyo Park, and several areas within the UTEP campus, which appeared to be natural soils. The sites that were sampled consisted of playgrounds, soccer fields, football fields, track fields, meeting areas on the UTEP campus, and neighborhood homes within the La Calavera Settlement.

Alamo Elementary School is located at 500 South Hills, on the south side of the City of El Paso. Alamo Elementary School enrolls approximately 320 students each year. Approximately 0.39 acre of the school property was designated for sampling (Appendix B).

Althea Park is located at 901 Althea Park Drive, on the west side of the City of El Paso. Approximately 2 acres of the park, which is primarily used as a practice field for children's athletics, was designated for sampling (Appendix C).

Arroyo Park is located at 700 East Robinson Avenue, on the west side of the City of El Paso. Approximately 63.3 acres of the park was designated for sampling (Appendix D).

Doniphan Park is located at 1800 West Paisano Drive on the west side of the City of El Paso. The park is approximately 11,500 square feet and consists of backfilled sand and playground equipment. WESTON established three sample locations within the park (Appendix E).

El Paso High School is located at 800 East Schuster Avenue, and is located in a west-central area of the City of El Paso. El Paso High School enrolls approximately 1,300 students each year. Approximately 8.82 acres of the school property was designated for sampling (Appendix F).

The El Paso Library at 501 North Oregon Street is centrally located in the City of El Paso. Approximately 0.541 acres of the library property was designated for sampling. WESTON established nine sample locations within the library property boundaries (Appendix G).

Mesita Elementary School is located at 500 Alethea Park Drive, El Paso, Texas, on the west side of the city. The Mesita Elementary school enrolls approximately 540 students each year. Approximately 3.5 acres of the school property was designated for sampling (Appendix H).

Roosevelt Elementary School is located at 616 East Fifth Street, and is located in the south-central side of the City of El Paso. Roosevelt Elementary School enrolls approximately 360 students each year. Approximately 15 square feet of the school property was designated for sampling; the remainder of the school property is covered by buildings and concrete surfaces (Appendix I).

The La Calavera Settlement is located southeast of the intersection of Executive Center Road and Paisano Road, on San Marcos Street. A plat map, provided by the City of El Paso identified 25 privately owned properties (8.6 acres). WESTON collected samples from 8 San Marcos Street properties (Appendix J).

UTEP is located at 500 West University Avenue, and is centrally located in the City of El Paso. Approximately 16.45 acres of the school property was designated for sampling (Appendix K).

Vilas Elementary School is located at 220 Lawton Drive, and is centrally located within the City of El Paso. The Vilas Elementary School enrolls approximately 435 students each year. Approximately 0.37 acre of the school property was designated for sampling (Appendix L).

Aerial photographs and site maps are included in Appendices B through L.

3. ASSESSMENT ACTIVITIES

WESTON conducted soil sampling from 28 July 2001 to 5 August 2001. The assessment activities completed were in general accordance with WESTON's QASP dated June 2001.

The metals survey focused on determining the presence and extent of metals, namely arsenic and lead at eleven different locations including:

- Alamo Elementary School
- Althea Park
- Arroyo Park
- Doniphan Park
- El Paso High School
- El Paso Library
- Mesita Elementary School
- Roosevelt Elementary School
- La Calavera Settlement
- University of Texas at El Paso
- Vilas Elementary School

Sampling locations were determined by a statistical evaluation utilizing the FIELDS data management system. Sample locations are presented for each site sampled in Appendices B through L.

3.1 SAMPLING APPROACH

WESTON collected soil samples using dedicated plastic scoops, two truck-mounted GeoProbe units, and the slam bar method based on a grid pattern established for each given location (i.e., schools, parks, etc.). The grid for each location was determined by a statistical evaluation utilizing the FIELDS data management system. A grid location, which was identified using FIELDS, represented one sample point. Each sample point represented a five-point composite, as well as an individual grab sample. Subsurface grab samples were collected and placed immediately into a precleaned, 4-ounce plastic container. Composite samples were composed of five-sample aliquots of approximate equal volume. The aliquots were generally collected from the grid node as identified in FIELDS, and then collected approximately15 feet from the node in a north, south, east, and west direction. Sample aliquots were placed into a dedicated plastic bag, homogenized, and then placed into the 4-ounce plastic sample containers.

Deviations from the grid points identified using FIELDS were due to new observations made prior to sampling, to information obtained in the field that warranted an altered sampling point, to difficulty in sample collection, or to limited access. The FOSC was notified, and concurrence was obtained if significant deviations from the planned sampling points was proposed.

Both surface and subsurface samples were collected from each grid location. Surface samples from 0 to 1 inch were collected from each of the five sample points within a grid. These five samples were used to make a five-point composite sample. Grab samples were collected from the center of each grid from depths of 6, 12, 18, and 24 inches below ground surface. The grab samples were not composited. This sample scheme was geared to assist with planning for potential subsequent removal activities.

Surface samples (0 to 1 inch in depth) were collected utilizing dedicated plastic scoops. Subsurface samples were collected using slam bars, GeoProbe conventional drilling rigs, or grab sample methods. In general, when sample cores were collected, the outside was shaved, if possible, to remove exterior surfaces and to reduce the possibility of cross-contamination between sampling depths. At the direction of the FOSC, these samples were prepared and analyzed in accordance with SW-846 sample preparation method 3050B and metals analysis 6010B, respectively.

3.2 ANALYTICAL APPROACH

Sample analysis for arsenic and lead was conducted utilizing a fixed laboratory. Applied Environmental Sciences (AES) Laboratory, located at 140 N. Cotton in El Paso, Texas, conducted the analytical testing. AES provided 6 to 8 hour turnaround time on sample analysis. AES analyzed the samples using inductively coupled plasma (ICP) with atomic emission spectrometer technology by EPA Method 6010B. Xenco laboratories, an alternate USACE-approved facility, was used to analyze 10% of the samples collected for QA/QC.

Xenco prepared the samples using EPA method 3051 and analyzed the samples using 1 CP mass spectrometry by EPA Method 6020.

3.3 FIELD ACTIVITIES

Throughout 28 and 29 July 2001, WESTON mobilized to El Paso, Texas, and began site preparations for future sampling activities. A site command post was established within the Holiday Inn Hotel, 6655 Gateway West, El Paso, Texas. GeoProbe crews ran test runs to determine subsurface conditions in preparation for sampling operations.

On 30 July 2001, WESTON conducted sampling operations at Mesita and Vilas Elementary Schools. A total of 27 sample locations was established within the Mesita playgrounds, courtyards, and vegetated areas adjacent to portable classroom units. Sampling activities at Mesita commenced as planned. WESTON established 11 sample locations within the Vilas playground and courtyards. Samples collected at Vilas Elementary were conducted using the slam bar method at 0-, 6-, and 12-inch intervals, because of GeoProbe access issues.

On 31 July 2001, WESTON conducted sampling operations at El Paso High School. FOSC Biasco re-evaluated the sample locations and removed the following sample stations: ELH11-061, ELH12-062, ELH14-065, ELH14-064, ELH14-063, and ELH14-066, leaving 65 sample locations within the school's track field, baseball field, and courtyards. Poor soil conditions limited sampling at stations ELH11-60, ELH16-70, and ELH16-71 to only a 0 and 6 inch sample, using the slam bar method. All other sample stations were collected as planned.

On 1 August 2001, WESTON completed sampling operations at Alamo Elementary School, Roosevelt Elementary School, and Althea Park. WESTON established six sample locations within the playground and courtyards at Alamo Elementary School. Because of GeoProbe access issues, samples were collected at 0-, 6-, and 12-inch intervals using the slam bar method. Since the majority of the campus is paved, WESTON was able to establish only one sample location at Roosevelt Elementary School, and collected that sample using the slam bar method. WESTON established 13 sample locations at Althea Park. All samples collected at Althea Park were collected as planned.

On 2 August 2001, WESTON completed sampling operations at Arroyo Park. Due to inaccessible areas of the park, sample stations were redesigned to fit areas where GeoProbe units could be mobilized. WESTON was able to re-establish 48 sample locations. Once re-established, all sample stations were collected as planned.

On 3 August 2001, WESTON completed sampling operations at the El Paso Library, San Marcos Street (La Calavera Settlement), and the dune buggy trails located on the UTEP property. WESTON established nine sample locations at the El Paso Library. The samples were collected at 0-, 6-, and 12-inch intervals using the slam bar method. San Marcos Street samples were collected based on the accessibility of each home. If possible, two samples locations were established and collected in the front and backyards of homes, using the GeoProbe and slam bar method (at 0-, 6-, and 12-inch intervals). WESTON established 21 sample locations within the La Calavera Settlement property. The samples in areas that were not accessible were eliminated. WESTON established six sample locations for the UTEP dune buggy trails, and sampling went as planned.

On 4 August 2001, WESTON completed sampling operations at North Kidd Field, Memorial Triangle, Library, Liberal Arts, Leech Grove, Jack C. Vowell, Geosciences Building, Engineering Building, day care, and an apartment complex located on the UTEP campus. The samples at depth were collected using the GeoProbe and slam bar method (at 0-, 6-, and 12-inch intervals). Within the campus of UTEP, 61 sample locations were established. All sampling activities went as planned.

At the El Paso High School, station ELH16-068 (0 inch) was re-sampled, and at Alamo Elementary School, station ALM01-002 (6 inch) was re-sampled. Results from initial samples at these particular stations indicated elevated levels of lead (ELH16-068, 1,500 ppm, and ALM01-002, 1,800 ppm). Two separate sample stations (ELH16-068-A and ELH16-068-B) were established within the original grid (ELH16-068) at El Paso High School. Samples were collected at 0 and 6 inch intervals, with results below EPA action limits. Grid ALM01-002 was resampled and identified as ALM01-002-A at Alamo Elementary School. Samples were collected at 0 and 6 inch intervals, with results below EPA action limits.

Throughout all sampling activities WESTON provided the El Paso County Health Department with splits of all (surface) samples collected. The El Paso County Health Department analyzed these samples with their own laboratory equipment. WESTON was not provided a copy of the results obtained from these split samples.

On 5 August 2001, the FOSC and USACE representatives directed WESTON to discontinue investigation activities. WESTON prepared the equipment and demobilized from the site.

3.4 ANALYTICAL RESULTS

Analytical results from the surface soil and subsurface soil samples reported twenty-five samples with arsenic above the 20 ppm action level. The highest reported concentration of arsenic was 62 ppm (6-inch depth) at a residence along San Marcos Street in the La Calavera Settlement. Seventeen samples were reported with lead concentrations above the 500 ppm action level. The highest level of lead (1,800 ppm) was reported in one surface soil sample at Alamo Elementary School. El Paso High School and UTEP - Jack C. Vowell both had samples with lead concentrations reported at 1,500 ppm. WESTON resampled the same grid at Alamo Elementary at the ground surface and 6-inch depth using the 5 point composite sampling method. The analytical results for the surface and 6-inch depth sample were reported as 280 ppm and 130 ppm, respectively. The El Paso High School grid with the 1500 ppm result was subdivided into two grids and resampled. Four composite samples were submitted for lead analysis from the two grids, two surface and two 6-inch depth samples. The lead concentrations in the resampled grids ranged from 140 ppm to 240 ppm. The UTEP Vowell site was not resampled during this sampling event as the results were not received until after demobilization.

Tables 3-1 and 3-2 present the locations and analytical results for samples with concentrations of lead and arsenic above the EPA provided action limits of 500 ppm and 20 ppm, respectively. Data tables including QA/QC results for each of the eleven sites are presented in Appendices B through L and summarized in Appendix N. Analytical laboratory summary reports and WESTON's data validation summaries are included in Appendix Q.

WESTON performed data review to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February 1994), *Quality Assurance /Quality Control Guidance for Removal Activities* (April 1990) and the Regional Protocol for Holding Times, Blanks, VOA Preservation (April 13, 1989). Overall, the data is acceptable for use with the qualifications noted for the use of determining if lead or arsenic were present in soil at concentrations greater than the site action levels.

Table 3-1

Lead Concentrations Above Action Level

Area	Station ID	Result, mg/Kg
Alamo Elementary School	ALM01-002	1,800
El Paso High School	ELH16-068	1,500
La Calavera (San Marcos Street)	SMS01-004	560 D
	SMS01-026	850 DJK
UTEP - Dune Buggy Trail	UTP01-003	590 D
UTEP - North Kidd Field	UTP05-027	590 D
UTEP - Memorial Triangle	UTP06-030	1,400 D
	UTP06-031	890 D
	UTP06-032	1,100 D
	UTP06-034	650 D
	UTP06-035	610 D
UTEP - Jack C. Vowell	UTP07-036	850 D
	UTP07-038	750 D
	UTP07-038	1,500 D
UTEP - Leech Grove	UTP09-041	750 D
	UTP09-042	810 D
	UTP09-043	850 D
	UTP09-044	520 D

Note:

1. Action level provided by EPA Region 6 is 500 ppm for lead.
2. Analytical Method 6010B.
3. The two grids at Alamo Elementary and El Paso High School were resampled (ALM01-002A and ELH16-068 A and B) with reported results below the 500 ppm action level.
4. Flagging criteria presented in Appendix N.

Table 3-2

Arsenic Concentrations Above Action Level

Area	Station ID	Result[2], mg/Kg
Arroyo Park	ARR01-002	28
	ARR01-002	29
	ARR01-018	21
La Calavera (San Marcos Street)	SMS01-004	26
	SMS01-004	59
	SMS01-005	21
	SMS01-006	22
	SMS01-006	62
	SMS01-009	24
	SMS01-025	34 JK
	SMS01-026	28 JK
	SMS01-027	23 JK
	SMS01-028	25 JK
	SMS01-028	28
	SMS01-029	22
UTEP - Dune Buggy Trail	UTP01-002	32.7[3]
	UTP01-003	51
	UTP01-004	39
	UTP01-005	37
	UTP01-005	29
	UTP01-006	34
	UTP01-006	23
UTEP - North Kidd Field	UTP05-027	24 JH
UTEP - Memorial Triangle	UTP06-030	51
	UTP06-032	38
	UTP06-034	40
	UTP06-035	21
UTEP - Jack C. Vowell	UTP07-036	23
	UTP07-038	30
	UTP07-038	49
UTEP - Leech Grove	UTP09-041	33[3]
	UTP09-043	38

Note:

1. Action level provided by EPA Region 6 is 20 ppm for arsenic.
2. Analytical Method 6010B.
3. Analytical Method 6020.
4. Flagging criteria presented in Appendix N.

4. SUMMARY OF RESULTS

WESTON completed soil sampling at the El Paso Metals Survey site located in El Paso, Texas. The El Paso Metals Survey had four objectives:

- Identify immediate or potential threats that hazardous substances attributable to the area may pose to human health and the environment, and identify the receptors, or targets, potentially exposed to the hazardous substances.
- Locate potential sources of contamination, and verify the areas of contamination by sampling.
- Define the horizontal and vertical extent of soil contamination.
- Use the analytical results to delineate contaminated areas, and estimate the area of contaminated material for potential removal actions.

On the basis of the work performed during the sampling, the following results were found.

The laboratory results, presented in Tables 3-1 and 3-2 , for samples collected during the survey confirm that arsenic and lead were detected above action levels in five of the eleven locations sampled. However, two of these locations, Alamo Elementary and El Paso High School were resampled and the elevated lead concentrations could not be reproduced. Appendix B through L present detailed data and figures illustrating results of the survey.

Survey results indicate that arsenic and lead were detected above EPA action levels at multiple locations. The EPA provided action level for arsenic (20 ppm) was exceeded at three of the eleven survey locations: Arroyo Park, La Calavera Settlement, and five locations on the University of Texas El Paso campus. The EPA action level for lead (500 ppm) was exceeded at two of the eleven survey locations: La Calavera Settlement, and five locations around the University of Texas El Paso campus (Dune Buggy Trails, North Kidd Field, Memorial Triangle, Jack C. Vowell, and Leech Grove). Alamo Elementary and El Paso High School had initial sample results above the 500 ppm action level; however, both sites were resampled, resulting in surface and subsurface (6-inch depth) results below 240 ppm lead.

Maximum concentrations of arsenic, 59 ppm and 62 ppm, were detected in surface soil samples at the La Calavera Settlement (San Marcos Street). The maximum concentration of lead measured, 1500 ppm, was reported at the Jack C. Vowell Building on the University of Texas El Paso campus.

Because the contaminants above the action levels were reported in the surface soils (0- to 6-inch depth) the potential receptors include children, adults and domestic animals. Locations where the receptors can potentially be exposed to the elevated levels of arsenic and lead include a park (Arroyo Park), La Calavera Settlement residences along San Marcos Street and five locations on the University of Texas El Paso campus.

Based on the action levels provided by the EPA of 20 ppm for arsenic and 500 ppm for lead WESTON estimated the area above action levels to be 480,000 square feet. This estimate is based on areas determined from the isopleth maps in Attachments B through L and the data presented in Section 3. The 480,000 square feet estimated for removal action does not include the residential area along San Marcos Street.

APPENDICES

APPENDIX A

SITE AREA/LOCATION MAP

APPENDIX B

ALAMO ELEMENTARY SCHOOL

Table B-1
Alamo Elementary
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ALM01-001	3514332.595	360091.571	160	3.0 U
ALM01-002	3514356.863	360086.796	1800	3.0 U
ALM01-003	3514381.919	360077.464	140	3.0 U
ALM01-004	3514406.135	360071.313	86 JL	3.0 UJL
ALM02-005	3514416.859	360129.055	14 JL	3.0 UJL
ALM02-006	3514422.553	360141.197	3.5 JL	3.0 UJL

Table B-2
Alamo Elementary School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ALM01-001	ALM01-001-51-01	0.0	110	3.0 U								
ALM01-001	ALM01-001-51-02	6.0	160	3.0 U								
ALM01-002	ALM01-002-51-01	0.0	328	3.0 U								
ALM01-002	ALM01-002A-51-01	0.0	280 D	3.0 U								
ALM01-002	ALM01-002-51-02	6.0	1800	3.0 U								
ALM01-002	ALM01-002A-51-02	6.0	130 D	3.0 U								
ALM01-002	ALM01-002-51-03	12.0	3.0 U	3.0 U								
ALM01-003	ALM01-003-51-01	0.0	140	3.0 U								
ALM01-003	ALM01-003-51-02	6.0	23	3.0 U								
ALM01-004	ALM01-004-51-01	0.0	86 JL	3.0 UJL								
ALM01-004	ALM01-004-51-02	6.0	73 JL	3.0 UJL								
ALM02-005	ALM02-005-51-01	0.0	14 JL	3.0 UJL								
ALM02-005	ALM02-005-51-02	6.0	3.0 UJL	3.0 UJL								
ALM02-006	ALM02-006-51-01	0.0	3.5 JL	3.0 UJL								
ALM02-006	ALM02-006-51-02	6.0	3.0 UJL	3.0 UJL								

APPENDIX C

ALTHEA PARK

Table C-1
Althea Park
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ALA01-001	3517751.46298336	358041.17449112	61 JL	3.0 UJL
ALA01-002	3517767.11484346	358063.33555727	190	3.0 U
ALA01-003	3517780.09458653	358085.90105182	110	18.0
ALA01-004	3517793.36353221	358103.25408519	67	3.0 U
ALA01-005	3517755.55113686	357999.83768055	28	3.0 U
ALA01-006	3517769.36842096	358021.71969628	59	3.0 U
ALA01-007	3517783.99064927	358043.92812027	60	3.0 U
ALA01-008	3517799.84619064	358065.87220592	50	3.0 U
ALA01-009	3517812.76277383	358087.30881487	71	3.0 U
ALA01-010	3517792.01904568	358008.16144571	85.2 JL	7.59
ALA01-011	3517806.31186903	358029.73172142	70	3.0 U
ALA01-012	3517822.26616654	358051.10512628	140 JL	6.8 JL
ALA01-013	3517834.68427025	358073.79252560	75.5 JL	8.66
ALA01-014	3517737.38511541	358019.61276947	29 JL	3.0 UJL

Table C-2
Althea Park
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ALA01-001	ALA01-001-51-01	0.0	61 JL	3.0 UJL								
ALA01-001	ALA01-001-51-02	6.0	7.2 JL	3.0 UJL								
ALA01-002	ALA01-002-51-01	0.0	9.3	3.0 U								
ALA01-002	ALA01-002-51-02	6.0	190	3.0 U								
ALA01-003	ALA01-003-51-01	0.0	110	3.0 U								
ALA01-003	ALA01-003-51-02	6.0	21	3.0 U			37.9 JL	18.0			-57.39	-142.9
ALA01-004	ALA01-004-51-01	0.0	67	3.0 U								
ALA01-004	ALA01-004-51-02	6.0	66	3.0 U								
ALA01-005	ALA01-005-51-01	0.0	28	3.0 U	28	3.0 U			0.00	0.00		
ALA01-005	ALA01-005-51-02	6.0	10	3.0 U								
ALA01-006	ALA01-006-51-01	0.0	59	3.0 U								
ALA01-006	ALA01-006-51-02	6.0	3.0 U	3.0 U								
ALA01-007	ALA01-007-51-01	0.0	60	3.0 U								
ALA01-007	ALA01-007-51-02	6.0	32	3.0 U								
ALA01-008	ALA01-008-51-01	0.0	50	3.0 U								
ALA01-008	ALA01-008-51-02	6.0	8.6	3.0 U	11	3.0 U			-24.49	0.00		
ALA01-009	ALA01-009-51-01	0.0	71	3.0 U								
ALA01-009	ALA01-009-51-02	6.0	32	3.0 U								
ALA01-010	ALA01-010-51-01	0.0	63	3.0 U			85.2 JL	7.59			-29.96	-86.69
ALA01-010	ALA01-010-51-02	6.0	42	3.0 U								
ALA01-011	ALA01-011-51-01	0.0	70	3.0 U								
ALA01-011	ALA01-011-51-02	6.0	18	3.0 U	27	3.0 U			-40.00	0.00		
ALA01-012	ALA01-012-51-01	0.0	105 JL	3.0 UJL								
ALA01-012	ALA01-012-51-02	6.0	140 JL	6.8 JL								
ALA01-013	ALA01-013-51-01	0.0	53 JL	3.0 UJL								
ALA01-013	ALA01-013-51-02	6.0	39 JL	3.0 UJL			75.5 JL	8.66			-63.76	-97.08
ALA01-014	ALA01-014-51-01	0.0	29 JL	3.0 UJL								
ALA01-014	ALA01-014-51-02	6.0	9.5 JL	3.0 UJL								

APPENDIX D

ARROYO PARK

Table D-1
Arroyo Park
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ARR01-001	3517636.282	359153.438	21	11
ARR01-002	3517145.620	358427.872	220 D	29
ARR01-003	3517584.199	359119.928	27	12
ARR01-004	3517296.848	358592.910	33	8.7
ARR01-005	3517190.395	358474.567	110	8.9
ARR01-006	3517531.049	359090.283	54	6.2
ARR01-007	3517476.113	359098.862	45	5.0 U
ARR01-008	3517368.728	358669.700	48	9.4
ARR01-009	3517417.858	359077.809	5.0 U	5.4
ARR01-010	3517360.410	359048.000	100	8.6
ARR01-011	3517309.131	359017.312	40	5.0 U
ARR01-012	3517261.534	358980.252	280 D	7.1
ARR01-013	3517215.446	358922.314	110	8.3
ARR01-014	3517206.238	358872.481	5.0 U	18
ARR01-015	3517200.590	358812.152	28	9.8
ARR01-016	3517409.969	358725.245	53	13
ARR01-017	3517427.747	358786.132	27	9.3
ARR01-018	3517178.407	358753.129	5.0 U	21
ARR01-019	3517141.500	358686.895	56	5.0
ARR01-020	3517058.458	358542.616	28.1 JL	18.5
ARR01-021	3517002.567	358475.116	25	5.0 U
ARR01-022	3516955.164	358389.952	360 D	20
ARR01-023	3517104.413	358489.732	170 D	5.7
ARR01-024	3517450.749	358843.891	130 D	13
ARR01-025	3517129.122	358533.999	420 D	15
ARR01-026	3517171.052	358596.152	5.0 U	10
ARR01-027	3517201.655	358638.294	5.7	15
ARR01-028	3517246.458	358668.477	64	6.8
ARR01-029	3517274.235	358720.103	250 D	14
ARR01-031	3517483.928	358897.817	36 JL	7.8
ARR01-032	3517507.612	358954.548	136 JL	17
ARR01-033	3517543.254	359009.752	16 JL	8.6
ARR01-034	3517578.365	359050.623	32.0 JL	9.90
ARR01-035	3517315.856	358827.856	5.0 UJL	5.0 U
ARR01-036	3517363.477	358857.222	16 JL	5.0 U
ARR01-037	3517405.889	358897.173	18 JL	5.0 U
ARR01-038	3517634.141	359073.304	34.9 JL	14.3
ARR01-039	3517475.198	359039.589	9.5 JL	9.8
ARR01-040	3517421.342	358983.173	58 JL	5.0 U
ARR01-041	3517684.691	359102.750	8 JL	5.0 U
ARR01-042	3517640.284	359113.324	410 DJL	14
ARR01-043	3517540.236	359055.488	310 DJL	13
ARR01-044	3517739.922	359131.187	33 JL	5.0 U
ARR01-045	3517683.198	359151.340	18 JL	14
ARR01-046	3517786.525	359150.744	5.0 UJL	5.0 U
ARR01-047	3517739.159	359187.077	92 JL	8.6
ARR01-048	3517845.328	359167.833	27 JL	6.1

Table D-2
Arroyo Park
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ARR01-001	ARR01-001-51-01	0.0	21	11								
ARR01-001	ARR01-001-51-02	6.0	6.5	5.0 U								
ARR01-002	ARR01-002-51-01	0.0	200 D	28								
ARR01-002	ARR01-002-51-02	6.0	220 D	29	120 JL	18			58.82	46.81		
ARR01-003	ARR01-003-51-01	0.0	27	12								
ARR01-003	ARR01-003-51-02	6.0	5.0 U	7.1			4.60 JL	10.6			8.33	-39.55
ARR01-004	ARR01-004-51-01	0.0	33	8.7	31 JL	5.0 U			6.25	54.01		
ARR01-004	ARR01-004-51-02	6.0	5.0 U	5.0 U								
ARR01-005	ARR01-005-51-01	0.0	110	8.3	96 JL	8.9			13.59	-6.98		
ARR01-005	ARR01-005-51-02	6.0	13	5.0 U								
ARR01-006	ARR01-006-51-01	0.0	54	6.2								
ARR01-006	ARR01-006-51-02	6.0	15	5.0 U								
ARR01-007	ARR01-007-51-01	0.0	45	5.0 U								
ARR01-007	ARR01-007-51-02	6.0	5.0 U	5.0 U								
ARR01-008	ARR01-008-51-01	0.0	48	9.4								
ARR01-008	ARR01-008-51-02	0.0	27	9.0								
ARR01-009	ARR01-009-51-01	0.0	5.0 U	5.4								
ARR01-009	ARR01-009-51-02	6.0	5.0 U	5.0 U								
ARR01-010	ARR01-010-51-01	0.0	100	7.8								
ARR01-010	ARR01-010-51-02	6.0	6.1	8.6								
ARR01-011	ARR01-011-51-01	0.0	10	5.0 U								
ARR01-011	ARR01-011-51-02	6.0	40	5.0 U								
ARR01-012	ARR01-012-51-01	0.0	66	5.0 U								
ARR01-012	ARR01-012-51-02	6.0	280 D	7.1								
ARR01-013	ARR01-013-51-01	0.0	110	8.3								
ARR01-013	ARR01-013-51-02	6.0	8.8	5.0 U								
ARR01-014	ARR01-014-51-01	0.0	5.0 U	18								
ARR01-014	ARR01-014-51-02	6.0	<5.0	5.0 U								
ARR01-015	ARR01-015-51-01	0.0	28	9.8	28 JL	9.4			0.00	4.17		
ARR01-015	ARR01-015-51-02	6.0	5.7	5.0 U								
ARR01-016	ARR01-016-51-01	0.0	53	13								
ARR01-016	ARR01-016-51-02	6.0	13	5.0								
ARR01-017	ARR01-017-51-01	0.0	24	9.3								
ARR01-017	ARR01-017-51-02	6.0	27	6.9								
ARR01-018	ARR01-018-51-01	0.0	5.0 U	21								
ARR01-018	ARR01-018-51-02	6.0	5.0 U	5.0 U								
ARR01-019	ARR01-019-51-01	0.0	56	5.0								
ARR01-019	ARR01-019-51-02	6.0	5.0 U	5.0 U								
ARR01-020	ARR01-020-51-01	0.0	28	12			28.1 JL	18.5			-0.36	-42.62

Table D-2
Arroyo Park
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ARR01-020	ARR01-020-51-02	6.0	5.0 U	5.0 U								
ARR01-021	ARR01-021-51-01	0.0	25	5.0 U								
ARR01-021	ARR01-021-51-02	6.0	5.0 U	5.0 U								
ARR01-022	ARR01-022-51-01	0.0	360 D	20								
ARR01-022	ARR01-022-51-02	6.0	82	6.2								
ARR01-023	ARR01-023-51-01	0.0	170 D	5.0 U								
ARR01-023	ARR01-023-51-02	6.0	68	5.7								
ARR01-024	ARR01-024-51-01	0.0	130 D	13								
ARR01-024	ARR01-024-51-02	6.0	13	5.5								
ARR01-025	ARR01-025-51-01	0.0	420 D	15								
ARR01-025	ARR01-025-51-02	6.0	42	5.0 U								
ARR01-026	ARR01-026-51-01	0.0	5.0 U	10								
ARR01-026	ARR01-026-51-02	6.0	5.0 U	8.1								
ARR01-027	ARR01-027-51-01	0.0	5.7	15								
ARR01-028	ARR01-028-51-01	0.0	64	6.8								
ARR01-028	ARR01-028-51-02	6.0	5.0 U	5.0 U								
ARR01-029	ARR01-029-51-01	0.0	250 D	14								
ARR01-031	ARR01-031-51-01	0.0	36 JL	7.8								
ARR01-031	ARR01-031-51-02	6.0	5.0 UJL	5.0 U								
ARR01-032	ARR01-032-51-01	0.0	100 JL	12			136 JL	15.1			-30.51	-22.88
ARR01-032	ARR01-032-51-02	6.0	7.1 JL	17								
ARR01-033	ARR01-033-51-01	0.0	16 JL	8.6								
ARR01-033	ARR01-033-51-02	6.0	5.0 UJL	5.0 U	5.0 UJL	5.0 U			0.00	0.00		
ARR01-034	ARR01-034-51-01	0.0	20 JL	5.0 U								
ARR01-034	ARR01-034-51-02	6.0	29 JL	5.0 U			32.0 JL	9.90			-9.84	-65.77
ARR01-035	ARR01-035-51-01	0.0	5.0 UJL	5.0 U								
ARR01-036	ARR01-036-51-01	0.0	16 JL	5.0 U								
ARR01-036	ARR01-036-51-02	6.0	5.0 UJL	5.0 U								
ARR01-037	ARR01-037-51-01	0.0	18 JL	5.0 U								
ARR01-038	ARR01-038-51-01	0.0	23 JL	6.3			34.9 JL	14.3			-41.11	-77.67
ARR01-038	ARR01-038-51-02	6.0	5.0 UJL	5.0 U								
ARR01-039	ARR01-039-51-01	0.0	6.5 JL	9.8								
ARR01-039	ARR01-039-51-02	6.0	9.5 JL	5.0 U								
ARR01-040	ARR01-040-51-01	0.0	40 JL	5.0 U								
ARR01-040	ARR01-040-51-02	6.0	58 JL	5.0 U								
ARR01-041	ARR01-041-51-01	0.0	8 JL	5.0 U								
ARR01-041	ARR01-041-51-02	6.0	5.0 UJL	5.0 U								
ARR01-042	ARR01-042-51-01	0.0	410 DJL	14								
ARR01-042	ARR01-042-51-02	6.0	9 JL	5.2								

Table D-2
Arroyo Park
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ARR01-043	ARR01-043-51-01	0.0	310 DJL	13								
ARR01-043	ARR01-043-51-02	6.0	14 JL	5.0 U								
ARR01-044	ARR01-044-51-01	0.0	33 JL	5.0 U								
ARR01-044	ARR01-044-51-02	6.0	24 JL	5.0 U								
ARR01-045	ARR01-045-51-01	0.0	18 JL	14								
ARR01-045	ARR01-045-51-02	6.0	5.0 UJL	5.0 U								
ARR01-046	ARR01-046-51-01	0.0	5.0 UJL	5.0 U								
ARR01-046	ARR01-046-51-02	6.0	5.0 UJL	5.0 U								
ARR01-047	ARR01-047-51-01	0.0	92 JL	8.6								
ARR01-047	ARR01-047-51-02	6.0	6.4 JL	5.0 U								
ARR01-048	ARR01-048-51-01	0.0	27 JL	6.1								

APPENDIX E

DONIPHAN PARK

Table E-1
Doniphan Park
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
DON01-001	3515183.751	357050.164	13 JL	3.0 UJL
DON01-002	3515189.525	357029.635	13 JL	3.0 UJL
DON01-003	3515201.341	357045.083	14 JL	3.0 UJL

Table E-2
Doniphan Park
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
DON01-001	DON01-001-51-01	0.0	13 JL	3.0 UJL								
DON01-001	DON01-001-51-02	6.0	5.7 JL	3.0 UJL								
DON01-002	DON01-002-51-01	0.0	13 JL	3.0 UJL								
DON01-002	DON01-002-51-02	6.0	5.8 JL	3.0 UJL								
DON01-003	DON01-003-51-01	0.0	14 JL	3.0 UJL								
DON01-003	DON01-003-51-02	6.0	7.2 JL	3.0 UJL								

APPENDIX F

EL PASO HIGH SCHOOL

Table F-1
El Paso High School
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ELH01-001	3516370.797	359070.013	124 JL	10.1
ELH01-002	3516393.544	359083.395	87	6.19
ELH01-003	3516383.044	359046.478	40	3.16 J
ELH01-004	3516406.355	359058.547	120	3.0 U
ELH01-005	3516428.159	359069.726	37	8.74
ELH01-006	3516395.613	359022.641	68.6 JL	7.61
ELH01-007	3516418.393	359033.853	68	3.0 UJL
ELH01-008	3516441.773	359044.426	41	3.0 UJL
ELH01-009	3516431.051	359010.614	93	3.0 UJL
ELH01-010	3516453.204	359021.131	6.5	3.0 UJL
ELH01-011	3516478.348	359032.125	124	3.0 UJL
ELH01-012	3516440.208	358989.836	39	3.0 U
ELH01-013	3516465.128	358999.670	43	3.0 U
ELH01-014	3516489.719	359008.553	67	3.0 UJL
ELH01-015	3516477.645	358977.120	71	3.0 UJL
ELH01-016	3516502.508	358985.870	110 JL	3.0 UJL
ELH02-017	3516434.109	359087.686	47 JL	3.0 UJL
ELH02-018	3516466.210	359066.148	6.7	3.0 U
ELH02-019	3516511.291	359040.196	34 JL	3.0 UJL
ELH02-020	3516533.827	359018.552	49 JK	3.0 UJK
ELH03-021	3516513.355	358977.698	67 JK	3.0 UJL
ELH04-022	3516462.045	358931.219	22 JK	3.0 UJK
ELH04-023	3516465.286	358956.622	29	3.0 UJL
ELH04-024	3516489.900	358953.758	64 JK	3.0 UJL
ELH05-025	3516412.532	358918.192	50	3.0 UJL
ELH05-026	3516438.321	358918.931	67	3.0 UJL
ELH06-027	3516245.737	358781.004	99 JK	3.0 UJK
ELH07-028	3516246.125	359048.441	61 JK	3.0 UJL
ELH07-029	3516255.986	359073.371	92	3.0 UJL
ELH07-030	3516267.260	359017.969	17 JK	3.0 UJK
ELH07-031	3516271.957	359043.223	42 JK	3.0 UJK
ELH07-032	3516276.743	359069.833	63	3.0 UJL
ELH07-033	3516298.049	359039.316	66 JL	3.0 UJL
ELH07-034	3516302.781	359064.497	49 JK	3.0 UJK
ELH07-035	3516306.433	359090.435	65	3.0 U
ELH07-036	3516328.350	359060.684	82	3.0 UJL
ELH07-037	3516331.427	359086.645	35	3.0 UJL
ELH07-038	3516354.919	359080.665	59 JK	3.0 UJK
ELH08-039	3516304.736	358864.400	36 JL	3.0 UJL
ELH08-040	3516322.140	358883.579	21	3.0 UJL
ELH08-041	3516344.479	358897.121	18	3.0 UJL
ELH09-042	3516279.123	358917.359	31	3.0 UJL
ELH09-043	3516285.015	358942.457	83	3.0 UJL
ELH10-044	3516169.461	358933.494	96 JL	11 JL
ELH10-045	3516180.348	358956.155	71 JL	3.0 UJL
ELH10-046	3516190.401	358981.259	11 JK	3.0 UJK
ELH10-047	3516201.377	359007.123	60 JK	3.0 UJK
ELH10-048	3516182.543	358899.679	190	4.9 JL
ELH10-049	3516192.813	358922.992	4.7	3.0 UJL

Table F-1
El Paso High School
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ELH10-050	3516203.330	358946.753	21	3.0 UJL
ELH10-051	3516214.403	358970.540	18	3.0 UJL
ELH10-052	3516225.905	358994.785	24	3.0 UJL
ELH10-053	3516205.990	358887.413	11 JK	3.0 UJL
ELH10-054	3516217.074	358913.050	23	3.0 UJL
ELH10-055	3516228.100	358937.096	12 JK	3.0 UJL
ELH10-056	3516238.781	358959.746	21 JK	3.0 UJL
ELH10-057	3516228.669	358881.665	42 JK	3.0 UJK
ELH10-058	3516240.536	358903.037	250 JL	3.0 UJL
ELH10-059	3516253.228	358927.190	108 JK	3.0 UJL
ELH11-060	3516234.975	358774.689	220 JK	3.0 UJL
ELH15-067	3516131.916	358849.788	76	3.0 UJL
ELH16-068	3516150.286	358840.127	1500	3.0 U
ELH16-068A	3516150.286	358840.127	240 D	3.0 U
ELH16-068B	3516150.286	358840.127	160 D	3.0 U
ELH16-069	3516166.314	358827.351	227 JK	3.0 UJL
ELH16-070	3516189.134	358812.928	220	3.0 UJL
ELH17-071	3516207.413	358793.784	450 JK	3.0 UJL

Table F-2
El Paso High School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH01-001	ELH01-001-51-01	0.0	40	3.0 UJL	40	3.0 U	124 JL	10.1	0.00	0.00	-102.4	-108.4
ELH01-001	ELH01-001-51-02	6.0	56	3.0 UJL	87	3.0 U			-43.36	0.00		
ELH01-002	ELH01-002-51-01	0.0	45 JL	3.0 UJL	87	3.0 U	71.2 JL	4.93 J	-63.64	0.00	-45.09	-48.68
ELH01-002	ELH01-002-51-02	6.0	4.3 JL	3.0 UJL			6.08 JL	6.19			-34.30	-69.42
ELH01-003	ELH01-003-51-01	0.0	24	3.0 U	28	3.0 U	25.5 JL	3.16 J	-15.38	0.00	-6.06	-5.19
ELH01-003	ELH01-003-51-02	6.0	40	3.0 U	36	3.0 U			10.53	0.00		
ELH01-004	ELH01-004-51-01	0.0	16 JL	3.0 UJL								
ELH01-004	ELH01-004-51-02	6.0	98 JL	3.0 UJL	120	3.0 U			-20.18	0.00		
ELH01-005	ELH01-005-51-01	0.0	37	3.0 UJL								
ELH01-005	ELH01-005-51-02	6.0	11	3.0 UJL			17.7 JL	8.74			-46.69	-97.79
ELH01-006	ELH01-006-51-01	0.0	45	3.0 UJL	57	3.0 U	68.6 JL	6.13	-23.53	0.00	-41.55	-68.57
ELH01-006	ELH01-006-51-02	6.0	3.0 U	3.0 UJL			14.8 JL	7.61			-132.6	-86.90
ELH01-007	ELH01-007-51-01	0.0	16	3.0 UJL								
ELH01-007	ELH01-007-51-02	6.0	68	3.0 UJL								
ELH01-008	ELH01-008-51-01	0.0	41	3.0 UJL								
ELH01-008	ELH01-008-51-02	6.0	37	3.0 UJL								
ELH01-009	ELH01-009-51-01	0.0	93	3.0 UJL								
ELH01-009	ELH01-009-51-02	6.0	3.0 U	3.0 UJL								
ELH01-010	ELH01-010-51-01	0.0	6.5	3.0 UJL								
ELH01-010	ELH01-010-51-02	6.0	3.0 U	3.0 UJL								
ELH01-011	ELH01-011-51-01	0.0	14	3.0 UJL								
ELH01-011	ELH01-011-51-02	6.0	124	3.0 UJL								
ELH01-012	ELH01-012-51-01	0.0	39	3.0 U								
ELH01-012	ELH01-012-51-02	6.0	34	3.0 U								
ELH01-013	ELH01-013-51-01	0.0	43	3.0 U								
ELH01-013	ELH01-013-51-02	6.0	33	3.0 U								
ELH01-014	ELH01-014-51-01	0.0	67	3.0 UJL								
ELH01-014	ELH01-014-51-02	6.0	7.2	3.0 UJL								
ELH01-015	ELH01-015-51-01	0.0	71	3.0 UJL								
ELH01-015	ELH01-015-51-02	6.0	3.0 U	3.0 UJL								
ELH01-016	ELH01-016-51-01	0.0	110 JL	3.0 UJL								
ELH01-016	ELH01-016-51-02	6.0	16 JL	3.0 UJL								
ELH02-017	ELH02-017-51-01	0.0	47 JL	3.0 UJL								
ELH02-017	ELH02-017-51-02	6.0	16 JL	3.0 UJL								
ELH02-018	ELH02-018-51-01	0.0	6.7	3.0 U								
ELH02-018	ELH02-018-51-02	6.0	3.0 U	3.0 U								
ELH02-019	ELH02-019-51-01	0.0	34 JL	3.0 UJL								
ELH02-019	ELH02-019-51-02	6.0	3.0 UJL	3.0 UJL								
ELH02-020	ELH02-020-51-01	0.0	49 JK	3.0 UJK								

Table F-2
El Paso High School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH02-020	ELH02-020-51-02	6.0	9.7 JK	3.0 UJK								
ELH03-021	ELH03-021-51-01	0.0	67 JK	3.0 UJL								
ELH03-021	ELH03-021-51-02	6.0	6.7 JK	3.0 UJL								
ELH04-022	ELH04-022-51-01	0.0	22 JK	3.0 UJK								
ELH04-022	ELH04-022-51-02	6.0	4.0 JK	3.0 UJK								
ELH04-023	ELH04-023-51-01	0.0	29	3.0 UJL								
ELH04-023	ELH04-023-51-02	6.0	21	3.0 UJL								
ELH04-024	ELH04-024-51-01	0.0	64 JK	3.0 UJL								
ELH04-024	ELH04-024-51-02	6.0	51 JK	3.0 UJL								
ELH05-025	ELH05-025-51-01	0.0	50	3.0 UJL								
ELH05-025	ELH05-025-51-02	6.0	3.0 U	3.0 UJL								
ELH05-026	ELH05-026-51-01	0.0	67	3.0 UJL								
ELH05-026	ELH05-026-51-02	6.0	3.0 U	3.0 UJL								
ELH06-027	ELH06-027-51-01	0.0	30 JK	3.0 UJK								
ELH06-027	ELH06-027-51-02	6.0	99 JK	3.0 UJK								
ELH07-028	ELH07-028-51-01	0.0	61 JK	3.0 UJL								
ELH07-028	ELH07-028-51-02	6.0	3.0 UJK	3.0 UJL								
ELH07-029	ELH07-029-51-01	0.0	92	3.0 UJL								
ELH07-029	ELH07-029-51-02	6.0	3.0 U	3.0 UJL								
ELH07-030	ELH07-030-51-01	0.0	17 JK	3.0 UJK								
ELH07-030	ELH07-030-51-02	6.0	7.4 JK	3.0 UJK								
ELH07-031	ELH07-031-51-01	0.0	42 JK	3.0 UJK								
ELH07-031	ELH07-031-51-02	6.0	3.0 UJK	3.0 UJK								
ELH07-032	ELH07-032-51-01	0.0	63	3.0 UJL								
ELH07-032	ELH07-032-51-02	6.0	14	3.0 UJL								
ELH07-033	ELH07-033-51-01	0.0	66 JL	3.0 UJL								
ELH07-033	ELH07-033-51-02	6.0	55 JL	3.0 UJL								
ELH07-034	ELH07-034-51-01	0.0	49 JK	3.0 UJK								
ELH07-034	ELH07-034-51-02	6.0	4.0 JK	3.0 UJK								
ELH07-035	ELH07-035-51-01	0.0	65	3.0 U								
ELH07-035	ELH07-035-51-02	6.0	3.0 U	3.0 U								
ELH07-036	ELH07-036-51-01	0.0	82	3.0 UJL								
ELH07-036	ELH07-036-51-02	6.0	14	3.0 UJL								
ELH07-037	ELH07-037-51-01	0.0	35	3.0 UJL								
ELH07-037	ELH07-037-51-02	6.0	4.3	3.0 UJL								
ELH07-038	ELH07-038-51-01	0.0	59 JK	3.0 UJK								
ELH07-038	ELH07-038-51-02	6.0	8.3 JK	3.0 UJK								
ELH08-039	ELH08-039-51-01	0.0	36 JL	3.0 UJL								
ELH08-039	ELH08-039-51-02	6.0	3.0 UJL	3.0 UJL								

Table F-2
El Paso High School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH08-040	ELH08-040-51-01	0.0	21	3.0 UJL								
ELH08-040	ELH08-040-51-02	6.0	3.0 U	3.0 UJL								
ELH08-041	ELH08-041-51-01	0.0	18	3.0 UJL								
ELH08-041	ELH08-041-51-02	6.0	3.0 U	3.0 UJL								
ELH09-042	ELH09-042-51-01	0.0	31	3.0 UJL								
ELH09-042	ELH09-042-51-02	6.0	3.0 U	3.0 UJL								
ELH09-043	ELH09-043-51-01	0.0	14	3.0 UJL								
ELH09-043	ELH09-043-51-02	6.0	83	3.0 UJL								
ELH10-044	ELH10-044-51-01	0.0	41 JL	3.0 UJL								
ELH10-044	ELH10-044-51-02	6.0	96 JL	11 JL								
ELH10-045	ELH10-045-51-01	0.0	55 JL	3.0 UJL								
ELH10-045	ELH10-045-51-02	6.0	71 JL	3.0 UJL								
ELH10-046	ELH10-046-51-01	0.0	8.1 JK	3.0 UJK								
ELH10-046	ELH10-046-51-02	6.0	11 JK	3.0 UJK								
ELH10-047	ELH10-047-51-01	0.0	60 JK	3.0 UJK								
ELH10-047	ELH10-047-51-02	6.0	54 JK	3.0 UJK								
ELH10-048	ELH10-048-51-01	0.0	21	3.0 UJL								
ELH10-048	ELH10-048-51-02	6.0	190	4.9 JL								
ELH10-049	ELH10-049-51-01	0.0	3.0 U	3.0 UJL								
ELH10-049	ELH10-049-51-02	6.0	4.7	3.0 UJL								
ELH10-050	ELH10-050-51-01	0.0	3.0 U	3.0 UJL								
ELH10-050	ELH10-050-51-02	6.0	21	3.0 UJL								
ELH10-051	ELH10-051-51-01	0.0	3.0 U	3.0 UJL								
ELH10-051	ELH10-051-51-02	6.0	18	3.0 UJL								
ELH10-052	ELH10-052-51-01	0.0	24	3.0 UJL								
ELH10-052	ELH10-052-51-02	6.0	16	3.0 UJL								
ELH10-053	ELH10-053-51-01	0.0	11 JK	3.0 UJL								
ELH10-053	ELH10-053-51-02	6.0	6.5 JK	3.0 UJL								
ELH10-054	ELH10-054-51-01	0.0	3.0 U	3.0 UJL								
ELH10-054	ELH10-054-51-02	6.0	23	3.0 UJL								
ELH10-055	ELH10-055-51-01	0.0	3.0 UJK	3.0 UJL								
ELH10-055	ELH10-055-51-02	6.0	12 JK	3.0 UJL								
ELH10-056	ELH10-056-51-01	0.0	20 JK	3.0 UJL								
ELH10-056	ELH10-056-51-02	6.0	21 JK	3.0 UJL								
ELH10-057	ELH10-057-51-01	0.0	3.0 UJK	3.0 UJK								
ELH10-057	ELH10-057-51-02	6.0	42 JK	3.0 UJK								
ELH10-058	ELH10-058-51-01	0.0	5.7 JL	3.0 UJL								
ELH10-058	ELH10-058-51-02	6.0	250 JL	3.0 UJL								
ELH10-059	ELH10-059-51-01	0.0	3.6 JK	3.0 UJL								

Table F-2
El Paso High School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH10-059	ELH10-059-51-02	6.0	108 JK	3.0 UJL								
ELH11-060	ELH11-060-51-01	0.0	220 JK	3.0 UJL								
ELH11-060	ELH11-060-51-02	6.0	40 JK	3.0 UJL								
ELH15-067	ELH15-067-51-01	0.0	76	3.0 UJL								
ELH15-067	ELH15-067-51-02	6.0	14	3.0 UJL								
ELH16-068	ELH16-068-51-01	0.0	1500	3.0 UJL								
ELH16-068	ELH16-068-51-02	6.0	200	3.0 UJL								
ELH16-068	ELH16-068-51-03	12.0	100	3.0 U								
ELH16-068A	ELH16-068A-51-01	0.0	170 D	3.0 U	170 D	3.0 U			0.00	0.00		
ELH16-068A	ELH16-068A-51-02	6.0	240 D	3.0 U								
ELH16-068B	ELH16-068B-51-01	0.0	140 D	3.0 U								
ELH16-068B	ELH16-068B-51-02	6.0	160 D	3.0 U								
ELH16-069	ELH16-069-51-01	0.0	122 JK	3.0 UJL								
ELH16-069	ELH16-069-51-02	6.0	227 JK	3.0 UJL								
ELH16-070	ELH16-070-51-01	0.0	110	3.0 UJL								
ELH16-070	ELH16-070-51-02	6.0	220	3.0 UJL								
ELH17-071	ELH17-071-51-01	0.0	450 JK	3.0 UJL								
ELH17-071	ELH17-071-51-02	6.0	120 JK	3.0 UJL								
EPL01-001	EPL01-001-51-01	0.0	130 D	3.0 U								
EPL01-001	EPL01-001-51-02	6.0	120	3.0 U								
EPL01-003	EPL01-003-51-01	0.0	250 D	3.0 U								
EPL01-003	EPL01-003-51-02	6.0	54	3.0 U								
EPL01-004	EPL01-004-51-01	0.0	310 D	3.0 U			432 JL	13.4			-32.88	-126.8
EPL01-004	EPL01-004-51-02	6.0	120	3.0 U								
EPL01-005	EPL01-005-51-01	0.0	120 D	3.0 U								
EPL01-005	EPL01-005-51-02	6.0	150 D	10 JH								
EPL01-006	EPL01-006-51-01	0.0	170 D	3.0 U								
EPL01-006	EPL01-006-51-02	6.0	45	3.0 U								
EPL01-008	EPL01-008-51-01	0.0	98 D	3.0 U	190 D	3.0 U			-63.89	0.00		
EPL01-008	EPL01-008-51-02	6.0	37	3.0 U								
EPL01-009	EPL01-009-51-01	0.0	100	3.0 U								
EPL01-009	EPL01-009-51-02	6.0	160 D	3.0 U								
EPL01-010	EPL01-010-51-01	0.0	330 D	3.0 U								
EPL01-010	EPL01-010-51-02	6.0	470 D	13 JH								
EPL01-011	EPL01-011-51-01	0.0	350 D	9.3								
EPL01-011	EPL01-011-51-02	6.0	440 D	12								

APPENDIX G

EL PASO LIBRARY

Table G-1
El Paso Library
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
EPL01-001	3514815.334	358817.916	130 D	3.0 U
EPL01-003	3514834.400	358803.541	250 D	3.0 U
EPL01-004	3514850.126	358791.759	432 JL	13.4
EPL01-005	3514845.156	358864.205	150 D	10 JH
EPL01-006	3514866.624	358775.722	170 D	3.0 U
EPL01-008	3514879.141	358786.087	190 D	3.0 U
EPL01-009	3514879.402	358803.394	160 D	3.0 U
EPL01-010	3514897.557	358845.246	470 D	13 JH
EPL01-011	3514906.305	358826.246	440 D	12

Table G-2
El Paso Library
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
EPL01-001	EPL01-001-51-01	0.0	130 D	3.0 U								
EPL01-001	EPL01-001-51-02	6.0	120	3.0 U								
EPL01-003	EPL01-003-51-01	0.0	250 D	3.0 U								
EPL01-003	EPL01-003-51-02	6.0	54	3.0 U								
EPL01-004	EPL01-004-51-01	0.0	310 D	3.0 U			432 JL	13.4			-32.88	-126.8
EPL01-004	EPL01-004-51-02	6.0	120	3.0 U								
EPL01-005	EPL01-005-51-01	0.0	120 D	3.0 U								
EPL01-005	EPL01-005-51-02	6.0	150 D	10 JH								
EPL01-006	EPL01-006-51-01	0.0	170 D	3.0 U								
EPL01-006	EPL01-006-51-02	6.0	45	3.0 U								
EPL01-008	EPL01-008-51-01	0.0	98 D	3.0 U	190 D	3.0 U			-63.89	0.00		
EPL01-008	EPL01-008-51-02	6.0	37	3.0 U								
EPL01-009	EPL01-009-51-01	0.0	100	3.0 U								
EPL01-009	EPL01-009-51-02	6.0	160 D	3.0 U								
EPL01-010	EPL01-010-51-01	0.0	330 D	3.0 U								
EPL01-010	EPL01-010-51-02	6.0	470 D	13 JH								
EPL01-011	EPL01-011-51-01	0.0	350 D	9.3								
EPL01-011	EPL01-011-51-02	6.0	440 D	12								

APPENDIX H

MESITA ELEMENTARY SCHOOL

Table H-1
Mesita Elementary
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
MES01-001	3517362.761	357538.231	41	3.0 U
MES01-002	3517399.887	357566.966	31	6.06
MES01-003	3517358.975	357511.835	37	3.0 U
MES01-004	3517375.327	357522.177	43	3.0
MES01-005	3517388.657	357529.670	55	3.0 U
MES01-006	3517383.460	357502.872	67	10.6
MES01-007	3517414.413	357519.316	370 D	10
MES01-008	3517428.582	357532.160	58	9.2
MES02-009	3517481.000	357528.768	94	3.0 U
MES02-010	3517447.487	357481.629	200 D	12
MES02-011	3517470.893	357483.709	480 D	14
MES03-012	3517455.350	357509.877	63	4.8
MES04-013	3517450.647	357550.408	330 D	5.2
MES05-014	3517475.030	357557.062	200 D	3.0 U
MES05-015	3517492.890	357562.404	330 D	11
MES05-016	3517506.304	357586.650	210 D	5.2
MES06-017	3517448.791	357651.817	270 D	7.1
MES06-018	3517480.914	357664.728	36	3.0 U
MES06-019	3517488.351	357690.724	17	3.0 U
MES06-020	3517506.512	357661.249	27	3.0 U
MES06-021	3517514.236	357681.314	37	3.0 U
MES06-022	3517522.141	357704.436	60	3.0 U
MES06-023	3517518.510	357629.130	16	3.0 U
MES06-024	3517528.586	357649.671	9.4	3.0 U
MES06-025	3517540.861	357672.804	13	3.0 U
MES07-026	3517459.307	357625.893	110	3.0 U
MES08-027	3517382.360	357622.368	110	10
MES08-028	3517410.713	357623.848	320 D	8.2

Table H-2
Mesita Elementary School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
MES01-001	MES01-001-51-01	0.0	16	3.0 U								
MES01-001	MES01-001-51-02	6.0	41	3.0 U								
MES01-002	MES01-002-51-01	0.0	26	3.0 U			22.2 JL	6.06			15.77	-67.55
MES01-002	MES01-002-51-02	6.0	31	3.0 U								
MES01-003	MES01-003-51-01	0.0	37	3.0 U								
MES01-003	MES01-003-51-02	6.0	3.0 U	3.0 U								
MES01-004	MES01-004-51-01	0.0	43	3								
MES01-004	MES01-004-51-02	6.0	28	3.0 U								
MES01-005	MES01-005-51-01	0.0	55	3.0 U								
MES01-005	MES01-005-51-02	6.0	16	3.0 U								
MES01-006	MES01-006-51-01	0.0	67	5.1								
MES01-006	MES01-006-51-02	6.0	18	7.1			19.4 JL	10.6			-7.49	-39.55
MES01-007	MES01-007-51-01	0.0	51	3.0 U								
MES01-007	MES01-007-51-02	6.0	370 D	10								
MES01-008	MES01-008-51-01	0.0	34	3.0 U								
MES01-008	MES01-008-51-02	6.0	58	9.2								
MES02-009	MES02-009-51-01	0.0	94	3.0 U								
MES02-009	MES02-009-51-02	6.0	11	3.0 U								
MES02-010	MES02-010-51-01	0.0	200 D	10								
MES02-010	MES02-010-51-02	6.0	21	12			15.1 JL	8.59			32.69	33.12
MES02-011	MES02-011-51-01	0.0	480 D	14								
MES02-011	MES02-011-51-02	6.0	23	3.0 U								
MES03-012	MES03-012-51-01	0.0	63	4.8								
MES03-012	MES03-012-51-02	6.0	36	4.6	39	3.0 U			-8.00	42.11		
MES04-013	MES04-013-51-01	0.0	330 D	5.2								
MES04-013	MES04-013-51-02	6.0	24	3.0 U								
MES05-014	MES05-014-51-01	0.0	200 D	3.0 U								
MES05-014	MES05-014-51-02	6.0	83	3.0 U								
MES05-015	MES05-015-51-01	0.0	330 D	11								
MES05-015	MES05-015-51-02	6.0	41	3.0 U								
MES05-016	MES05-016-51-01	0.0	210 D	5.2								
MES05-016	MES05-016-51-02	6.0	80	3.0 U								
MES06-017	MES06-017-51-01	0.0	27	3.0 U								
MES06-017	MES06-017-51-02	6.0	270 D	7.1								
MES06-018	MES06-018-51-01	0.0	36	3.0 U								
MES06-018	MES06-018-51-02	6.0	13	3.0 U								
MES06-019	MES06-019-51-01	0.0	17	3.0 U								
MES06-019	MES06-019-51-02	6.0	15	3.0 U								
MES06-020	MES06-020-51-01	0.0	18	3.0 U	27	3.0 U			-40.00	0.00		

Table H-2
Mesita Elementary School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
MES06-020	MES06-020-51-02	6.0	14	3.0 U								
MES06-021	MES06-021-51-01	0.0	11	3.0 U								
MES06-021	MES06-021-51-02	6.0	37	3.0 U								
MES06-022	MES06-022-51-01	0.0	60	3.0 U								
MES06-022	MES06-022-51-02	6.0	3.0 U	3.0 U	3.0 UJL	3.0 UJK			0.00	0.00		
MES06-023	MES06-023-51-01	0.0	11	3.0 U								
MES06-023	MES06-023-51-02	6.0	16	3.0 U								
MES06-024	MES06-024-51-01	0.0	9.4	3.0 U								
MES06-024	MES06-024-51-02	6.0	3.0 U	3.0 U								
MES06-025	MES06-025-51-01	0.0	13	3.0 U								
MES06-025	MES06-025-51-02	6.0	3.0 U	3.0 U								
MES07-026	MES07-026-51-01	0.0	110	3.0 U								
MES07-026	MES07-026-51-02	6.0	21	3.0 U								
MES08-027	MES08-027-51-01	0.0	62	3.0 U								
MES08-027	MES08-027-51-02	6.0	110	10								
MES08-028	MES08-028-51-01	0.0	320 D	8.2								
MES08-028	MES08-028-51-02	6.0	18	3.0 U								

APPENDIX I

ROOSEVELT ELEMENTARY SCHOOL

Table I-1
Roosevelt Elementary
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
RSV01-001	3514104.050	359706.087	31	3.0 U

Table I-2
Roosevelt Elementary School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
RSV01-001	RVS01-001-51-01	0.0	21	3.0 U								
RSV01-001	RVS01-001-51-02	6.0	31	3.0 U								

APPENDIX J

LA CALAVERA SETTLEMENT, SAN MARCOS STREET

Table J-1
La Cavavera Settlement (San Marcos Street)
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
SMS01-004	3517976.227	355778.624	560 D	59
SMS01-005	3517991.413	355761.802	270 D	21
SMS01-006	3517991.304	355790.202	480 D	62
SMS01-007	3518015.947	355798.916	142 JL	18
SMS01-008	3518012.508	355775.731	140 D	14
SMS01-009	3518032.883	355800.097	240 D	24
SMS01-010	3518039.826	355781.000	68	5.0 U
SMS01-011	3518075.690	355792.027	120	16
SMS01-012	3518062.190	355785.276	69	4.4
SMS01-013	3518136.186	355835.575	170 D	4.9
SMS01-014	3518146.701	355847.556	220 DJK	16 JK
SMS01-015	3518172.072	355869.970	70 JK	8.7 JK
SMS01-016	3518177.153	355881.645	43 JK	3.0 UJK
SMS01-017	3518195.309	355893.239	120 JK	5.0 UJK
SMS01-018	3518209.171	355921.168	19 JK	3.0 UJK
SMS01-019	3518233.061	355951.979	25 JK	3 UJK
SMS01-025	3518064.311	355832.889	260 DJK	34 JK
SMS01-026	3518076.570	355838.173	850 DJK	28 JK
SMS01-027	3518058.486	355848.272	180 DJK	23 JK
SMS01-028	3518054.009	355837.596	240 DJK	28 JK
SMS01-029	3517984.588	355847.039	210 D	22

Table J-2
La Calavera Settlement (San Marcos Street)
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
SMS01-004	SMS01-004-51-01-3F	0.0	220 D	26								
SMS01-004	SMS01-004-51-02-3F	6.0	560 D	59								
SMS01-005	SMS01-005-51-01-3B	0.0	111	16								
SMS01-005	SMS01-005-51-02-3B	6.0	270 D	21								
SMS01-006	SMS01-006-51-01-4F	0.0	200 D	22								
SMS01-006	SMS01-006-51-02-4F	6.0	480 D	62								
SMS01-007	SMS01-007-51-01-6F	0.0	140 D	18								
SMS01-007	SMS01-007-51-02-6F	6.0	95	6.7			142 JL	17.2			-39.66	-87.87
SMS01-008	SMS01-008-51-01-6B	0.0	140 D	14								
SMS01-009	SMS01-009-51-01-7F	0.0	190 D	24	240 D	23			-23.26	4.26		
SMS01-009	SMS01-009-51-02-7F	6.0	150 D	13	180 D	10			-18.18	26.09		
SMS01-010	SMS01-010-51-01-7B	0.0	68	5.0 U								
SMS01-010	SMS01-010-51-02-7B	6.0	34	3.0 U								
SMS01-011	SMS01-011-51-01-Purp	0.0	100	12								
SMS01-011	SMS01-011-51-02-Purp	6.0	120	16								
SMS01-012	SMS01-012-51-01-9F	0.0	45	3.0 U								
SMS01-012	SMS01-012-51-02-9F	6.0	69	4.4								
SMS01-013	SMS01-013-51-01-11F	0.0	100 JK	3.0 UJK								
SMS01-013	SMS01-013-51-02-11F	6.0	170 D	4.9								
SMS01-014	SMS01-014-51-01-11F	0.0	150 DJK	11 JK								
SMS01-014	SMS01-014-51-02-11F	6.0	220 DJK	16 JK								
SMS01-015	SMS01-015-51-01	0.0	70 JK	8.7 JK								
SMS01-016	SMS01-016-51-01	0.0	43 JK	3.0 UJK								
SMS01-017	SMS01-017-51-01	0.0	32 JK	5.0 UJK								
SMS01-017	SMS01-017-51-02	6.0	120 JK	3.0 UJK								
SMS01-018	SMS01-018-51-01	0.0	19 JK	3.0 UJK								
SMS01-018	SMS01-018-51-02	6.0	13 JK	3.0 UJK								
SMS01-019	SMS01-019-51-01-13&1	0.0	25 JK	3 UJK								
SMS01-019	SMS01-019-51-02-13&1	6.0	17 JK	3 UJK								
SMS01-025	SMS01-025-51-01-17F	0.0	260 DJK	34 JK								
SMS01-025	SMS01-025-51-02-17F	6.0	110 JK	15 JK								
SMS01-026	SMS01-026-51-01-26	0.0	180 DJK	17 JK			190 JL	21.7			-5.41	-24.29
SMS01-026	SMS01-026-51-02-26	6.0	850 DJK	28 JK								
SMS01-027	SMS01-027-51-01-17B	0.0	180 DJK	23 JK								
SMS01-027	SMS01-027-51-02-17B	6.0	57 JK	14 JK								
SMS01-028	SMS01-028-51-01-18	0.0	210 DJK	25 JK								
SMS01-028	SMS01-028-51-02-18	6.0	240 DJK	28 JK								
SMS01-029	SMS01-029-51-01-22	0.0	210 D	22								
SMS01-029	SMS01-029-51-02-22	6.0	88 JK	11 JK								

APPENDIX K

UNIVERSITY OF TEXAS AT EL PASO (UTEP)

Table K-1
University of Texas El Paso - UTP01 - Dune Buggy Trail
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP01-001	3517447.611	356936.323	26	8.4
UTP01-002	3517381.639	356944.744	170 D	32.7
UTP01-003	3517482.487	356847.341	590 D	51
UTP01-004	3517500.301	356812.312	400 D	39
UTP01-005	3517388.110	356874.319	480 D	37
UTP01-006	3517393.037	356821.880	420 D	34

Table K-2
University of Texas at El Paso - UTP01 - Dune Buggy Trail
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP01-001	UTP01-001-51-01	0.0	26	8.4								
UTP01-001	UTP01-001-51-02	6.0	3.0 U	3.0 U								
UTP01-002	UTP01-002-51-01	0.0	120	6.6								
UTP01-002	UTP01-002-51-02	6.0	3.0 U	3.0 U	170 D	9.1	161 JL	32.7	-193.1	-100.8	-192.7	-166.4
UTP01-003	UTP01-003-51-01	0.0	590 D	51								
UTP01-004	UTP01-004-51-01	0.0	400 D	39								
UTP01-004	UTP01-004-51-02	6.0	17	8.3								
UTP01-005	UTP01-005-51-01	0.0	480 D	37								
UTP01-005	UTP01-005-51-02	6.0	310 D	26								
UTP01-006	UTP01-006-51-01	0.0	420 D	34								
UTP01-006	UTP01-006-51-02	6.0	380 D	23								

Table K-3
University of Texas El Paso - UTP02 - Soccer Field #1
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP02-007	3517337.395	356880.502	3.0 U	3.0 U
UTP02-008	3517340.802	356913.175	3.0 U	3.0 U
UTP02-009	3517293.736	356919.550	10.8 JL	3.0 U
UTP02-010	3517289.701	356885.908	5.0 U	3.0 U

Table K-4
University of Texas at El Paso - UTP02 - Soccer Field 1
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP02-007	UTP02-007-51-01	0.0	3.0 U	3.0 U								
UTP02-008	UTP02-008-51-01	0.0	3.0 U	3.0 U								
UTP02-009	UTP02-009-51-01	0.0	5.7	3.0 U			10.8 JL	2.53 J			-61.82	17.00
UTP02-010	UTP02-010-51-01	0.0	4.2	3.0 U	5.0 U	3.0 U			-17.39	0.00		

Table K-5
University of Texas El Paso - UTP03 - Soccer Field #2
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP03-011	3517276.715	357051.261	8.1	3.0 U
UTP03-012	3517303.746	357094.578	7.3	3.0 U
UTP03-013	3517221.706	357089.775	11	3.0 U
UTP03-014	3517250.041	357132.083	7.0	3.0 U

Table K-6
University of Texas at El Paso - UTP03 - Soccer Field 2
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP03-011	UTP03-011-51-01	0.0	8.1	3.0 U								
UTP03-012	UTP03-012-51-01	0.0	7.3	3.0 U								
UTP03-013	UTP03-013-51-01	0.0	11	3.0 U								
UTP03-014	UTP03-014-51-01	0.0	7.0	3.0 U								

Table K-7
University of Texas El Paso - UTP04 - Apartment Complex
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP04-015	3516498.144	357637.360	23	3.0 U
UTP04-016	3516487.230	357644.372	24	3.0 U
UTP04-017	3516472.597	357656.581	25	3.0 U
UTP04-018	3516462.181	357640.401	22	3.0 U
UTP04-019	3516488.238	357619.741	22	3.0 U

Table K-8
University of Texas at El Paso - UTP04 - Apartment Complex
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP04-015	UTP04-015-51-01	0.0	23	3.0 U								
UTP04-016	UTP04-016-51-01	0.0	24	3.0 U								
UTP04-017	UTP04-017-51-01	0.0	25	3.0 U								
UTP04-018	UTP04-018-51-01	0.0	22	3.0 U								
UTP04-019	UTP04-019-51-01	0.0	22	3.0 U								

Table K-9
University of Texas El Paso - UTP05 - North Kidd Field
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP05-020	3516383.406	357349.140	220 D	6.4 JH
UTP05-021	3516388.798	357373.655	450 D	15 JH
UTP05-022	3516391.036	357402.997	54	3.0 U
UTP05-023	3516394.001	357431.198	95	5.0 U
UTP05-024	3516396.236	357458.452	490 D	18 JH
UTP05-025	3516414.529	357343.005	120 D	5.0 U
UTP05-026	3516416.472	357370.336	220 D	5.0 U
UTP05-027	3516417.433	357400.219	590 D	24 JH
UTP05-028	3516417.568	357427.762	240 D	6.6 JH
UTP05-029	3516418.529	357455.487	190 D	5.3 JH

Table K-10
University of Texas at El Paso - UTP05 - North Kidd Field
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP05-020	UTP05-020-51-01	0.0	220 D	6.4 JH								
UTP05-020	UTP05-020-51-02	6.0	100	5.0 U	130 D	3.0 U			-26.09	50.00		
UTP05-021	UTP05-021-51-01	0.0	44	3.0 U								
UTP05-021	UTP05-021-51-02	6.0	450 D	15 JH			121 JL	7.01			115.24	72.60
UTP05-022	UTP05-022-51-01	0.0	54	3.0 U								
UTP05-022	UTP05-022-51-02	6.0	26	3.0 U								
UTP05-023	UTP05-023-51-01	0.0	38	3.0 U								
UTP05-023	UTP05-023-51-02	6.0	95	5.0 U								
UTP05-024	UTP05-024-51-01	0.0	280 D	4.5 JH								
UTP05-024	UTP05-024-51-02	6.0	490 D	18 JH								
UTP05-025	UTP05-025-51-01	0.0	120 D	5.0 U								
UTP05-025	UTP05-025-51-02	6.0	63	5.0 U								
UTP05-026	UTP05-026-51-01	0.0	160 D	3.0 U								
UTP05-026	UTP05-026-51-02	6.0	220 D	5.0 U								
UTP05-027	UTP05-027-51-01	0.0	130 D	3.0 U								
UTP05-027	UTP05-027-51-02	6.0	590 D	24 JH								
UTP05-028	UTP05-028-51-01	0.0	94	3.0 U			103 JL	5.54 J			-9.14	-59.48
UTP05-028	UTP05-028-51-02	6.0	240 D	6.6 JH								
UTP05-029	UTP05-029-51-01	0.0	65	3.0 U	74	3.0 U			-12.95	0.00		
UTP05-029	UTP05-029-51-02	6.0	190 D	5.3 JH								

Table K-11
University of Texas El Paso - UTP06 - Memorial Triangle
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP06-030	3515964.220	357470.987	1400 D	51
UTP06-031	3515962.933	357491.359	890 D	20
UTP06-032	3515998.259	357478.335	1100 D	38
UTP06-033	3516001.008	357523.003	420 D	13
UTP06-034	3515975.106	357507.068	650 D	40
UTP06-035	3516012.260	357497.256	610 D	21

Table K-12
University of Texas at El Paso - UTP06 - Memorial Triangle
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP06-030	UTP06-030-51-01	0.0	1400 D	51								
UTP06-030	UTP06-030-51-02	6.0	250 D	6.5								
UTP06-031	UTP06-031-51-01	0.0	890 D	20								
UTP06-031	UTP06-031-51-02	6.0	22	3.0 U								
UTP06-032	UTP06-032-51-01	0.0	12	3.0 U								
UTP06-032	UTP06-032-51-02	6.0	1100 D	38								
UTP06-033	UTP06-033-51-01	0.0	420 D	13								
UTP06-033	UTP06-033-51-02	6.0	6.2	9.7								
UTP06-034	UTP06-034-51-01	0.0	650 D	16								
UTP06-034	UTP06-034-51-02	6.0	11	40								
UTP06-035	UTP06-035-51-01	0.0	610 D	21								
UTP06-035	UTP06-035-51-02	6.0	14	14								

Table K-13
University of Texas El Paso - UTP07 - Jack C. Vowell Hall
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP07-036	3516148.332	357455.548	850 D	23
UTP07-037	3516157.913	357461.485	270 D	9.2
UTP07-038	3516170.422	357451.621	1500 D	49

Table K-14
University of Texas at El Paso - UTP07 - Jack C. Vowell Hall
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP07-036	UTP07-036-51-01	0.0	850 D	23	790 D	21			7.32	9.09		
UTP07-036	UTP07-036-51-02	6.0	730 D	16								
UTP07-037	UTP07-037-51-01	0.0	240 D	9.2								
UTP07-037	UTP07-037-51-02	6.0	270 D	6.0 U								
UTP07-038	UTP07-038-51-01	0.0	750 D	30								
UTP07-038	UTP07-038-51-02	6.0	1500 D	49								

Table K-15
University of Texas El Paso - UTP08 - Geosciences
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP08-039	3515926.805	357396.820	390 D	8.5
UTP08-040	3515934.715	357417.618	310 D	6.0 U

Table K-16
University of Texas at El Paso - UTP08 - Geosciences Building
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP08-039	UTP08-039-51-01	0.0	220 D	5.0 U								
UTP08-039	UTP08-039-51-02	6.0	390 D	8.5								
UTP08-040	UTP08-040-51-01	0.0	140 D	3.0 U								
UTP08-040	UTP08-040-51-02	6.0	310 D	6.0 U								

Table K-17
University of Texas El Paso - UTP09 - Leech Grove
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP09-041	3515893.420	357490.688	750 D	33.0
UTP09-042	3515899.201	357474.880	810 D	17
UTP09-043	3515908.937	357497.044	850 D	38
UTP09-044	3515915.094	357472.369	520 D	20

Table K-18
University of Texas at El Paso - UTP09 - Leech Grove
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP09-041	UTP09-041-51-01	0.0	750 D	21			612 JL	33.0			20.26	-44.44
UTP09-041	UTP09-041-51-02	6.0	79	14								
UTP09-042	UTP09-042-51-01	0.0	810 D	12								
UTP09-042	UTP09-042-51-02	6.0	30	17								
UTP09-043	UTP09-043-51-01	0.0	850 D	38								
UTP09-043	UTP09-043-51-02	6.0	160 D	13								
UTP09-044	UTP09-044-51-01	0.0	520 D	17								
UTP09-044	UTP09-044-51-02	6.0	74	20								

Table K-19
University of Texas El Paso - UTP10 - Liberal Arts
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP10-045	3515931.909	357633.807	150 D	3.0 U
UTP10-046	3515949.310	357637.952	140 D	3.0 U

Table K-20
University of Texas at El Paso - UTP10 - Liberal Arts Building
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP10-045	UTP10-045-51-01	0.0	150 D	3.0 U								
UTP10-045	UTP10-045-51-02	6.0	3.0 U	3.0 U								
UTP10-046	UTP10-046-51-01	0.0	140 D	3.0 U								
UTP10-046	UTP10-046-51-02	6.0	62	3.0 U	84	3.0 U			-30.14	0.00		

Table K-21
University of Texas El Paso - UTP11 - Engineering Building
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP11-047	3515766.910	357703.953	140 D	3.0 U
UTP11-048	3515783.557	357689.120	291 JL	11.9
UTP11-049	3515802.568	357678.262	64	3.0 U

Table K-22
University of Texas at El Paso - UTP11 - Engineering Building
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP11-047	UTP11-047-51-01	0.0	140 D	3.0 U								
UTP11-047	UTP11-047-51-02	6.0	12	3.0 U								
UTP11-048	UTP11-048-51-01	0.0	140 D	5.0 U			291 JL	11.9			-70.07	-81.66
UTP11-048	UTP11-048-51-02	6.0	27	3.0 U	18	3.0 U			40.00	0.00		
UTP11-049	UTP11-049-51-01	0.0	64	3.0 U								
UTP11-049	UTP11-049-51-02	6.0	3.0 U	3.0 U								

Table K-23
University of Texas El Paso - UTP12 - Day Care Center
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP12-050	3515696.617	357735.841	170 DJK	5.7
UTP12-051	3515681.175	357702.853	320 DJK	11
UTP12-052	3515692.820	357708.945	63 JK	3.0 U
UTP12-053	3515704.890	357712.434	210 DJK	15 U
UTP12-054	3515696.638	357692.291	160 DJK	7.5
UTP12-055	3515718.398	357744.711	120 DJK	3.0 U
UTP12-056	3515723.505	357734.960	190 DJK	5.0 U
UTP12-057	3515714.745	357741.687	235 JL	16

Table K-24
University of Texas at El Paso - UTP12 - Day Care Center
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP12-050	UTP12-050-51-01	0.0	43 JK	3.0 U								
UTP12-050	UTP12-050-51-02	6.0	170 DJK	5.7								
UTP12-051	UTP12-051-51-01	0.0	270 DJK	7.9								
UTP12-051	UTP12-051-51-02	6.0	320 DJK	11								
UTP12-052	UTP12-052-51-01	0.0	63 JK	3.0 U								
UTP12-052	UTP12-052-51-02	6.0	29 JK	3.0 U								
UTP12-053	UTP12-053-51-01	0.0	17 JK	3.0 U								
UTP12-053	UTP12-053-51-02	6.0	210 DJK	15 U								
UTP12-054	UTP12-054-51-01	0.0	36 JK	3.0 U								
UTP12-054	UTP12-054-51-02	6.0	160 DJK	7.5								
UTP12-055	UTP12-055-51-01	0.0	120 DJK	3.0 U								
UTP12-055	UTP12-055-51-02	6.0	48 JK	3.0 U								
UTP12-056	UTP12-056-51-01	0.0	150 DJK	3.0 U								
UTP12-056	UTP12-056-51-02	6.0	190 DJK	5.0 U	180 D	5.0 U			5.41	0.00		
UTP12-057	UTP12-057-51-01	0.0	180 DJK	3.0 U			235 JL	14.5			-26.51	-131.4
UTP12-057	UTP12-057-51-02	6.0	150 DJK	16								

Table K-25
University of Texas El Paso - UTP13 - Library
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP13-058	3515615.309	357466.993	10 JK	3.0 U
UTP13-059	3515650.195	357467.117	27 JK	3.0 U
UTP13-060	3515665.665	357468.464	26	3.0 U
UTP13-061	3515679.101	357467.113	25	3.0 U

Table K-26
University of Texas at El Paso - UTP13 - Library
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP13-058	UTP13-058-51-01	0.0	10 JK	3.0 U								
UTP13-058	UTP13-058-51-02	6.0	5.0 JK	3.0 U								
UTP13-059	UTP13-059-51-01	0.0	27 JK	3.0 U								
UTP13-059	UTP13-059-51-02	6.0	8.7 JK	3.0 U								
UTP13-060	UTP13-060-51-01	0.0	26	3.0 U								
UTP13-060	UTP13-060-51-02	6.0	21	3.0 U								
UTP13-061	UTP13-061-51-01	0.0	25	3.0 U								
UTP13-061	UTP13-061-51-02	6.0	4.5	3.0 U								

APPENDIX L

VILAS ELEMENTARY SCHOOL

Table L-1
Vilas Elementary
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
VIL01-001	3515003.680	357851.438	320 D	3.0 U
VIL02-002	3514992.698	357881.504	110	3.0 U
VIL03-003	3514948.454	357881.504	110	3.0 U
VIL04-004	3514932.944	357849.211	320 D	5.1
VIL05-005	3514888.678	357900.028	6.57 JL	3.0 U
VIL05-006	3514881.595	357884.323	3.0 U	3.0 U
VIL05-007	3514891.711	357893.502	11	3.0 U
VIL05-008	3514902.855	357898.967	10	3.0 U
VIL05-009	3514888.692	357872.296	7.6	3.0 U
VIL05-010	3514899.578	357879.555	32	3.0 U
VIL05-011	3514908.416	357887.602	53	3.0 U

Table L-2
Vilas Elementary School
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
VIL01-001	VIL01-001-51-01	0.0	290 D	3.0 U								
VIL01-001	VIL01-001-51-02	6.0	320 D	3.0 U								
VIL02-002	VIL02-002-51-01	0.0	110	3.0 U								
VIL02-002	VIL02-002-51-02	6.0	82	3.0 U								
VIL03-003	VIL03-003-51-01	0.0	110	3.0 U	110 JL	3.0 UJK			0.00	0.00		
VIL03-003	VIL03-003-51-02	6.0	68	3.0 U								
VIL04-004	VIL04-004-51-01	0.0	320 D	5.1								
VIL04-004	VIL04-004-51-02	6.0	14	3.0 U								
VIL05-005	VIL05-005-51-01	0.0	3.0 U	3.0 U			6.57 JL	1.16 J			-74.61	88.46
VIL05-005	VIL05-005-51-02	6.0	3.0 U	3.0 U								
VIL05-006	VIL05-006-51-01	0.0	3.0 U	3.0 U								
VIL05-006	VIL05-006-51-02	6.0	3.0 U	3.0 U								
VIL05-007	VIL05-007-51-01	0.0	3.0 U	3.0 U								
VIL05-007	VIL05-007-51-02	6.0	11	3.0 U								
VIL05-008	VIL05-008-51-01	0.0	10	3.0 U								
VIL05-008	VIL05-008-51-02	6.0	5.6	3.0 U								
VIL05-009	VIL05-009-51-01	0.0	4.9	3.0 U								
VIL05-009	VIL05-009-51-02	6.0	7.6	3.0 U								
VIL05-010	VIL05-010-51-01	0.0	9.7	3.0 U								
VIL05-010	VIL05-010-51-02	6.0	32	3.0 U								
VIL05-011	VIL05-011-51-01	0.0	8.9	3.0 U								
VIL05-011	VIL05-011-51-02	6.0	53	3.0 U								

APPENDIX M

DIGITAL PHOTOGRAPHS

APPENDIX N

ANALYTICAL MAXIMUMS AND SUMMARY OF ALL LOCATIONS

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ALA01-001	3517751.463	358041.174	61 JL	3.0 UJL
ALA01-002	3517767.115	358063.336	190	3.0 U
ALA01-003	3517780.095	358085.901	110	18.0
ALA01-004	3517793.364	358103.254	67	3.0 U
ALA01-005	3517755.551	357999.838	28	3.0 U
ALA01-006	3517769.368	358021.720	59	3.0 U
ALA01-007	3517783.991	358043.928	60	3.0 U
ALA01-008	3517799.846	358065.872	50	3.0 U
ALA01-009	3517812.763	358087.309	71	3.0 U
ALA01-010	3517792.019	358008.161	85.2 JL	7.59
ALA01-011	3517806.312	358029.732	70	3.0 U
ALA01-012	3517822.266	358051.105	140 JL	6.8 JL
ALA01-013	3517834.684	358073.793	75.5 JL	8.66
ALA01-014	3517737.385	358019.613	29 JL	3.0 UJL
ALM01-001	3514332.595	360091.571	160	3.0 U
ALM01-002	3514356.863	360086.796	1800	3.0 U
ALM01-003	3514381.919	360077.464	140	3.0 U
ALM01-004	3514406.135	360071.313	86 JL	3.0 UJL
ALM02-005	3514416.859	360129.055	14 JL	3.0 UJL
ALM02-006	3514422.553	360141.197	3.5 JL	3.0 UJL
ARR01-001	3517636.282	359153.438	21	11
ARR01-002	3517145.620	358427.872	220 D	29
ARR01-003	3517584.199	359119.928	27	12
ARR01-004	3517296.848	358592.910	33	8.7
ARR01-005	3517190.395	358474.567	110	8.9
ARR01-006	3517531.049	359090.283	54	6.2
ARR01-007	3517476.113	359098.862	45	5.0 U
ARR01-008	3517368.728	358669.700	48	9.4
ARR01-009	3517417.858	359077.809	5.0 U	5.4
ARR01-010	3517360.410	359048.000	100	8.6
ARR01-011	3517309.131	359017.312	40	5.0 U
ARR01-012	3517261.534	358980.252	280 D	7.1
ARR01-013	3517215.446	358922.314	110	8.3
ARR01-014	3517206.238	358872.481	5.0 U	18
ARR01-015	3517200.590	358812.152	28	9.8
ARR01-016	3517409.969	358725.245	53	13
ARR01-017	3517427.747	358786.132	27	9.3
ARR01-018	3517178.407	358753.129	5.0 U	21
ARR01-019	3517141.500	358686.895	56	5.0
ARR01-020	3517058.458	358542.616	28.1 JL	18.5
ARR01-021	3517002.567	358475.116	25	5.0 U
ARR01-022	3516955.164	358389.952	360 D	20
ARR01-023	3517104.413	358489.732	170 D	5.7
ARR01-024	3517450.749	358843.891	130 D	13
ARR01-025	3517129.122	358533.999	420 D	15
ARR01-026	3517171.052	358596.152	5.0 U	10
ARR01-027	3517201.655	358638.294	5.7	15
ARR01-028	3517246.458	358668.477	64	6.8
ARR01-029	3517274.235	358720.103	250 D	14

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ARR01-031	3517483.928	358897.817	36 JL	7.8
ARR01-032	3517507.612	358954.548	136 JL	17
ARR01-033	3517543.254	359009.752	16 JL	8.6
ARR01-034	3517578.365	359050.623	32.0 JL	9.90
ARR01-035	3517315.856	358827.856	5.0 UJL	5.0 U
ARR01-036	3517363.477	358857.222	16 JL	5.0 U
ARR01-037	3517405.889	358897.173	18 JL	5.0 U
ARR01-038	3517634.141	359073.304	34.9 JL	14.3
ARR01-039	3517475.198	359039.589	9.5 JL	9.8
ARR01-040	3517421.342	358983.173	58 JL	5.0 U
ARR01-041	3517684.691	359102.750	8 JL	5.0 U
ARR01-042	3517640.284	359113.324	410 DJL	14
ARR01-043	3517540.236	359055.488	310 DJL	13
ARR01-044	3517739.922	359131.187	33 JL	5.0 U
ARR01-045	3517683.198	359151.340	18 JL	14
ARR01-046	3517786.525	359150.744	5.0 UJL	5.0 U
ARR01-047	3517739.159	359187.077	92 JL	8.6
ARR01-048	3517845.328	359167.833	27 JL	6.1
DON01-001	3515183.751	357050.164	13 JL	3.0 UJL
DON01-002	3515189.525	357029.635	13 JL	3.0 UJL
DON01-003	3515201.341	357045.083	14 JL	3.0 UJL
ELH01-001	3516370.797	359070.013	124 JL	10.1
ELH01-002	3516393.544	359083.395	87	6.19
ELH01-003	3516383.044	359046.478	40	3.16 J
ELH01-004	3516406.355	359058.547	120	3.0 U
ELH01-005	3516428.159	359069.726	37	8.74
ELH01-006	3516395.613	359022.641	68.6 JL	7.61
ELH01-007	3516418.393	359033.853	68	3.0 UJL
ELH01-008	3516441.773	359044.426	41	3.0 UJL
ELH01-009	3516431.051	359010.614	93	3.0 UJL
ELH01-010	3516453.204	359021.131	6.5	3.0 UJL
ELH01-011	3516478.348	359032.125	124	3.0 UJL
ELH01-012	3516440.208	358989.836	39	3.0 U
ELH01-013	3516465.128	358999.670	43	3.0 U
ELH01-014	3516489.719	359008.553	67	3.0 UJL
ELH01-015	3516477.645	358977.120	71	3.0 UJL
ELH01-016	3516502.508	358985.870	110 JL	3.0 UJL
ELH02-017	3516434.109	359087.686	47 JL	3.0 UJL
ELH02-018	3516466.210	359066.148	6.7	3.0 U
ELH02-019	3516511.291	359040.196	34 JL	3.0 UJL
ELH02-020	3516533.827	359018.552	49 JK	3.0 UJK
ELH03-021	3516513.355	358977.698	67 JK	3.0 UJL
ELH04-022	3516462.045	358931.219	22 JK	3.0 UJK
ELH04-023	3516465.286	358956.622	29	3.0 UJL
ELH04-024	3516489.900	358953.758	64 JK	3.0 UJL
ELH05-025	3516412.532	358918.192	50	3.0 UJL
ELH05-026	3516438.321	358918.931	67	3.0 UJL
ELH06-027	3516245.737	358781.004	99 JK	3.0 UJK
ELH07-028	3516246.125	359048.441	61 JK	3.0 UJL

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
ELH07-029	3516255.986	359073.371	92	3.0 UJL
ELH07-030	3516267.260	359017.969	17 JK	3.0 UJK
ELH07-031	3516271.957	359043.223	42 JK	3.0 UJK
ELH07-032	3516276.743	359069.833	63	3.0 UJL
ELH07-033	3516298.049	359039.316	66 JL	3.0 UJL
ELH07-034	3516302.781	359064.497	49 JK	3.0 UJK
ELH07-035	3516306.433	359090.435	65	3.0 U
ELH07-036	3516328.350	359060.684	82	3.0 UJL
ELH07-037	3516331.427	359086.645	35	3.0 UJL
ELH07-038	3516354.919	359080.665	59 JK	3.0 UJK
ELH08-039	3516304.736	358864.400	36 JL	3.0 UJL
ELH08-040	3516322.140	358883.579	21	3.0 UJL
ELH08-041	3516344.479	358897.121	18	3.0 UJL
ELH09-042	3516279.123	358917.359	31	3.0 UJL
ELH09-043	3516285.015	358942.457	83	3.0 UJL
ELH10-044	3516169.461	358933.494	96 JL	11 JL
ELH10-045	3516180.348	358956.155	71 JL	3.0 UJL
ELH10-046	3516190.401	358981.259	11 JK	3.0 UJK
ELH10-047	3516201.377	359007.123	60 JK	3.0 UJK
ELH10-048	3516182.543	358899.679	190	4.9 JL
ELH10-049	3516192.813	358922.992	4.7	3.0 UJL
ELH10-050	3516203.330	358946.753	21	3.0 UJL
ELH10-051	3516214.403	358970.540	18	3.0 UJL
ELH10-052	3516225.905	358994.785	24	3.0 UJL
ELH10-053	3516205.990	358887.413	11 JK	3.0 UJL
ELH10-054	3516217.074	358913.050	23	3.0 UJL
ELH10-055	3516228.100	358937.096	12 JK	3.0 UJL
ELH10-056	3516238.781	358959.746	21 JK	3.0 UJL
ELH10-057	3516228.669	358881.665	42 JK	3.0 UJK
ELH10-058	3516240.536	358903.037	250 JL	3.0 UJL
ELH10-059	3516253.228	358927.190	108 JK	3.0 UJL
ELH11-060	3516234.975	358774.689	220 JK	3.0 UJL
ELH15-067	3516131.916	358849.788	76	3.0 UJL
ELH16-068	3516150.286	358840.127	1500	3.0 U
ELH16-068A	3516150.286	358840.127	240 D	3.0 U
ELH16-068B	3516150.286	358840.127	160 D	3.0 U
ELH16-069	3516166.314	358827.351	227 JK	3.0 UJL
ELH16-070	3516189.134	358812.928	220	3.0 UJL
ELH17-071	3516207.413	358793.784	450 JK	3.0 UJL
EPL01-001	3514815.334	358817.916	130 D	3.0 U
EPL01-003	3514834.400	358803.541	250 D	3.0 U
EPL01-004	3514850.126	358791.759	432 JL	13.4
EPL01-005	3514845.156	358864.205	150 D	10 JH
EPL01-006	3514866.624	358775.722	170 D	3.0 U
EPL01-008	3514879.141	358786.087	190 D	3.0 U
EPL01-009	3514879.402	358803.394	160 D	3.0 U
EPL01-010	3514897.557	358845.246	470 D	13 JH
EPL01-011	3514906.305	358826.246	440 D	12
MES01-001	3517362.761	357538.231	41	3.0 U

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
MES01-002	3517399.887	357566.966	31	6.06
MES01-003	3517358.975	357511.835	37	3.0 U
MES01-004	3517375.327	357522.177	43	3.0
MES01-005	3517388.657	357529.670	55	3.0 U
MES01-006	3517383.460	357502.872	67	10.6
MES01-007	3517414.413	357519.316	370 D	10
MES01-008	3517428.582	357532.160	58	9.2
MES02-009	3517481.000	357528.768	94	3.0 U
MES02-010	3517447.487	357481.629	200 D	12
MES02-011	3517470.893	357483.709	480 D	14
MES03-012	3517455.350	357509.877	63	4.8
MES04-013	3517450.647	357550.408	330 D	5.2
MES05-014	3517475.030	357557.062	200 D	3.0 U
MES05-015	3517492.890	357562.404	330 D	11
MES05-016	3517506.304	357586.650	210 D	5.2
MES06-017	3517448.791	357651.817	270 D	7.1
MES06-018	3517480.914	357664.728	36	3.0 U
MES06-019	3517488.351	357690.724	17	3.0 U
MES06-020	3517506.512	357661.249	27	3.0 U
MES06-021	3517514.236	357681.314	37	3.0 U
MES06-022	3517522.141	357704.436	60	3.0 U
MES06-023	3517518.510	357629.130	16	3.0 U
MES06-024	3517528.586	357649.671	9.4	3.0 U
MES06-025	3517540.861	357672.804	13	3.0 U
MES07-026	3517459.307	357625.893	110	3.0 U
MES08-027	3517382.360	357622.368	110	10
MES08-028	3517410.713	357623.848	320 D	8.2
RSV01-001	3514104.050	359706.087	31	3.0 U
SMS01-004	3517976.227	355778.624	560 D	59
SMS01-005	3517991.413	355761.802	270 D	21
SMS01-006	3517991.304	355790.202	480 D	62
SMS01-007	3518015.947	355798.916	142 JL	18
SMS01-008	3518012.508	355775.731	140 D	14
SMS01-009	3518032.883	355800.097	240 D	24
SMS01-010	3518039.826	355781.000	68	5.0 U
SMS01-011	3518075.690	355792.027	120	16
SMS01-012	3518062.190	355785.276	69	4.4
SMS01-013	3518136.186	355835.575	170 D	4.9
SMS01-014	3518146.701	355847.556	220 DJK	16 JK
SMS01-015	3518172.072	355869.970	70 JK	8.7 JK
SMS01-016	3518177.153	355881.645	43 JK	3.0 UJK
SMS01-017	3518195.309	355893.239	120 JK	5.0 UJK
SMS01-018	3518209.171	355921.168	19 JK	3.0 UJK
SMS01-019	3518233.061	355951.979	25 JK	3 UJK
SMS01-025	3518064.311	355832.889	260 DJK	34 JK
SMS01-026	3518076.570	355838.173	850 DJK	28 JK
SMS01-027	3518058.486	355848.272	180 DJK	23 JK
SMS01-028	3518054.009	355837.596	240 DJK	28 JK
SMS01-029	3517984.588	355847.039	210 D	22

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP01-001	3517447.611	356936.323	26	8.4
UTP01-002	3517381.639	356944.744	170 D	32.7
UTP01-003	3517482.487	356847.341	590 D	51
UTP01-004	3517500.301	356812.312	400 D	39
UTP01-005	3517388.110	356874.319	480 D	37
UTP01-006	3517393.037	356821.880	420 D	34
UTP02-007	3517337.395	356880.502	3.0 U	3.0 U
UTP02-008	3517340.802	356913.175	3.0 U	3.0 U
UTP02-009	3517293.736	356919.550	10.8 JL	3.0 U
UTP02-010	3517289.701	356885.908	5.0 U	3.0 U
UTP03-011	3517276.715	357051.261	8.1	3.0 U
UTP03-012	3517303.746	357094.578	7.3	3.0 U
UTP03-013	3517221.706	357089.775	11	3.0 U
UTP03-014	3517250.041	357132.083	7.0	3.0 U
UTP04-015	3516498.144	357637.360	23	3.0 U
UTP04-016	3516487.230	357644.372	24	3.0 U
UTP04-017	3516472.597	357656.581	25	3.0 U
UTP04-018	3516462.181	357640.401	22	3.0 U
UTP04-019	3516488.238	357619.741	22	3.0 U
UTP05-020	3516383.406	357349.140	220 D	6.4 JH
UTP05-021	3516388.798	357373.655	450 D	15 JH
UTP05-022	3516391.036	357402.997	54	3.0 U
UTP05-023	3516394.001	357431.198	95	5.0 U
UTP05-024	3516396.236	357458.452	490 D	18 JH
UTP05-025	3516414.529	357343.005	120 D	5.0 U
UTP05-026	3516416.472	357370.336	220 D	5.0 U
UTP05-027	3516417.433	357400.219	590 D	24 JH
UTP05-028	3516417.568	357427.762	240 D	6.6 JH
UTP05-029	3516418.529	357455.487	190 D	5.3 JH
UTP06-030	3515964.220	357470.987	1400 D	51
UTP06-031	3515962.933	357491.359	890 D	20
UTP06-032	3515998.259	357478.335	1100 D	38
UTP06-033	3516001.008	357523.003	420 D	13
UTP06-034	3515975.106	357507.068	650 D	40
UTP06-035	3516012.260	357497.256	610 D	21
UTP07-036	3516148.332	357455.548	850 D	23
UTP07-037	3516157.913	357461.485	270 D	9.2
UTP07-038	3516170.422	357451.621	1500 D	49
UTP08-039	3515926.805	357396.820	390 D	8.5
UTP08-040	3515934.715	357417.618	310 D	6.0 U
UTP09-041	3515893.420	357490.688	750 D	33.0
UTP09-042	3515899.201	357474.880	810 D	17
UTP09-043	3515908.937	357497.044	850 D	38
UTP09-044	3515915.094	357472.369	520 D	20
UTP10-045	3515931.909	357633.807	150 D	3.0 U
UTP10-046	3515949.310	357637.952	140 D	3.0 U
UTP11-047	3515766.910	357703.953	140 D	3.0 U
UTP11-048	3515783.557	357689.120	291 JL	11.9
UTP11-049	3515802.568	357678.262	64	3.0 U

Table N-1
All Locations
Maximum Concentrations by Station
El Paso County Metals Survey

Station Identification	Northing	Easting	Lead (mg/Kg)	Arsenic (mg/Kg)
UTP12-050	3515696.617	357735.841	170 DJK	5.7
UTP12-051	3515681.175	357702.853	320 DJK	11
UTP12-052	3515692.820	357708.945	63 JK	3.0 U
UTP12-053	3515704.890	357712.434	210 DJK	15 U
UTP12-054	3515696.638	357692.291	160 DJK	7.5
UTP12-055	3515718.398	357744.711	120 DJK	3.0 U
UTP12-056	3515723.505	357734.960	190 DJK	5.0 U
UTP12-057	3515714.745	357741.687	235 JL	16
UTP13-058	3515615.309	357466.993	10 JK	3.0 U
UTP13-059	3515650.195	357467.117	27 JK	3.0 U
UTP13-060	3515665.665	357468.464	26	3.0 U
UTP13-061	3515679.101	357467.113	25	3.0 U
VIL01-001	3515003.680	357851.438	320 D	3.0 U
VIL02-002	3514992.698	357881.504	110	3.0 U
VIL03-003	3514948.454	357881.504	110	3.0 U
VIL04-004	3514932.944	357849.211	320 D	5.1
VIL05-005	3514888.678	357900.028	6.57 JL	3.0 U
VIL05-006	3514881.595	357884.323	3.0 U	3.0 U
VIL05-007	3514891.711	357893.502	11	3.0 U
VIL05-008	3514902.855	357898.967	10	3.0 U
VIL05-009	3514888.692	357872.296	7.6	3.0 U
VIL05-010	3514899.578	357879.555	32	3.0 U
VIL05-011	3514908.416	357887.602	53	3.0 U

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ALA01-001	ALA01-001-51-01	0.0	61 JL	3.0 UJL								
ALA01-001	ALA01-001-51-02	6.0	7.2 JL	3.0 UJL								
ALA01-002	ALA01-002-51-01	0.0	9.3	3.0 U								
ALA01-002	ALA01-002-51-02	6.0	190	3.0 U								
ALA01-003	ALA01-003-51-01	0.0	110	3.0 U								
ALA01-003	ALA01-003-51-02	6.0	21	3.0 U			37.9 JL	18.0			-57.39	-142.9
ALA01-004	ALA01-004-51-01	0.0	67	3.0 U								
ALA01-004	ALA01-004-51-02	6.0	66	3.0 U								
ALA01-005	ALA01-005-51-01	0.0	28	3.0 U	28	3.0 U			0.00	0.00		
ALA01-005	ALA01-005-51-02	6.0	10	3.0 U								
ALA01-006	ALA01-006-51-01	0.0	59	3.0 U								
ALA01-006	ALA01-006-51-02	6.0	3.0 U	3.0 U								
ALA01-007	ALA01-007-51-01	0.0	60	3.0 U								
ALA01-007	ALA01-007-51-02	6.0	32	3.0 U								
ALA01-008	ALA01-008-51-01	0.0	50	3.0 U								
ALA01-008	ALA01-008-51-02	6.0	8.6	3.0 U	11	3.0 U			-24.49	0.00		
ALA01-009	ALA01-009-51-01	0.0	71	3.0 U								
ALA01-009	ALA01-009-51-02	6.0	32	3.0 U								
ALA01-010	ALA01-010-51-01	0.0	63	3.0 U			85.2 JL	7.59			-29.96	-86.69
ALA01-010	ALA01-010-51-02	6.0	42	3.0 U								
ALA01-011	ALA01-011-51-01	0.0	70	3.0 U								
ALA01-011	ALA01-011-51-02	6.0	18	3.0 U	27	3.0 U			-40.00	0.00		
ALA01-012	ALA01-012-51-01	0.0	105 JL	3.0 UJL								
ALA01-012	ALA01-012-51-02	6.0	140 JL	6.8 JL								
ALA01-013	ALA01-013-51-01	0.0	53 JL	3.0 UJL								
ALA01-013	ALA01-013-51-02	6.0	39 JL	3.0 UJL			75.5 JL	8.66			-63.76	-97.08
ALA01-014	ALA01-014-51-01	0.0	29 JL	3.0 UJL								
ALA01-014	ALA01-014-51-02	6.0	9.5 JL	3.0 UJL								
ALM01-001	ALM01-001-51-01	0.0	110	3.0 U								
ALM01-001	ALM01-001-51-02	6.0	160	3.0 U								
ALM01-002	ALM01-002-51-01	0.0	328	3.0 U								
ALM01-002	ALM01-002A-51-01	0.0	280 D	3.0 U								
ALM01-002	ALM01-002-51-02	6.0	1800	3.0 U								
ALM01-002	ALM01-002A-51-02	6.0	130 D	3.0 U								
ALM01-002	ALM01-002-51-03	12.0	3.0 U	3.0 U								
ALM01-003	ALM01-003-51-01	0.0	140	3.0 U								
ALM01-003	ALM01-003-51-02	6.0	23	3.0 U								
ALM01-004	ALM01-004-51-01	0.0	86 JL	3.0 UJL								
ALM01-004	ALM01-004-51-02	6.0	73 JL	3.0 UJL								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ALM02-005	ALM02-005-51-01	0.0	14 JL	3.0 UJL								
ALM02-005	ALM02-005-51-02	6.0	3.0 UJL	3.0 UJL								
ALM02-006	ALM02-006-51-01	0.0	3.5 JL	3.0 UJL								
ALM02-006	ALM02-006-51-02	6.0	3.0 UJL	3.0 UJL								
ARR01-001	ARR01-001-51-01	0.0	21	11								
ARR01-001	ARR01-001-51-02	6.0	6.5	5.0 U								
ARR01-002	ARR01-002-51-01	0.0	200 D	28								
ARR01-002	ARR01-002-51-02	6.0	220 D	29	120 JL	18			58.82	46.81		
ARR01-003	ARR01-003-51-01	0.0	27	12								
ARR01-003	ARR01-003-51-02	6.0	5.0 U	7.1			4.60 JL	10.6			8.33	-39.55
ARR01-004	ARR01-004-51-01	0.0	33	8.7	31 JL	5.0 U			6.25	54.01		
ARR01-004	ARR01-004-51-02	6.0	5.0 U	5.0 U								
ARR01-005	ARR01-005-51-01	0.0	110	8.3	96 JL	8.9			13.59	-6.98		
ARR01-005	ARR01-005-51-02	6.0	13	5.0 U								
ARR01-006	ARR01-006-51-01	0.0	54	6.2								
ARR01-006	ARR01-006-51-02	6.0	15	5.0 U								
ARR01-007	ARR01-007-51-01	0.0	45	5.0 U								
ARR01-007	ARR01-007-51-02	6.0	5.0 U	5.0 U								
ARR01-008	ARR01-008-51-01	0.0	48	9.4								
ARR01-008	ARR01-008-51-02	0.0	27	9.0								
ARR01-009	ARR01-009-51-01	0.0	5.0 U	5.4								
ARR01-009	ARR01-009-51-02	6.0	5.0 U	5.0 U								
ARR01-010	ARR01-010-51-01	0.0	100	7.8								
ARR01-010	ARR01-010-51-02	6.0	6.1	8.6								
ARR01-011	ARR01-011-51-01	0.0	10	5.0 U								
ARR01-011	ARR01-011-51-02	6.0	40	5.0 U								
ARR01-012	ARR01-012-51-01	0.0	66	5.0 U								
ARR01-012	ARR01-012-51-02	6.0	280 D	7.1								
ARR01-013	ARR01-013-51-01	0.0	110	8.3								
ARR01-013	ARR01-013-51-02	6.0	8.8	5.0 U								
ARR01-014	ARR01-014-51-01	0.0	5.0 U	18								
ARR01-014	ARR01-014-51-02	6.0	<5.0	5.0 U								
ARR01-015	ARR01-015-51-01	0.0	28	9.8	28 JL	9.4			0.00	4.17		
ARR01-015	ARR01-015-51-02	6.0	5.7	5.0 U								
ARR01-016	ARR01-016-51-01	0.0	53	13								
ARR01-016	ARR01-016-51-02	6.0	13	5.0								
ARR01-017	ARR01-017-51-01	0.0	24	9.3								
ARR01-017	ARR01-017-51-02	6.0	27	6.9								
ARR01-018	ARR01-018-51-01	0.0	5.0 U	21								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ARR01-018	ARR01-018-51-02	6.0	5.0 U	5.0 U								
ARR01-019	ARR01-019-51-01	0.0	56	5.0								
ARR01-019	ARR01-019-51-02	6.0	5.0 U	5.0 U								
ARR01-020	ARR01-020-51-01	0.0	28	12			28.1 JL	18.5			-0.36	-42.62
ARR01-020	ARR01-020-51-02	6.0	5.0 U	5.0 U								
ARR01-021	ARR01-021-51-01	0.0	25	5.0 U								
ARR01-021	ARR01-021-51-02	6.0	5.0 U	5.0 U								
ARR01-022	ARR01-022-51-01	0.0	360 D	20								
ARR01-022	ARR01-022-51-02	6.0	82	6.2								
ARR01-023	ARR01-023-51-01	0.0	170 D	5.0 U								
ARR01-023	ARR01-023-51-02	6.0	68	5.7								
ARR01-024	ARR01-024-51-01	0.0	130 D	13								
ARR01-024	ARR01-024-51-02	6.0	13	5.5								
ARR01-025	ARR01-025-51-01	0.0	420 D	15								
ARR01-025	ARR01-025-51-02	6.0	42	5.0 U								
ARR01-026	ARR01-026-51-01	0.0	5.0 U	10								
ARR01-026	ARR01-026-51-02	6.0	5.0 U	8.1								
ARR01-027	ARR01-027-51-01	0.0	5.7	15								
ARR01-028	ARR01-028-51-01	0.0	64	6.8								
ARR01-028	ARR01-028-51-02	6.0	5.0 U	5.0 U								
ARR01-029	ARR01-029-51-01	0.0	250 D	14								
ARR01-031	ARR01-031-51-01	0.0	36 JL	7.8								
ARR01-031	ARR01-031-51-02	6.0	5.0 UJL	5.0 U								
ARR01-032	ARR01-032-51-01	0.0	100 JL	12			136 JL	15.1			-30.51	-22.88
ARR01-032	ARR01-032-51-02	6.0	7.1 JL	17								
ARR01-033	ARR01-033-51-01	0.0	16 JL	8.6								
ARR01-033	ARR01-033-51-02	6.0	5.0 UJL	5.0 U	5.0 UJL	5.0 U			0.00	0.00		
ARR01-034	ARR01-034-51-01	0.0	20 JL	5.0 U								
ARR01-034	ARR01-034-51-02	6.0	29 JL	5.0 U			32.0 JL	9.90			-9.84	-65.77
ARR01-035	ARR01-035-51-01	0.0	5.0 UJL	5.0 U								
ARR01-036	ARR01-036-51-01	0.0	16 JL	5.0 U								
ARR01-036	ARR01-036-51-02	6.0	5.0 UJL	5.0 U								
ARR01-037	ARR01-037-51-01	0.0	18 JL	5.0 U								
ARR01-038	ARR01-038-51-01	0.0	23 JL	6.3			34.9 JL	14.3			-41.11	-77.67
ARR01-038	ARR01-038-51-02	6.0	5.0 UJL	5.0 U								
ARR01-039	ARR01-039-51-01	0.0	6.5 JL	9.8								
ARR01-039	ARR01-039-51-02	6.0	9.5 JL	5.0 U								
ARR01-040	ARR01-040-51-01	0.0	40 JL	5.0 U								
ARR01-040	ARR01-040-51-02	6.0	58 JL	5.0 U								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ARR01-041	ARR01-041-51-01	0.0	8 JL	5.0 U								
ARR01-041	ARR01-041-51-02	6.0	5.0 UJL	5.0 U								
ARR01-042	ARR01-042-51-01	0.0	410 DJL	14								
ARR01-042	ARR01-042-51-02	6.0	9 JL	5.2								
ARR01-043	ARR01-043-51-01	0.0	310 DJL	13								
ARR01-043	ARR01-043-51-02	6.0	14 JL	5.0 U								
ARR01-044	ARR01-044-51-01	0.0	33 JL	5.0 U								
ARR01-044	ARR01-044-51-02	6.0	24 JL	5.0 U								
ARR01-045	ARR01-045-51-01	0.0	18 JL	14								
ARR01-045	ARR01-045-51-02	6.0	5.0 UJL	5.0 U								
ARR01-046	ARR01-046-51-01	0.0	5.0 UJL	5.0 U								
ARR01-046	ARR01-046-51-02	6.0	5.0 UJL	5.0 U								
ARR01-047	ARR01-047-51-01	0.0	92 JL	8.6								
ARR01-047	ARR01-047-51-02	6.0	6.4 JL	5.0 U								
ARR01-048	ARR01-048-51-01	0.0	27 JL	6.1								
DON01-001	DON01-001-51-01	0.0	13 JL	3.0 UJL								
DON01-001	DON01-001-51-02	6.0	5.7 JL	3.0 UJL								
DON01-002	DON01-002-51-01	0.0	13 JL	3.0 UJL								
DON01-002	DON01-002-51-02	6.0	5.8 JL	3.0 UJL								
DON01-003	DON01-003-51-01	0.0	14 JL	3.0 UJL								
DON01-003	DON01-003-51-02	6.0	7.2 JL	3.0 UJL								
ELH01-001	ELH01-001-51-01	0.0	40	3.0 UJL	40	3.0 U	124 JL	10.1	0.00	0.00	-102.4	-108.4
ELH01-001	ELH01-001-51-02	6.0	56	3.0 UJL	87	3.0 U			-43.36	0.00		
ELH01-002	ELH01-002-51-01	0.0	45 JL	3.0 UJL	87	3.0 U	71.2 JL	4.93 J	-63.64	0.00	-45.09	-48.68
ELH01-002	ELH01-002-51-02	6.0	4.3 JL	3.0 UJL			6.08 JL	6.19			-34.30	-69.42
ELH01-003	ELH01-003-51-01	0.0	24	3.0 U	28	3.0 U	25.5 JL	3.16 J	-15.38	0.00	-6.06	-5.19
ELH01-003	ELH01-003-51-02	6.0	40	3.0 U	36	3.0 U			10.53	0.00		
ELH01-004	ELH01-004-51-01	0.0	16 JL	3.0 UJL								
ELH01-004	ELH01-004-51-02	6.0	98 JL	3.0 UJL	120	3.0 U			-20.18	0.00		
ELH01-005	ELH01-005-51-01	0.0	37	3.0 UJL								
ELH01-005	ELH01-005-51-02	6.0	11	3.0 UJL			17.7 JL	8.74			-46.69	-97.79
ELH01-006	ELH01-006-51-01	0.0	45	3.0 UJL	57	3.0 U	68.6 JL	6.13	-23.53	0.00	-41.55	-68.57
ELH01-006	ELH01-006-51-02	6.0	3.0 U	3.0 UJL			14.8 JL	7.61			-132.6	-86.90
ELH01-007	ELH01-007-51-01	0.0	16	3.0 UJL								
ELH01-007	ELH01-007-51-02	6.0	68	3.0 UJL								
ELH01-008	ELH01-008-51-01	0.0	41	3.0 UJL								
ELH01-008	ELH01-008-51-02	6.0	37	3.0 UJL								
ELH01-009	ELH01-009-51-01	0.0	93	3.0 UJL								
ELH01-009	ELH01-009-51-02	6.0	3.0 U	3.0 UJL								

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Summary of Analytical Results by Station and Depth
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Station	Original Sample	Sample Depth	AES				Xenco		Duplicate		Split	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH01-010	ELH01-010-51-01	0.0	6.5	3.0 UJL								
ELH01-010	ELH01-010-51-02	6.0	3.0 U	3.0 UJL								
ELH01-011	ELH01-011-51-01	0.0	14	3.0 UJL								
ELH01-011	ELH01-011-51-02	6.0	124	3.0 UJL								
ELH01-012	ELH01-012-51-01	0.0	39	3.0 U								
ELH01-012	ELH01-012-51-02	6.0	34	3.0 U								
ELH01-013	ELH01-013-51-01	0.0	43	3.0 U								
ELH01-013	ELH01-013-51-02	6.0	33	3.0 U								
ELH01-014	ELH01-014-51-01	0.0	67	3.0 UJL								
ELH01-014	ELH01-014-51-02	6.0	7.2	3.0 UJL								
ELH01-015	ELH01-015-51-01	0.0	71	3.0 UJL								
ELH01-015	ELH01-015-51-02	6.0	3.0 U	3.0 UJL								
ELH01-016	ELH01-016-51-01	0.0	110 JL	3.0 UJL								
ELH01-016	ELH01-016-51-02	6.0	16 JL	3.0 UJL								
ELH02-017	ELH02-017-51-01	0.0	47 JL	3.0 UJL								
ELH02-017	ELH02-017-51-02	6.0	16 JL	3.0 UJL								
ELH02-018	ELH02-018-51-01	0.0	6.7	3.0 U								
ELH02-018	ELH02-018-51-02	6.0	3.0 U	3.0 U								
ELH02-019	ELH02-019-51-01	0.0	34 JL	3.0 UJL								
ELH02-019	ELH02-019-51-02	6.0	3.0 UJL	3.0 UJL								
ELH02-020	ELH02-020-51-01	0.0	49 JK	3.0 UJK								
ELH02-020	ELH02-020-51-02	6.0	9.7 JK	3.0 UJK								
ELH03-021	ELH03-021-51-01	0.0	67 JK	3.0 UJL								
ELH03-021	ELH03-021-51-02	6.0	6.7 JK	3.0 UJL								
ELH04-022	ELH04-022-51-01	0.0	22 JK	3.0 UJK								
ELH04-022	ELH04-022-51-02	6.0	4.0 JK	3.0 UJK								
ELH04-023	ELH04-023-51-01	0.0	29	3.0 UJL								
ELH04-023	ELH04-023-51-02	6.0	21	3.0 UJL								
ELH04-024	ELH04-024-51-01	0.0	64 JK	3.0 UJL								
ELH04-024	ELH04-024-51-02	6.0	51 JK	3.0 UJL								
ELH05-025	ELH05-025-51-01	0.0	50	3.0 UJL								
ELH05-025	ELH05-025-51-02	6.0	3.0 U	3.0 UJL								
ELH05-026	ELH05-026-51-01	0.0	67	3.0 UJL								
ELH05-026	ELH05-026-51-02	6.0	3.0 U	3.0 UJL								
ELH06-027	ELH06-027-51-01	0.0	30 JK	3.0 UJK								
ELH06-027	ELH06-027-51-02	6.0	99 JK	3.0 UJK								
ELH07-028	ELH07-028-51-01	0.0	61 JK	3.0 UJL								
ELH07-028	ELH07-028-51-02	6.0	3.0 UJK	3.0 UJL								
ELH07-029	ELH07-029-51-01	0.0	92	3.0 UJL								

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All Locations
Summary of Analytical Results by Station and Depth
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Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH07-029	ELH07-029-51-02	6.0	3.0 U	3.0 UJL								
ELH07-030	ELH07-030-51-01	0.0	17 JK	3.0 UJK								
ELH07-030	ELH07-030-51-02	6.0	7.4 JK	3.0 UJK								
ELH07-031	ELH07-031-51-01	0.0	42 JK	3.0 UJK								
ELH07-031	ELH07-031-51-02	6.0	3.0 UJK	3.0 UJK								
ELH07-032	ELH07-032-51-01	0.0	63	3.0 UJL								
ELH07-032	ELH07-032-51-02	6.0	14	3.0 UJL								
ELH07-033	ELH07-033-51-01	0.0	66 JL	3.0 UJL								
ELH07-033	ELH07-033-51-02	6.0	55 JL	3.0 UJL								
ELH07-034	ELH07-034-51-01	0.0	49 JK	3.0 UJK								
ELH07-034	ELH07-034-51-02	6.0	4.0 JK	3.0 UJK								
ELH07-035	ELH07-035-51-01	0.0	65	3.0 U								
ELH07-035	ELH07-035-51-02	6.0	3.0 U	3.0 U								
ELH07-036	ELH07-036-51-01	0.0	82	3.0 UJL								
ELH07-036	ELH07-036-51-02	6.0	14	3.0 UJL								
ELH07-037	ELH07-037-51-01	0.0	35	3.0 UJL								
ELH07-037	ELH07-037-51-02	6.0	4.3	3.0 UJL								
ELH07-038	ELH07-038-51-01	0.0	59 JK	3.0 UJK								
ELH07-038	ELH07-038-51-02	6.0	8.3 JK	3.0 UJK								
ELH08-039	ELH08-039-51-01	0.0	36 JL	3.0 UJL								
ELH08-039	ELH08-039-51-02	6.0	3.0 UJL	3.0 UJL								
ELH08-040	ELH08-040-51-01	0.0	21	3.0 UJL								
ELH08-040	ELH08-040-51-02	6.0	3.0 U	3.0 UJL								
ELH08-041	ELH08-041-51-01	0.0	18	3.0 UJL								
ELH08-041	ELH08-041-51-02	6.0	3.0 U	3.0 UJL								
ELH09-042	ELH09-042-51-01	0.0	31	3.0 UJL								
ELH09-042	ELH09-042-51-02	6.0	3.0 U	3.0 UJL								
ELH09-043	ELH09-043-51-01	0.0	14	3.0 UJL								
ELH09-043	ELH09-043-51-02	6.0	83	3.0 UJL								
ELH10-044	ELH10-044-51-01	0.0	41 JL	3.0 UJL								
ELH10-044	ELH10-044-51-02	6.0	96 JL	11 JL								
ELH10-045	ELH10-045-51-01	0.0	55 JL	3.0 UJL								
ELH10-045	ELH10-045-51-02	6.0	71 JL	3.0 UJL								
ELH10-046	ELH10-046-51-01	0.0	8.1 JK	3.0 UJK								
ELH10-046	ELH10-046-51-02	6.0	11 JK	3.0 UJK								
ELH10-047	ELH10-047-51-01	0.0	60 JK	3.0 UJK								
ELH10-047	ELH10-047-51-02	6.0	54 JK	3.0 UJK								
ELH10-048	ELH10-048-51-01	0.0	21	3.0 UJL								
ELH10-048	ELH10-048-51-02	6.0	190	4.9 JL								

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Summary of Analytical Results by Station and Depth
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Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg)		AES Duplicate (mg/Kg)		Xenco Split (mg/Kg)		Duplicate RPD (%)		Split RPD (%)	
			Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
ELH10-049	ELH10-049-51-01	0.0	3.0 U	3.0 UJL								
ELH10-049	ELH10-049-51-02	6.0	4.7	3.0 UJL								
ELH10-050	ELH10-050-51-01	0.0	3.0 U	3.0 UJL								
ELH10-050	ELH10-050-51-02	6.0	21	3.0 UJL								
ELH10-051	ELH10-051-51-01	0.0	3.0 U	3.0 UJL								
ELH10-051	ELH10-051-51-02	6.0	18	3.0 UJL								
ELH10-052	ELH10-052-51-01	0.0	24	3.0 UJL								
ELH10-052	ELH10-052-51-02	6.0	16	3.0 UJL								
ELH10-053	ELH10-053-51-01	0.0	11 JK	3.0 UJL								
ELH10-053	ELH10-053-51-02	6.0	6.5 JK	3.0 UJL								
ELH10-054	ELH10-054-51-01	0.0	3.0 U	3.0 UJL								
ELH10-054	ELH10-054-51-02	6.0	23	3.0 UJL								
ELH10-055	ELH10-055-51-01	0.0	3.0 UJK	3.0 UJL								
ELH10-055	ELH10-055-51-02	6.0	12 JK	3.0 UJL								
ELH10-056	ELH10-056-51-01	0.0	20 JK	3.0 UJL								
ELH10-056	ELH10-056-51-02	6.0	21 JK	3.0 UJL								
ELH10-057	ELH10-057-51-01	0.0	3.0 UJK	3.0 UJK								
ELH10-057	ELH10-057-51-02	6.0	42 JK	3.0 UJK								
ELH10-058	ELH10-058-51-01	0.0	5.7 JL	3.0 UJL								
ELH10-058	ELH10-058-51-02	6.0	250 JL	3.0 UJL								
ELH10-059	ELH10-059-51-01	0.0	3.6 JK	3.0 UJL								
ELH10-059	ELH10-059-51-02	6.0	108 JK	3.0 UJL								
ELH11-060	ELH11-060-51-01	0.0	220 JK	3.0 UJL								
ELH11-060	ELH11-060-51-02	6.0	40 JK	3.0 UJL								
ELH15-067	ELH15-067-51-01	0.0	76	3.0 UJL								
ELH15-067	ELH15-067-51-02	6.0	14	3.0 UJL								
ELH16-068	ELH16-068-51-01	0.0	1500	3.0 UJL								
ELH16-068	ELH16-068-51-02	6.0	200	3.0 UJL								
ELH16-068	ELH16-068-51-03	12.0	100	3.0 U								
ELH16-068A	ELH16-068A-51-01	0.0	170 D	3.0 U	170 D	3.0 U			0.00	0.00		
ELH16-068A	ELH16-068A-51-02	6.0	240 D	3.0 U								
ELH16-068B	ELH16-068B-51-01	0.0	140 D	3.0 U								
ELH16-068B	ELH16-068B-51-02	6.0	160 D	3.0 U								
ELH16-069	ELH16-069-51-01	0.0	122 JK	3.0 UJL								
ELH16-069	ELH16-069-51-02	6.0	227 JK	3.0 UJL								
ELH16-070	ELH16-070-51-01	0.0	110	3.0 UJL								
ELH16-070	ELH16-070-51-02	6.0	220	3.0 UJL								
ELH17-071	ELH17-071-51-01	0.0	450 JK	3.0 UJL								
ELH17-071	ELH17-071-51-02	6.0	120 JK	3.0 UJL								

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Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
EPL01-001	EPL01-001-51-01	0.0	130 D	3.0 U								
EPL01-001	EPL01-001-51-02	6.0	120	3.0 U								
EPL01-003	EPL01-003-51-01	0.0	250 D	3.0 U								
EPL01-003	EPL01-003-51-02	6.0	54	3.0 U								
EPL01-004	EPL01-004-51-01	0.0	310 D	3.0 U			432 JL	13.4			-32.88	-126.8
EPL01-004	EPL01-004-51-02	6.0	120	3.0 U								
EPL01-005	EPL01-005-51-01	0.0	120 D	3.0 U								
EPL01-005	EPL01-005-51-02	6.0	150 D	10 JH								
EPL01-006	EPL01-006-51-01	0.0	170 D	3.0 U								
EPL01-006	EPL01-006-51-02	6.0	45	3.0 U								
EPL01-008	EPL01-008-51-01	0.0	98 D	3.0 U	190 D	3.0 U			-63.89	0.00		
EPL01-008	EPL01-008-51-02	6.0	37	3.0 U								
EPL01-009	EPL01-009-51-01	0.0	100	3.0 U								
EPL01-009	EPL01-009-51-02	6.0	160 D	3.0 U								
EPL01-010	EPL01-010-51-01	0.0	330 D	3.0 U								
EPL01-010	EPL01-010-51-02	6.0	470 D	13 JH								
EPL01-011	EPL01-011-51-01	0.0	350 D	9.3								
EPL01-011	EPL01-011-51-02	6.0	440 D	12								
MES01-001	MES01-001-51-01	0.0	16	3.0 U								
MES01-001	MES01-001-51-02	6.0	41	3.0 U								
MES01-002	MES01-002-51-01	0.0	26	3.0 U			22.2 JL	6.06			15.77	-67.55
MES01-002	MES01-002-51-02	6.0	31	3.0 U								
MES01-003	MES01-003-51-01	0.0	37	3.0 U								
MES01-003	MES01-003-51-02	6.0	3.0 U	3.0 U								
MES01-004	MES01-004-51-01	0.0	43	3								
MES01-004	MES01-004-51-02	6.0	28	3.0 U								
MES01-005	MES01-005-51-01	0.0	55	3.0 U								
MES01-005	MES01-005-51-02	6.0	16	3.0 U								
MES01-006	MES01-006-51-01	0.0	67	5.1								
MES01-006	MES01-006-51-02	6.0	18	7.1			19.4 JL	10.6			-7.49	-39.55
MES01-007	MES01-007-51-01	0.0	51	3.0 U								
MES01-007	MES01-007-51-02	6.0	370 D	10								
MES01-008	MES01-008-51-01	0.0	34	3.0 U								
MES01-008	MES01-008-51-02	6.0	58	9.2								
MES02-009	MES02-009-51-01	0.0	94	3.0 U								
MES02-009	MES02-009-51-02	6.0	11	3.0 U								
MES02-010	MES02-010-51-01	0.0	200 D	10								
MES02-010	MES02-010-51-02	6.0	21	12			15.1 JL	8.59			32.69	33.12
MES02-011	MES02-011-51-01	0.0	480 D	14								

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El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
MES02-011	MES02-011-51-02	6.0	23	3.0 U								
MES03-012	MES03-012-51-01	0.0	63	4.8								
MES03-012	MES03-012-51-02	6.0	36	4.6	39	3.0 U			-8.00	42.11		
MES04-013	MES04-013-51-01	0.0	330 D	5.2								
MES04-013	MES04-013-51-02	6.0	24	3.0 U								
MES05-014	MES05-014-51-01	0.0	200 D	3.0 U								
MES05-014	MES05-014-51-02	6.0	83	3.0 U								
MES05-015	MES05-015-51-01	0.0	330 D	11								
MES05-015	MES05-015-51-02	6.0	41	3.0 U								
MES05-016	MES05-016-51-01	0.0	210 D	5.2								
MES05-016	MES05-016-51-02	6.0	80	3.0 U								
MES06-017	MES06-017-51-01	0.0	27	3.0 U								
MES06-017	MES06-017-51-02	6.0	270 D	7.1								
MES06-018	MES06-018-51-01	0.0	36	3.0 U								
MES06-018	MES06-018-51-02	6.0	13	3.0 U								
MES06-019	MES06-019-51-01	0.0	17	3.0 U								
MES06-019	MES06-019-51-02	6.0	15	3.0 U								
MES06-020	MES06-020-51-01	0.0	18	3.0 U	27	3.0 U			-40.00	0.00		
MES06-020	MES06-020-51-02	6.0	14	3.0 U								
MES06-021	MES06-021-51-01	0.0	11	3.0 U								
MES06-021	MES06-021-51-02	6.0	37	3.0 U								
MES06-022	MES06-022-51-01	0.0	60	3.0 U								
MES06-022	MES06-022-51-02	6.0	3.0 U	3.0 U	3.0 UJL	3.0 UJK			0.00	0.00		
MES06-023	MES06-023-51-01	0.0	11	3.0 U								
MES06-023	MES06-023-51-02	6.0	16	3.0 U								
MES06-024	MES06-024-51-01	0.0	9.4	3.0 U								
MES06-024	MES06-024-51-02	6.0	3.0 U	3.0 U								
MES06-025	MES06-025-51-01	0.0	13	3.0 U								
MES06-025	MES06-025-51-02	6.0	3.0 U	3.0 U								
MES07-026	MES07-026-51-01	0.0	110	3.0 U								
MES07-026	MES07-026-51-02	6.0	21	3.0 U								
MES08-027	MES08-027-51-01	0.0	62	3.0 U								
MES08-027	MES08-027-51-02	6.0	110	10								
MES08-028	MES08-028-51-01	0.0	320 D	8.2								
MES08-028	MES08-028-51-02	6.0	18	3.0 U								
RSV01-001	RVS01-001-51-01	0.0	21	3.0 U								
RSV01-001	RVS01-001-51-02	6.0	31	3.0 U								
SMS01-004	SMS01-004-51-01-3F	0.0	220 D	26								
SMS01-004	SMS01-004-51-02-3F	6.0	560 D	59								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
SMS01-005	SMS01-005-51-01-3B	0.0	111	16								
SMS01-005	SMS01-005-51-02-3B	6.0	270 D	21								
SMS01-006	SMS01-006-51-01-4F	0.0	200 D	22								
SMS01-006	SMS01-006-51-02-4F	6.0	480 D	62								
SMS01-007	SMS01-007-51-01-6F	0.0	140 D	18								
SMS01-007	SMS01-007-51-02-6F	6.0	95	6.7			142 JL	17.2			-39.66	-87.87
SMS01-008	SMS01-008-51-01-6B	0.0	140 D	14								
SMS01-009	SMS01-009-51-01-7F	0.0	190 D	24	240 D	23			-23.26	4.26		
SMS01-009	SMS01-009-51-02-7F	6.0	150 D	13	180 D	10			-18.18	26.09		
SMS01-010	SMS01-010-51-01-7B	0.0	68	5.0 U								
SMS01-010	SMS01-010-51-02-7B	6.0	34	3.0 U								
SMS01-011	SMS01-011-51-01-Purp	0.0	100	12								
SMS01-011	SMS01-011-51-02-Purp	6.0	120	16								
SMS01-012	SMS01-012-51-01-9F	0.0	45	3.0 U								
SMS01-012	SMS01-012-51-02-9F	6.0	69	4.4								
SMS01-013	SMS01-013-51-01-11F	0.0	100 JK	3.0 UJK								
SMS01-013	SMS01-013-51-02-11F	6.0	170 D	4.9								
SMS01-014	SMS01-014-51-01-11F	0.0	150 DJK	11 JK								
SMS01-014	SMS01-014-51-02-11F	6.0	220 DJK	16 JK								
SMS01-015	SMS01-015-51-01	0.0	70 JK	8.7 JK								
SMS01-016	SMS01-016-51-01	0.0	43 JK	3.0 UJK								
SMS01-017	SMS01-017-51-01	0.0	32 JK	5.0 UJK								
SMS01-017	SMS01-017-51-02	6.0	120 JK	3.0 UJK								
SMS01-018	SMS01-018-51-01	0.0	19 JK	3.0 UJK								
SMS01-018	SMS01-018-51-02	6.0	13 JK	3.0 UJK								
SMS01-019	SMS01-019-51-01-13&1	0.0	25 JK	3 UJK								
SMS01-019	SMS01-019-51-02-13&1	6.0	17 JK	3 UJK								
SMS01-025	SMS01-025-51-01-17F	0.0	260 DJK	34 JK								
SMS01-025	SMS01-025-51-02-17F	6.0	110 JK	15 JK								
SMS01-026	SMS01-026-51-01-26	0.0	180 DJK	17 JK			190 JL	21.7			-5.41	-24.29
SMS01-026	SMS01-026-51-02-26	6.0	850 DJK	28 JK								
SMS01-027	SMS01-027-51-01-17B	0.0	180 DJK	23 JK								
SMS01-027	SMS01-027-51-02-17B	6.0	57 JK	14 JK								
SMS01-028	SMS01-028-51-01-18	0.0	210 DJK	25 JK								
SMS01-028	SMS01-028-51-02-18	6.0	240 DJK	28 JK								
SMS01-029	SMS01-029-51-01-22	0.0	210 D	22								
SMS01-029	SMS01-029-51-02-22	6.0	88 JK	11 JK								
UTP01-001	UTP01-001-51-01	0.0	26	8.4								
UTP01-001	UTP01-001-51-02	6.0	3.0 U	3.0 U								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP01-002	UTP01-002-51-01	0.0	120	6.6								
UTP01-002	UTP01-002-51-02	6.0	3.0 U	3.0 U	170 D	9.1	161 JL	32.7	-193.1	-100.8	-192.7	-166.4
UTP01-003	UTP01-003-51-01	0.0	590 D	51								
UTP01-004	UTP01-004-51-01	0.0	400 D	39								
UTP01-004	UTP01-004-51-02	6.0	17	8.3								
UTP01-005	UTP01-005-51-01	0.0	480 D	37								
UTP01-005	UTP01-005-51-02	6.0	310 D	26								
UTP01-006	UTP01-006-51-01	0.0	420 D	34								
UTP01-006	UTP01-006-51-02	6.0	380 D	23								
UTP02-007	UTP02-007-51-01	0.0	3.0 U	3.0 U								
UTP02-008	UTP02-008-51-01	0.0	3.0 U	3.0 U								
UTP02-009	UTP02-009-51-01	0.0	5.7	3.0 U			10.8 JL	2.53 J			-61.82	17.00
UTP02-010	UTP02-010-51-01	0.0	4.2	3.0 U	5.0 U	3.0 U			-17.39	0.00		
UTP03-011	UTP03-011-51-01	0.0	8.1	3.0 U								
UTP03-012	UTP03-012-51-01	0.0	7.3	3.0 U								
UTP03-013	UTP03-013-51-01	0.0	11	3.0 U								
UTP03-014	UTP03-014-51-01	0.0	7.0	3.0 U								
UTP04-015	UTP04-015-51-01	0.0	23	3.0 U								
UTP04-016	UTP04-016-51-01	0.0	24	3.0 U								
UTP04-017	UTP04-017-51-01	0.0	25	3.0 U								
UTP04-018	UTP04-018-51-01	0.0	22	3.0 U								
UTP04-019	UTP04-019-51-01	0.0	22	3.0 U								
UTP05-020	UTP05-020-51-01	0.0	220 D	6.4 JH								
UTP05-020	UTP05-020-51-02	6.0	100	5.0 U	130 D	3.0 U			-26.09	50.00		
UTP05-021	UTP05-021-51-01	0.0	44	3.0 U								
UTP05-021	UTP05-021-51-02	6.0	450 D	15 JH			121 JL	7.01			115.24	72.60
UTP05-022	UTP05-022-51-01	0.0	54	3.0 U								
UTP05-022	UTP05-022-51-02	6.0	26	3.0 U								
UTP05-023	UTP05-023-51-01	0.0	38	3.0 U								
UTP05-023	UTP05-023-51-02	6.0	95	5.0 U								
UTP05-024	UTP05-024-51-01	0.0	280 D	4.5 JH								
UTP05-024	UTP05-024-51-02	6.0	490 D	18 JH								
UTP05-025	UTP05-025-51-01	0.0	120 D	5.0 U								
UTP05-025	UTP05-025-51-02	6.0	63	5.0 U								
UTP05-026	UTP05-026-51-01	0.0	160 D	3.0 U								
UTP05-026	UTP05-026-51-02	6.0	220 D	5.0 U								
UTP05-027	UTP05-027-51-01	0.0	130 D	3.0 U								
UTP05-027	UTP05-027-51-02	6.0	590 D	24 JH								
UTP05-028	UTP05-028-51-01	0.0	94	3.0 U			103 JL	5.54 J			-9.14	-59.48

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station Identification	Original Sample Identification	Sample Depth (inches)	AES Results (mg/Kg) Lead	AES Results (mg/Kg) Arsenic	AES Duplicate (mg/Kg) Lead	AES Duplicate (mg/Kg) Arsenic	Xenco Split (mg/Kg) Lead	Xenco Split (mg/Kg) Arsenic	Duplicate RPD (%) Lead	Duplicate RPD (%) Arsenic	Split RPD (%) Lead	Split RPD (%) Arsenic
UTP05-028	UTP05-028-51-02	6.0	240 D	6.6 JH								
UTP05-029	UTP05-029-51-01	0.0	65	3.0 U	74	3.0 U			-12.95	0.00		
UTP05-029	UTP05-029-51-02	6.0	190 D	5.3 JH								
UTP06-030	UTP06-030-51-01	0.0	1400 D	51								
UTP06-030	UTP06-030-51-02	6.0	250 D	6.5								
UTP06-031	UTP06-031-51-01	0.0	890 D	20								
UTP06-031	UTP06-031-51-02	6.0	22	3.0 U								
UTP06-032	UTP06-032-51-01	0.0	12	3.0 U								
UTP06-032	UTP06-032-51-02	6.0	1100 D	38								
UTP06-033	UTP06-033-51-01	0.0	420 D	13								
UTP06-033	UTP06-033-51-02	6.0	6.2	9.7								
UTP06-034	UTP06-034-51-01	0.0	650 D	16								
UTP06-034	UTP06-034-51-02	6.0	11	40								
UTP06-035	UTP06-035-51-01	0.0	610 D	21								
UTP06-035	UTP06-035-51-02	6.0	14	14								
UTP07-036	UTP07-036-51-01	0.0	850 D	23	790 D	21			7.32	9.09		
UTP07-036	UTP07-036-51-02	6.0	730 D	16								
UTP07-037	UTP07-037-51-01	0.0	240 D	9.2								
UTP07-037	UTP07-037-51-02	6.0	270 D	6.0 U								
UTP07-038	UTP07-038-51-01	0.0	750 D	30								
UTP07-038	UTP07-038-51-02	6.0	1500 D	49								
UTP08-039	UTP08-039-51-01	0.0	220 D	5.0 U								
UTP08-039	UTP08-039-51-02	6.0	390 D	8.5								
UTP08-040	UTP08-040-51-01	0.0	140 D	3.0 U								
UTP08-040	UTP08-040-51-02	6.0	310 D	6.0 U								
UTP09-041	UTP09-041-51-01	0.0	750 D	21			612 JL	33.0			20.26	-44.44
UTP09-041	UTP09-041-51-02	6.0	79	14								
UTP09-042	UTP09-042-51-01	0.0	810 D	12								
UTP09-042	UTP09-042-51-02	6.0	30	17								
UTP09-043	UTP09-043-51-01	0.0	850 D	38								
UTP09-043	UTP09-043-51-02	6.0	160 D	13								
UTP09-044	UTP09-044-51-01	0.0	520 D	17								
UTP09-044	UTP09-044-51-02	6.0	74	20								
UTP10-045	UTP10-045-51-01	0.0	150 D	3.0 U								
UTP10-045	UTP10-045-51-02	6.0	3.0 U	3.0 U								
UTP10-046	UTP10-046-51-01	0.0	140 D	3.0 U								
UTP10-046	UTP10-046-51-02	6.0	62	3.0 U	84	3.0 U			-30.14	0.00		
UTP11-047	UTP11-047-51-01	0.0	140 D	3.0 U								
UTP11-047	UTP11-047-51-02	6.0	12	3.0 U								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample Depth	AES				Xenco		Duplicate RPD (%)		Split RPD (%)	
			Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)					
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
UTP11-048	UTP11-048-51-01	0.0	140 D	5.0 U			291 JL	11.9			-70.07	-81.66
UTP11-048	UTP11-048-51-02	6.0	27	3.0 U	18	3.0 U			40.00	0.00		
UTP11-049	UTP11-049-51-01	0.0	64	3.0 U								
UTP11-049	UTP11-049-51-02	6.0	3.0 U	3.0 U								
UTP12-050	UTP12-050-51-01	0.0	43 JK	3.0 U								
UTP12-050	UTP12-050-51-02	6.0	170 DJK	5.7								
UTP12-051	UTP12-051-51-01	0.0	270 DJK	7.9								
UTP12-051	UTP12-051-51-02	6.0	320 DJK	11								
UTP12-052	UTP12-052-51-01	0.0	63 JK	3.0 U								
UTP12-052	UTP12-052-51-02	6.0	29 JK	3.0 U								
UTP12-053	UTP12-053-51-01	0.0	17 JK	3.0 U								
UTP12-053	UTP12-053-51-02	6.0	210 DJK	15 U								
UTP12-054	UTP12-054-51-01	0.0	36 JK	3.0 U								
UTP12-054	UTP12-054-51-02	6.0	160 DJK	7.5								
UTP12-055	UTP12-055-51-01	0.0	120 DJK	3.0 U								
UTP12-055	UTP12-055-51-02	6.0	48 JK	3.0 U								
UTP12-056	UTP12-056-51-01	0.0	150 DJK	3.0 U								
UTP12-056	UTP12-056-51-02	6.0	190 DJK	5.0 U	180 D	5.0 U			5.41	0.00		
UTP12-057	UTP12-057-51-01	0.0	180 DJK	3.0 U			235 JL	14.5			-26.51	-131.4
UTP12-057	UTP12-057-51-02	6.0	150 DJK	16								
UTP13-058	UTP13-058-51-01	0.0	10 JK	3.0 U								
UTP13-058	UTP13-058-51-02	6.0	5.0 JK	3.0 U								
UTP13-059	UTP13-059-51-01	0.0	27 JK	3.0 U								
UTP13-059	UTP13-059-51-02	6.0	8.7 JK	3.0 U								
UTP13-060	UTP13-060-51-01	0.0	26	3.0 U								
UTP13-060	UTP13-060-51-02	6.0	21	3.0 U								
UTP13-061	UTP13-061-51-01	0.0	25	3.0 U								
UTP13-061	UTP13-061-51-02	6.0	4.5	3.0 U								
VIL01-001	VIL01-001-51-01	0.0	290 D	3.0 U								
VIL01-001	VIL01-001-51-02	6.0	320 D	3.0 U								
VIL02-002	VIL02-002-51-01	0.0	110	3.0 U								
VIL02-002	VIL02-002-51-02	6.0	82	3.0 U								
VIL03-003	VIL03-003-51-01	0.0	110	3.0 U	110 JL	3.0 UJK			0.00	0.00		
VIL03-003	VIL03-003-51-02	6.0	68	3.0 U								
VIL04-004	VIL04-004-51-01	0.0	320 D	5.1								
VIL04-004	VIL04-004-51-02	6.0	14	3.0 U								
VIL05-005	VIL05-005-51-01	0.0	3.0 U	3.0 U			6.57 JL	1.16 J			-74.61	88.46
VIL05-005	VIL05-005-51-02	6.0	3.0 U	3.0 U								
VIL05-006	VIL05-006-51-01	0.0	3.0 U	3.0 U								

Table N-2
All Locations
Summary of Analytical Results by Station and Depth
El Paso County Metals Survey

Station	Original Sample	Sample	AES				Xenco		Duplicate		Split	
		Depth	Results (mg/Kg)		Duplicate (mg/Kg)		Split (mg/Kg)		RPD (%)		RPD (%)	
Identification	Identification	(inches)	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic
VIL05-006	VIL05-006-51-02	6.0	3.0 U	3.0 U								
VIL05-007	VIL05-007-51-01	0.0	3.0 U	3.0 U								
VIL05-007	VIL05-007-51-02	6.0	11	3.0 U								
VIL05-008	VIL05-008-51-01	0.0	10	3.0 U								
VIL05-008	VIL05-008-51-02	6.0	5.6	3.0 U								
VIL05-009	VIL05-009-51-01	0.0	4.9	3.0 U								
VIL05-009	VIL05-009-51-02	6.0	7.6	3.0 U								
VIL05-010	VIL05-010-51-01	0.0	9.7	3.0 U								
VIL05-010	VIL05-010-51-02	6.0	32	3.0 U								
VIL05-011	VIL05-011-51-01	0.0	8.9	3.0 U								
VIL05-011	VIL05-011-51-02	6.0	53	3.0 U								

ATTACHMENT N

Relative Percent Differences (RPD)

The duplicate samples were analyzed by AES and the split samples were analyzed by Xenco. The duplicate and split results were compared to the primary results using the Relative Percent Difference (RPD). The RPD is calculated using the following equation:

$$\left[\frac{(A-B)}{(A+B)}\right]\times 200 = RPD$$

where	A	=	The concentration in the primary sample
	B	=	The concentration in the duplicate or split sample.

Flagging Definitions

Results Flag	Description
D	Sample Diluted
DJK	Sample Diluted, Estimated detection limit, Unknown Biase
DJL	Sample Diluted, Estimated detection limit, Biased low
J	Estimated Value
JH	Biased High Estimated Value
JK	Unknown Biase, Estimated Value
JL	Biased Low Estimated Value
U	Not Detected
UJK	Not Detected, Unknown Biase, Estimated Value
UJL	Not detected, Biased Low

APPENDIX O

COPY OF WESTON LOGBOOK

APPENDIX P

QUALITY ASSURANCE SAMPLING PLAN (QASP)

QUALITY ASSURANCE SAMPLING PLAN
AND
RESPONSE PLAN

FOR

EL PASO COUNTY METALS SURVEY SITE

EL PASO, EL PASO COUNTY, TEXAS

Prepared for

U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, Texas 75202

U.S. Army Corps of Engineers
Fort Crook Area, Rapid Response Resident Office

Contract No.: DACA45-98-D-0004
Task Order: 0028

Submitted by

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June 2001

APPROVALS

Roy F. Weston, Inc.	**U.S. EPA/COE**
______________________	______________________
Jeff Criner Project Team Leader	Lon Biasco (EPA) On Scene Coordinator
______________________	______________________
Robert Beck Project Manager	Andrew Winslow (COE) Project Manager

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1. INTRODUCTION

Roy F. Weston, Inc. (WESTON®) has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 under U.S. Army Corps of Engineers Rapid Response Contract Number DACA-45-98-D-0004, Task Order 0028 to perform sampling and oversight tasks associated with potentially pending removal activities planned at the El Paso Metals Survey Site in El Paso, El Paso County, Texas (Figure 1-1). WESTON has prepared this Quality Assurance Sampling Plan (QASP) and Response Plan to describe the technical scope of work to be completed.

1.1 PROJECT OBJECTIVES

The primary objectives for WESTON regarding this site are to coordinate with federal, state, and local officials while overseeing the removal of potential on-site contaminants and contaminated materials. WESTON personnel are responsible for overseeing and documenting on-site activities during removal. During this oversight, extent of contamination as well as verification samples of soil will be collected. Samples are to be used to ascertain contaminant concentrations for comparison to EPA Region 6 Risk-Based values for metals (primarily arsenic and lead based on currently available data) both prior to and after removal activities. Additionally, air monitoring and air sampling will be be conducted at the request of the COE/EPA. Other activities that will be performed during the project include documentation of site conditions, both before and after removal activities have occurred, management of data obtained during the project, addressing public relations activities as directed by COE/EPA, locating and obtaining office space (either fixed or trailer) for use by personnel from two construction contractors, Federal government agencies, and WESTON. WESTON will also be responsible for securing site restoration agreement with site owners.

If removal activities are conducted at the site, WESTON will track costs during this project using the RCMS cost tracking system. WESTON anticipates submitting a report summarizing the costs incurred to date on a weekly basis.

1.2 PROJECT TEAM

The Project Team will consist of Robert Beck (Project Manager), Jeff Criner (Project Team Leader), Chad Conway (Field Team Leader) Jason Wilder (Data Management), Drew Molly (Cost Tracking Engineer), and other WESTON personnel as necessary due to the required number of field teams. WESTON has available resources in its Houston, Austin, Dallas, San Antonio, and Albuquerque offices as necessary. We will also consider adding a local subcontractor or hiring local personnel as the project schedule, duration, and extent become more well identified.

WESTON personnel will be responsible for documenting work performed in the field and will serve as the liaison to EPA Region 6 personnel and the community in the field during the site activities. For all sample collections, the FTL will determine the sample location in the field, with concurrence of the Federal On- Scene Coordinator (FOSC), collect samples as necessary, log the activities at each sample location in the field logbook, and verify the sample documentation. Sample documentation and preparation is also the responsibility of WESTON.

1.2 QASP FORMAT

This QASP has been organized in a format that is intended to facilitate and effectively meet the objectives of the removal oversight. The QASP is organized in the following sections:

- Section 1 - Introduction
- Section 2 - Site Background
- Section 3 - Sampling Approach and Procedures
- Section 4 - Quality Assurance

All figures and tables are included at the end of each respective section. Appendices are attached with the following information:

- Appendix A - TRW Recommendations for Sampling and Analysis of Soil at Lead (Pb) Sites US EPA., EPA-540-F-00-010, OSWER 9285.7-38, April 2000.

- Appendix B - Standard Operating Procedures for Hi-Volume Sampler

- Appendix C - Site Specific QAPP Information
- Appendix D - Standard Operating Procedures

2. SITE BACKGROUND

Information about the site location and description, site history and features, and a summary of previous investigations is included in the following subsections.

2.1 SITE LOCATION AND DESCRIPTION

The El Paso County Metals Survey Site is located over approximately a six-mile area centered in the southern portion of El Paso, Texas. The area of concern extends into New Mexico and potentially south of the Rio Grande River into Mexico. Sample locations will be determined based on input from EPA/COE representatives that will be on site. The priority for sampling locations has tentatively been set to include schools, day care facilities, public parks, other high traffic areas, and residential areas within the area of concern. Initial schools to be sampled include:

- Roosevelt
- Wiggs
- El Paso High School
- Gillian
- Mesita Elementary School
- University of Texas at El Paso

In addition, initial sampling will also take place in a residential area adjacent to the ASARCO Smelter site along San Marcos Street.

Other potential areas for future sampling include:

- Vilas Elementary School
- Carlos Cordova Middle School
- Sunset High School
- Highland Annex Elementary School
- Sunland Park Elementary School
- Desert View Elementary School
- Dunn Park
- Tom Lea Park
- Mission Hills Park
- Westside Park

- Madeline Park
- Ascarte Park
- Washington Park
- Loretto Park
- Memorial Park
- Grandview Park
- Newman Park
- Houston Square Park
- Arroyo Park
- Armijo Park
- Kerr Park
- Doniphan Park

2.2 SITE HISTORY AND FEATURES

Previous independent investigations of the area of concern have been conducted by students of the University of Texas at El Paso (UTEP). As part of several theses efforts, extensive sampling of surface soils within the site has been completed, and elevated levels of metals, namely arsenic and lead, have been detected. The source of these elevated metals as of the present time, has not been confirmed. As part of the present project activities, sampling activities primarily aimed at identifying the level and extent of current levels of contamination will in essence duplicate these previous sampling efforts. Additionally, earlier in June 2001, Ecology and Environment collected samples from approximately 100 locations within the site. Final results of that investigation are not available at the time this work plan was prepared.

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

As previously mentioned, the site has been the source of several previous studies conducted by students from the University of Texas at El Paso. In addition, a study was conducted by the Texas Air Control Board (TACB).

The Sampling and Analysis Division of the TACB conducted soil sampling within the area of concern on 12 and 13 July 1989. The primary objective of the project was to document levels of arsenic in the top one-half inch of soils. The highest value of arsenic detected was 1100 micrograms per gram (parts per million (ppm)) of arsenic in soil. It should be noted that this result was from a sample located at the International Boundary and Water Commission which was also located directly across from a brick manufacturing company in Mexico. The TACB study emphasized collection of soils in the vicinity of schools and recreational parks. At each sampling location, twelve samples were taken from evenly spaced locations, on the circumference of a two-foot diameter circle. At each location, an aliquot of soil was obtained by removing an approximately 1-inch by one-half-inch depth core.

In May 1993, Brenda E. Barnes (UTEP graduate student) presented a Master's Thesis titled An Evaluation of Metals Concentrations in Surficial Soils, El Paso County, Texas. The study involved the collection of soil samples from areas surrounding various facilities in El Paso which were potential sources of metals contamination. Potential sources of contamination which were studied included the ASARCO Smelter, Memorial Park in central El Paso where a former smelter was located, and Phelps Dodge Copper Refinery. Soil samples were collected from outlying areas north and east of El Paso in an effort to observe affects of distance from the potential contaminant sources. Concentrations of arsenic, cadmium, copper, lead, and zinc were found at highest concentrations in the area around the ASARCO smelter. Higher concentrations were found in the surface samples (2.5-centimeter depth) than in those samples taken from deeper locations. The metals concentrations did not appear to be affected by sample lithology or soil type.

In December 1993, Emmanuel Chukwuka Ndame (UTEP graduate student) presented a Master's Thesis titled Heavy Metals in Soils in the Vicinity of the University of Texas at El Paso Campus (El Paso County, Texas). The study involved the collection and analysis of seventy-eight soil samples. Areas of interest for the study included the campus of UTEP and parks and public school playgrounds within a 2-kilometer radius of the campus. The samples were analyzed for several metals including arsenic, barium, cadmium, chromium, lead, and selenium. The Ndame thesis concluded that there was no point source or large-scale contamination. Further, it concluded that lead concentrations increased from the west part of the campus to the ASARCO smelter. Sample results indicated the presence of arsenic in soils ranging from below the instrument detection limit of 51 ppm to 92 ppm. Surface soil concentrations of lead were reported as high as 1500 ppm. Significant concentrations of arsenic and lead were not detected in any of the off-campus public schools or parks with the exception of a surface soil sample collected from Althea Park which had a lead concentration of 840 ppm.

In May 1994, Dilip Kumar Devanahalli (UTEP graduate student) presented a Master's Thesis titled Survey of Heavy Metal Concentrations of Soils in Downtown El Paso, Texas. The thesis study involved the collection of soil samples from a downtown area of El Paso, Texas bounded b Interstate 10 to the north, Rio Grande River to the south, Sun Metro Terminal to the west, and Phelps Dodge Copper Refinery to the east. Fifty-four soil samples were collected from the surface and at a depth of 6 inches in public parks and playgrounds including schools. Arsenic concentrations in samples collected ranged from below the instrument detection limit of 13 ppm to 33 ppm. Lead concentrations ranged from the instrument detection limit of 17 ppm to 560 ppm.

Also in May 1994, Shyam Srinivas (UTEP graduate student) presented a Master's Thesis titled Heavy Metal Contamination of Soils in Public Parks, El Paso, Texas. As part of this study, seventy-two surface and subsurface (6-inch depth) samples were collected from public parks in El Paso. The results of the sample analyses indicated that concentrations of metals were higher in surface soils than in subsurface soils. Arsenic was detected in only one sample, at the instrument detection limit of 55 ppm. Lead concentrations ranged from below the instrument detection limit of 30 ppm to 130 ppm.

Numerous other studies have been conducted, or are in the process of being conducted, by other university and environmental research centers.

2.4 SITE CONCERNS

The primary concerns associated with the El Paso County Metals Survey Site are the presence of metals, namely lead and arsenic, above the EPA Region 6 health based benchmark of 400 to 500 ppm (for lead) and 20 ppm (for arsenic). The goal of the sampling and analysis for level and extent of contamination, which will be conducted at various locations prior to removal activities, will be to confirm the presence of these metals at levels above the established benchmarks.

3. SAMPLING APPROACH AND PROCEDURES

Samples collected will be used to evaluate the characteristics and to define the extent of affected media at the site. Additionally, sampling will be conducted to confirm historical results and potentially the source(s) of contaminants. Sampling after the removal activities will also be performed to confirm that levels of contaminants have been removed to levels below the Region 6 health-based benchmarks.

3.1 OVERVIEW OF SAMPLING ACTIVITIES

For both nature and extent, and confirmation sampling to be conducted by WESTON; locations will be agreed upon with the FOSC prior to sampling. Grid based sampling will be completed, based on the EPA-developed FIELDS data management system. FIELDS will be implemented to determine the locations and spacing of the grid samples based on statistical input from the FOSC. Base maps of each location (i.e. school or park) to be sampled will be prepared based on ortho-rectified aerial photographs which will be provided to WESTON by EPA Region 6. FIELDS will be utilized to "lay the grid" upon the unpaved areas of each location. Based upon results obtained, gridded areas of each location will be identified that are representative of being above the established EPA health-based benchmarks and will be identified as requiring removal actions. After removal, sampling will take place to evaluate whether the remaining soils are above the established levels, and whether addition removal activities are warranted. Sampling of investigation-derived waste (IDW) may be performed to effectively dispose of the waste if necessary. Additional sampling may be performed upon request by the FOSC. All sample data management will be done using EPA-provided Forms II Lite software.

3.1.1 Health and Safety Plan Implementation

The WESTON field activities will be conducted in accordance with the site-specific health and safety plan (HASP). In general, the HASP specifies that work will proceed in Level D (coveralls and steel-toed boots) in selected sampling areas based on appropriate air monitoring results. The WESTON FTL will act as the Site Health and Safety Coordinator (SHSC) and will be responsible for implementation of the HASP during all field investigation activities. Alternatively, based on the size of the project, a dedicated SHSC may be established. It should be noted that WESTON will be responsible for the health and safety of our employees, and those directly contracted to WESTON (i.e. our subcontractors). WESTON subcontractors will be required to conduct work according to the guidelines and requirements of the HASP. WESTON will not be responsible for the health and safety of other contractors working on the site. In accordance with WESTON's general health and safety operating procedures, the field team will also drive the route to the hospital specified in the HASP prior to initiating sampling activities.

3.1.2 Site Reconnaissance

WESTON has conducted an initial survey of the site. However, due to the large nature of the site, individual sampling points have not been identified thus far. WESTON, with the consultation of the FOSC, will establish sampling points that meet the objectives of the investigation at each location identified.

3.1.3 Community Relations

Community relations may be a relatively large issue due to the general nature of the site. It is anticipated that an FOSC will be on site at all times. If so, community relations issues will be directed to him. If not, the WESTON FTL, under the guidance of WESTON's Project Manager, will manage community relations in the field as directed by the FOSC. It is unclear at the present time, if a community relations plan and program will be necessary for this site, although it is likely. If requested, WESTON will establish each.

3.2 SAMPLING/MONITORING APPROACH

All soil samples will be collected in general accordance with the EPA Compendium of Emergency Response Team (ERT) Soil Sampling and Surface Geophysics Procedures and the WESTON standard operating procedures (SOPs) (Appendix D). The specific sampling procedures are described below.

3.2.1 Soil

Soil samples will be collected based on a grid pattern established for each given locations (i.e. schools, parks, etc.). Figure 3-1 provides the proposed sampling grid for Mesita Elementary School. The grid for each location will be determined by a statistical evaluation utilizing the FIELDS data management system. Grid locations identified using FIELDS will represent one sample point. Each sample point will represent the location of a five-point composite, as well as an individual grab sample. Grab samples will be collected and placed immediately into a pre-cleaned, 4-ounce glass container with a Teflon-lined lid. Composite samples will be composed of five sample aliquots of approximate equal volume. The aliquots will generally be collected from the grid node as identified in FIELDS, and then approximately half way to the next sampling grid in a north, south, east, and west direction. Sample aliquots will be placed into a dedicated plastic bag, homogenized, and then placed into the 4-ounce glass sample containers.

Deviations from the grid points identified using FIELDS will be due to new observations made prior to sampling, information obtained in the field that warrant an altered sampling point, difficulty in sample collection, or limited access. The FOSC will be notified, and concurrence will be obtained should significant deviations from the planned sampling points be proposed.

Both surface and subsurface samples will be collected from each sampling point. Surface samples from 0 to 1 inch depth will be collected from each node. These samples will be made up of five-point composites. Grad samples will also be collected from each sample point from depths of 6 inches, 12 inches, 18 inches, and 24 inches from ground surface. This sample scheme will assist with planning for potential subsequent removal activities.

Surface samples (0 to 1 inch in depth) will be collected utilizing dedicated plastic scoops or stainless steel spoons. These samples may, or may not, be prepared and analyzed in accordance with <u>TRW Recommendations for Sampling and Analysis of Soil at Lead (Pb) Sites US EPA., EPA-540-F-00-010, OSWER 9285.7-38, April 2000</u>. The sample preparation method described in the guidance document is based on the assumption that incidental ingestion is the primary pathway of exposure to lead in soil and dust. This exposure pathway assumes that ingested soil and dust lead is best represented by the lead concentrations in the particle size fraction that sticks to hands. A reasonable upper bound for this size fraction is 250 microns. This is also the particle size fraction that is most likely to accumulate in the indoor environment as a result of disposition of wind-blown dust. Therefore, a 250-micron filter (No. 60) sieve is recommended and will be utilized to screen the surface soil sample set to arrive at a "fine" fraction (<250 microns). The sample will be collected and submitted to the laboratory following normal chain-of-custody procedures. The laboratory will be instructed to properly dry and sieve the samples so that an un-sieved sample will be analyzed, a sample sieved through the ASTM No. 10 sieve, and lastly through the ASTM No. 60 sieve. Thus three distinct results would be obtained from each surface sample. If the FOSC determines that this method will not be utilized, the analysis of the surface samples will be performed without any sieving process.

Subsurface samples will be collected using slam bars, geoprobe conventional drilling, or grab sample methods. In general, if sample cores are collected, the outside will be shaved, if possible, to remove exterior surfaces and to reduce the possibility of cross-contamination between sampling depths. In addition, dedicated plastic scoops will be used to collect the samples to reduce the potential for cross-contamination between intervals and locations. Subsurface samples will be analyzed without any sieving procedure.

Sample analysis will be conducted either utilizing field screening techniques utilizing XRF technology, a mobile laboratory, or a fixed laboratory. Samples will be analyzed for arsenic and lead. Based on information obtained thus far, it is currently believed that the sample analytical method which provides the best value is the use of a local fixed laboratory. Currently, the primary method of analysis will be via Applied Environmental Sciences laboratory located at 140 N. Cotton in El Paso, Texas. AES has stated that they have the capability of providing 6 to 8 hour turnaround time on sample analysis, that they have the capability of running up to 500 samples per day, and that they are willing to work 24-hour days including weekends. AES will analyze the samples using inductively coupled plasma (ICP) technology via EPA Method 200.7. Alternate fixed laboratories in the area include Assaigai Analytical Laboratory (AAL) of Albuquerque, New Mexico and Environmental Labs of Texas in Odessa, Texas.

3.2.2 Surface Water

Sampling situations vary widely; therefore, no universal sampling procedure can be recommended. However, sampling of both aqueous and nonaqueous liquids is generally accomplished through the use of one of the following samplers or techniques: Kemmerer bottle, Bacon bomb sampler, dip sampler, or the direct method. These sampling techniques will allow for the collection of representative samples from the majority of surface waters and impoundments encountered. SOP 1002.01 describes methods for collecting surface water samples. Currently, there are no known locations planned for surface water sampling. However, if surface water samples are to be collected, they will be analyzed for arsenic and lead at AES laboratory in El Paso, Texas.

3.2.3 Air

Air monitoring will be conducted using portable direct-reading instruments as screening tools to provide short-term information on the levels of airborne site contaminants to protect on-site workers and the adjacent communities. This monitoring will be conducted to ensure that site activities do not cause releases to the atmosphere above health-based benchmarks. Indoor as well as outdoor monitoring may be implemented.

The use of direct-reading instruments in this manner will serve to alert site personnel to conditions that may be exceeding site action levels and will allow mitigating steps to be taken almost immediately.

Conversely, monitoring for particulate concentrations may be increased in scope, area, or intensity by more frequently observing the monitors or by operating more monitors, if monitoring results or other factors indicate the need for an increase.

It is anticipated that air sampling may also be implemented. Air sampling will be accomplished through collection of total suspended particulate (TSP) samples. All TSP samples will be collected in general accordance with protocols for TSP in 40 CFR 50, Appendix B. All samplers will be calibrated prior to sampling and in accordance with manufacturer's recommendations. The Hi-Vol samplers will be set to sample continuously during the hours of removal operations. A minimum of four, and up to as many as twelve sample locations will be established at each removal site as directed by the FOSC. Additionally, a meteorological station will be established to monitor weather parameters. Filters for each sampler will be changed daily, and submitted to the designated laboratory, tentatively identified as Chester LabNet, for analyses for arsenic and lead.

3.2.4 Investigation-Derived Waste (IDW)

Any excess soil/sediment and fluids generated as a result of equipment decontamination will be placed in a drum and staged on site. The drum will be labeled on the side with the name of the site, the contents, sampling location, and the date. Grab samples will be collected at the discretion of the FOSC from any drummed material for which a potential treatment/disposal determination is needed. The analytical data from collected samples will be reviewed after completion of the field activities, and disposal options will be evaluated accordingly. It is anticipated that minimal amounts of IDW will be generated during this activity.

3.2.5 Sampling and Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objective. The volume of the sample collected must be sufficient to perform the analysis requested. Samples must be stored in the proper types of containers and preserved in a manner appropriate to the analysis to be performed.

All clean, decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. All soil and samples will be collected with clean decontaminated equipment (SOP 1201.01). All samples collected for laboratory analysis will be placed directly into precleaned, unused glass or plastic containers. Sampling personnel will change gloves between each sample collection/handling. All samples will be assembled and catalogued prior to shipping (refer to SOPs 1101.01 and 1102.01) to the designated laboratory.

Sampling preservation, containers and hold times for analytical methods associated with this site are presented in Subsection 3.5.

3.2.6 Field Quality Control Samples

Field QA/QC samples will be collected so that ten percent of samples per matrix will be collected as blind duplicate sample analysis. Five percent sample blanks of hi-vol sample filters will be submitted for analysis. If non-dedicated sample equipment is used, then one equipment rinsate blank per day will be submitted for analysis for arsenic and lead.

As part of quality control measures on the laboratory analyses, ten percent of samples submitted to AES laboratory will be split and a duplicate sample will be submitted to a Corps of Engineer's Certified laboratory. The results from the two laboratories will be evaluated for comparability.

For the first month, WESTON must pull approximately five percent of the sample results and do an immediate validation of the data. This data should be validated within 24 hours of receipt from the laboratory. Based on the results over this month period and QA/QC results from other labs this may be curtailed after input from the FOSC.

3.3 SAMPLE MANAGEMENT

Specific nomenclature that will be used by WESTON will provide a consistent means of facilitating the sampling and overall data management for the project (SOP 0110.04). Any deviations from the sample nomenclature proposed below must be approved by WESTON's Program Manager. Sample

As stated in SOP 0110.04, sample nomenclature will follow a general format regardless of the type or location of the sample collected. The general nomenclature consists of the following components:

- Geographic location (e.g. location within a school or park).
- Collection type (composite, grab, etc.).
- QA/QC type (normal, duplicate, etc.).
- Sequence - An additional parameter used to further differentiate samples (e.g., if two samples were taken from the same pond on the same day).

Sample data management will be completed utilizing the EPA-provided Forms II Lite software.

3.4 DECONTAMINATION

The nondisposable sampling equipment (soil samplers, hand trowels, and stainless steel bowls) used during the sample collection process will be thoroughly decontaminated before initial use, between use, and at the end of the field investigation. Equipment decontamination will be completed in the following steps:

- High-pressure water spray or brush, if needed, to remove soil/sediment from the equipment.
- Non phosphate detergent and potable water wash to clean the equipment.
- Final potable water rinse.
- Equipment air-dried.

All decontamination activities will be conducted at a temporary decontamination pad that will be constructed in an area identified prior to the beginning of field activities.

Personnel decontamination procedures will be described in the site-specific HASP that will be prepared by WESTON prior to implementation of activities at the site.

3.5 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES

Once collected, samples will be stored in coolers and kept at approximately 4° C, while at the site and until they are submitted for analysis. The samples will be sent to the designated laboratory by a common carrier on a daily basis. Table C-1 in Appendix C lists required containers, maximum holding times, and preservation methods for constituents that may be potentially present in the samples to be analyzed.

To make critical decisions, WESTON will require a turnaround (project turnaround) for analytical results based on discussions with the FOSC. This turnaround time is initiated when the samples are collected in the field and continues until the analytical results are made available to WESTON (either verbally or by providing facsimile copies of the results) for review. Samples that have been analyzed will be disposed of by the designated laboratory in accordance with the laboratory's SOPs.

4. QUALITY ASSURANCE

Quality assurance will be conducted in accordance with WESTON's Quality Assurance Project Plan (QAPP), dated 5 December 2000. In addition, Appendix C presents tables containing site-specific quality assurance requirements for sample collection and analysis.

4.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, the samples will be maintained under the chain-of-custody procedures. If the sample collected is to be split (such as with the EPA, COE, or laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. All personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

The chain-of-custody (COC) procedures are documented in SOP 1101.01, Appendix D, and will be made available to all personnel involved with the sampling. A typical chain-of-custody record included in SOP 1101.01 will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each of the sample labels and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples. WESTON personnel will complete a COC form for all samples sent to a WESTON designated off-site laboratory.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the chain-of-custody record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. This custody record documents transfer of sample custody from the sampler to another person or to the laboratory.

- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be padlocked or custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to itself to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.

- If sent by common carrier, a bill of lading or airbill will be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 describe these procedures in more detail.

4.2 PROJECT DOCUMENTATION

4.2.1 Field Documentation

WESTON will perform both pre- and post-removal documentation needs. This will include photo/video documentation of all conditions of the schools, parks, residences such as windows, concrete, vegetation, playground equipment, etc. A survey of general grades of contours and building corners may be performed if requested. WESTON will prepare a diagram of the school that shows any serious deficiencies with the school and construction. WESTON will also prepare a restoration plan stating how the site is to be restored to its previous condition. These plans will be signed by the designated representative of the location, i.e. school superintendent, head maintenance, or principal prior to conducting the removal operations. The restoration agreement will show concrete, vegetation, playground equipment, etc.

All documents will be completed legibly and in ink. Any corrections or revisions will be made by lining through the original entry and initialing the change. The following field documentation will be maintained:

Field Logbook (SOP 1501.01)

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. All entries will be signed by the individuals making them. Entries should include, at a minimum, the following:

- Site name and project number.
- Names of personnel on-site.
- Dates and times of all entries.
- Descriptions of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain-of-custody information.
- Records of photographs.
- Site sketches.

Sample Labels

Sample labels will be securely affixed to the sample container. They will clearly identify the particular sample and should include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.

Chain-of-Custody Record (SOP 1101.01)

A chain-of-custody record will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed, and a copy of the record will be kept by each individual who has signed it. The chain-of-custody is discussed in Subsection 4.1 Sample Custody Procedures.

Custody Seal

Custody seals demonstrate that a sample container has not been opened or tampered with. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photo Documentation

WESTON will take photographs to document site conditions and activities as site work progresses. Initial conditions should be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs should be taken of each type of site activity. The photographs should show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions should also be documented by photograph as a record of how the site appeared at completion of the work.

All photographs should be taken with either a film camera, a digital camera, or a video camera capable of recording the date on the image. Each photograph should be recorded in the logbook with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the photograph location, direction, and subject should also be shown on a site sketch. SOPs 1502.01 and 1502.02 discuss photo documentation in more detail.

4.2.2 Oversight Documentation

WESTON will prepare for the FOSC daily reports and weekly draft by documenting pollution reports (POLREPs) on-site activities including any sampling that took place.

WESTON will document pre- and post- removal activity conditions. This will include photo/video documentation of school conditions such as existing windows, concrete, vegetation and playground equipment status. WESTON will document, when requested by EPA, general grades of soil contours and building corners. WESTON will utilize school diagrams to document any serious deficiencies with the facility. Prior to removal, WESTON will prepare a restoration plan outlining the tasks that will be conducted during site restoration for approval by the school superintendent, head maintenance, or principal.

Upon completion of the removal activities and at the direction of the FOSC, WESTON will prepare a final report to correlate available background information with data generated under this project. In addition, supportable conclusions and recommendations that satisfy the objectives of this work plan will be presented.

APPENDICES

APPENDIX A

TRW RECOMMENDATIONS FOR SAMPLING AND ANALYSIS OF SOIL AT LEAD SITES

EPA United States Environmental Protection Agency

Office of Emergency and Remedial Response (5204G)

EPA-540-F-00-010
OSWER 9285.7-38
Guidance Document
April 2000

TRW Recommendations for Sampling and Analysis of Soil at Lead (Pb) Sites

Background

Incidental ingestion is the major pathway of exposure to lead in soil and dust.[1] The assumption implicit in this exposure pathway is that ingested soil and dust lead is best represented by the lead concentration in the particle size fraction that sticks to hands (and perhaps clothing and other objects that may be mouthed). EPA lead models consider this fraction to be the primary source of the ingested soil and dust. Several studies indicate that the particle size fraction of soil and dust that sticks to hands is the fine fraction and that a reasonable upper-bound for this size fraction is 250 microns (μm) (Kissel *et al.*, 1996; Sheppard and Evenden, 1994; Driver *et al.*, 1989; Duggan and Inskip, 1985; Que Hee, *et al.*, 1985; Duggan, 1983). This is also the particle size fraction that is most likely to accumulate in the indoor environment, as a result of deposition of wind-blown soil and transport of soil on clothes, shoes, pets, toys, and other objects.

A TRW review of data from CERCLA sites has demonstrated that the lead concentration in the fine fraction often differs from the lead concentration in the total soil sample. The fraction less than 250 μm is most often measured, but data are available on smaller size fractions as well. This difference in lead concentration between the fine fraction and the total soil sample has also been reported by a number of investigators (Fergusson and Ryan, 1984; Fergusson and Schroeder, 1985; Kitsa *et al.*, 1992), and enrichment of lead and other metal contaminants in the fine fraction is suggested. In the development of his *de minimis* model for lead exposure to children, Stern (1994) recommended a generic correction for enrichment of lead in the exposure fraction.

Lead concentration data for the fine (<250 μm) fraction (Midvale data) were used in the calibration of the EPA Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, and in the characterization of lead bioavailability in soil, using either *in vivo* or *in vitro* studies (Casteel *et al.*, 1997; Maddaloni *et al.*, 1998; Ruby *et al.*, 1996).

While estimates of the lead concentrations in the fine particle fraction from sieved soil samples are considered to be most relevant for assessment of current lead risks at sites, there is also value in obtaining data on the concentration of lead in unsieved (total) soil samples (or alternately, joint data on concentrations in both the total and fine soil fractions). Data to compare concentrations of lead in fine and total fractions are particularly important if either routine or confirmatory site sampling during cleanup activities will use total soil sample concentrations. In this case, data on the relative lead concentrations in the two fractions may be used to develop a site-specific "adjusted" cleanup level that would be applicable to total soil sampling data.

Second, while it is generally expected that fine soil fractions will be "enriched" in lead compared to total soil fractions, in certain cases, the opposite situation may occur. In some soils, the total soil fraction may contain high concentrations of lead (*e.g.*, if coarse materials from mining or industrial operations contained high concentrations of lead). When coarser materials contain high lead concentrations, concerns about the future degradation of these coarser materials into finer particles should be addressed by using the total soil concentration for developing response actions at a site. In addition, total soil concentrations would be more representative of deliberate soil ingestion (pica) than fine fraction concentrations.

The following is a standard set of recommendations and protocols developed for the collection, preparation, and analysis of lead in soil and dust for use in lead modeling exercises. The goal is to assure that a given lead concentration in soil or dust means the same thing in every case, because consistency at sites is of major concern.

TRW Recommendations

Because the concentration from the fine fraction is relevant for exposure from incidental soil ingestion, it is the preferred concentration input in modeling lead risks. Data on the fine fraction (<250 μm) is the recommended input for the IEUBK and Adult Lead models.

- If there is a potential for the coarse fraction to contain a higher concentration of lead than the fine fraction, then at least 20% of the surface soil samples, or a minimum of 20 samples, should be analyzed for lead concentration in both the coarse (>250 μm) and the fine (<250 μm) particle size

[1] It is known that some children exhibit pica for soil (deliberate ingestion of soil) and that these children may have soil ingestion rates well in excess of the typical ingestion levels used in the IEUBK model or most EPA risk assessments.

fractions. This data should allow for statistical analysis to compare concentrations in the total and fine fractions. In addition, if prior soil sampling data are available, such analysis may allow for comparison with earlier sampling data.

- At sites where conditions are sufficiently uniform, the fine fraction lead concentration may be estimated from the total fraction lead concentration. This approach will be most useful if the ratio between the concentrations in the two fractions (the enrichment ratio) is constant across sampling locations. For practical purposes, an enrichment ratio that varies by 10%–20% may be sufficiently constant for most applications. Statistical regression models can also be useful in examining the relationship between concentrations in the different soil fractions. For example, data may support a regression model predicting the fine fraction concentration from the total fraction concentration (potentially with other covariates). It is recommended that assistance from a statistician be obtained in developing and evaluating such regression models. A few key points to consider: An estimated slope relating the fine fraction concentration to the total concentration should not be used to estimate fine fraction concentrations, instead predictions should be based on the full regression analysis. The p-value and r^2 statistics output from most regression programs provide useful indicators for the presence of a relationship between model variables, but are not sufficient to evaluate the level of error in modeling. Regression models should be presented so as to provide best estimates of the fine fraction concentrations (the regression line) and to predict errors about the regression line. Unless prediction errors are relatively small (10–20% of the best estimates), it is recommended that upper bound values for predicted fine fraction concentrations be used for site applications. Where substantial error exists in the prediction of fine fraction concentrations, this should generally signal the importance of measuring, rather than estimating, fine fraction concentrations (especially in locations where the exceedance of a cleanup goal may be in question).

- A 250 μm (No. 60) sieve (ASTM, 1999) is the recommended maximum sieve size that should be used for sieving soil samples. Other sieve sizes may be used under certain circumstances, but both the cost of sample preparation and the lead enrichment in the fine fraction are expected to increase with decreasing sieve size.

- If only one analysis is to be performed on soil at a lead contaminated site, as is often done at a removal site, the preference is for analysis of the fine fraction only, because it provides the best characterization of the current risk from exposure by incidental ingestion.

- A reasonable preparation procedure consists of drying the sample and then carefully sieving it though a No. 4 (4.75 mm) or a No. 10 (2.0 mm) sieve (ASTM, 1999) to remove the "sticks and stones" (large debris). The resulting material is the bulk or total soil sample. The suggested methodology would be to sieve the entire weighed total sample; then weigh and analyze both the coarse (> 250 μm) and fine (< 250 μm) fractions and reconstruct the total soil concentration using weighted averaging, or to simply weigh and analyze only the fine fraction.

At this time, the TRW does not have any specific recommendations for sample preparation and analysis of soil samples for other metals or contaminants. Recommendations for contaminants other than lead may differ due to the differences in the methodologies employed for the assessment of risk for these contaminants, although samples analyzed for lead are often analyzed for the full suite of metals through the EPA's Contract Laboratory Program.

Definitions

Total soil sample: the soil that remains after passing a soil sample through a No. 4 (4.72 mm) or a No. 10 (2.0 mm) sieve to remove large debris, such as sticks and stones. The total soil sample consists of the coarse and fine fractions.

Coarse fraction: the portion of the total sample that does not pass through a 250 μm sieve.

Fine fraction: the portion of the total sample that passes through a 250 μm sieve. This is the fraction most likely to stick to hands and be ingested.

Enrichment ratio: the concentration of lead in the fine fraction relative to the concentration of lead in the total fraction. This ratio will vary across and even within sites.

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APPENDIX B

STANDARD OPERATING PROCEDURES FOR HI-VOLUME SAMPLERS

ORIGINATOR ______________
APPROVED ______________
EFFECTIVE ______________

SUBJECT: CALIBRATION AND AUDIT OF TSP/PM_{10} HIGH VOLUME SAMPLERS

1.0 SCOPE:

The following procedures describe the calibrations and audit of flow controlled TSP and PM_{10} high volume samplers.

2.0 REFERENCES/FORMS

2.1 40CFR, Part 50, Appendix B - Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (high volume method).

2.2 40CFR, Part 50, Appendix J - Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere.

2.3 Quality Assurance Handbook for Air Pollution Measurement System, Volume II, Ambient Air Specific Methods, Section 2.0, USEPA 600/4-77-0279, May 1977.

2.4 Prino, Fortin type mercurial barometer instruction booklet.

3.0 CALIBRATION OF TSP/PM_{10} HIGH VOLUME SAMPLERS

The calibration procedures for the high volume TSP and PM_{10} samplers are the same. In both cases, an adaptor plate, orifice calibration unit and a manometer are used to measure the pressure drop (ΔH) in inches of water across the orifice calibration unit for a fixed flow rate and a flow rate indication. The pressure drop is corrected to standard temperature and pressure conditions and a flowrate (Q_{std}) is determined. The high volume samplers are calibrated to 40 actual cubic feet per minute (acfm). A calibration must be performed at least once per quarter on all TSP and PM_{10} samplers. You will require a scientific calculator to perform the calculations to calibrate the samplers.

OPERATION

3.1 Open the lid of the high volume TSP and PM_{10} samplers.

3.2 Remove the filter holder if there is one present.

3.3 Place a clean filter over the inlet screen.

3.4 Place the adaptor plate over the sampling inlet and tighten down the wing nuts.

3.5 Place the orifice unit on the adaptor plate and attach a hose from the orifice unit tap to a manometer.

3.6 Make certain there are no leaks between the orifice unit and the manometer.

3.7 Operate the sampler for at least 5 minutes to establish thermal equilibrium prior to calibration.

3.8 Measure and record the ambient temperature, T1, and the uncorrected barometric pressure, P_1, during calibration. If you do not have a calibrated barometer, an accurate estimation can be made by obtaining the barometric pressure from a NOAA weather radio. This pressure given is corrected to sea level. If you are not at sea level, use the elevation of your location and the value from Table 1 and subtract the correction value for your elevation from the sea level corrected barometric pressure.

Example:

P_c = Corrected barometric pressure from NOAA weather radio, in. Hg (30.12 in. Hg)

Site elevation; 1,000 feet

CV = Correction value, in. Hg (from Table 1)

P_u = Uncorrected Barometric Pressure, in. Hg (from NOAA weather radio)

$$P_u = P_c - CV$$

$$P_u = 30.12 - 1.066$$

$$P_u = 29.05 \text{ in. Hg}$$

TABLE 1

TABLE 1

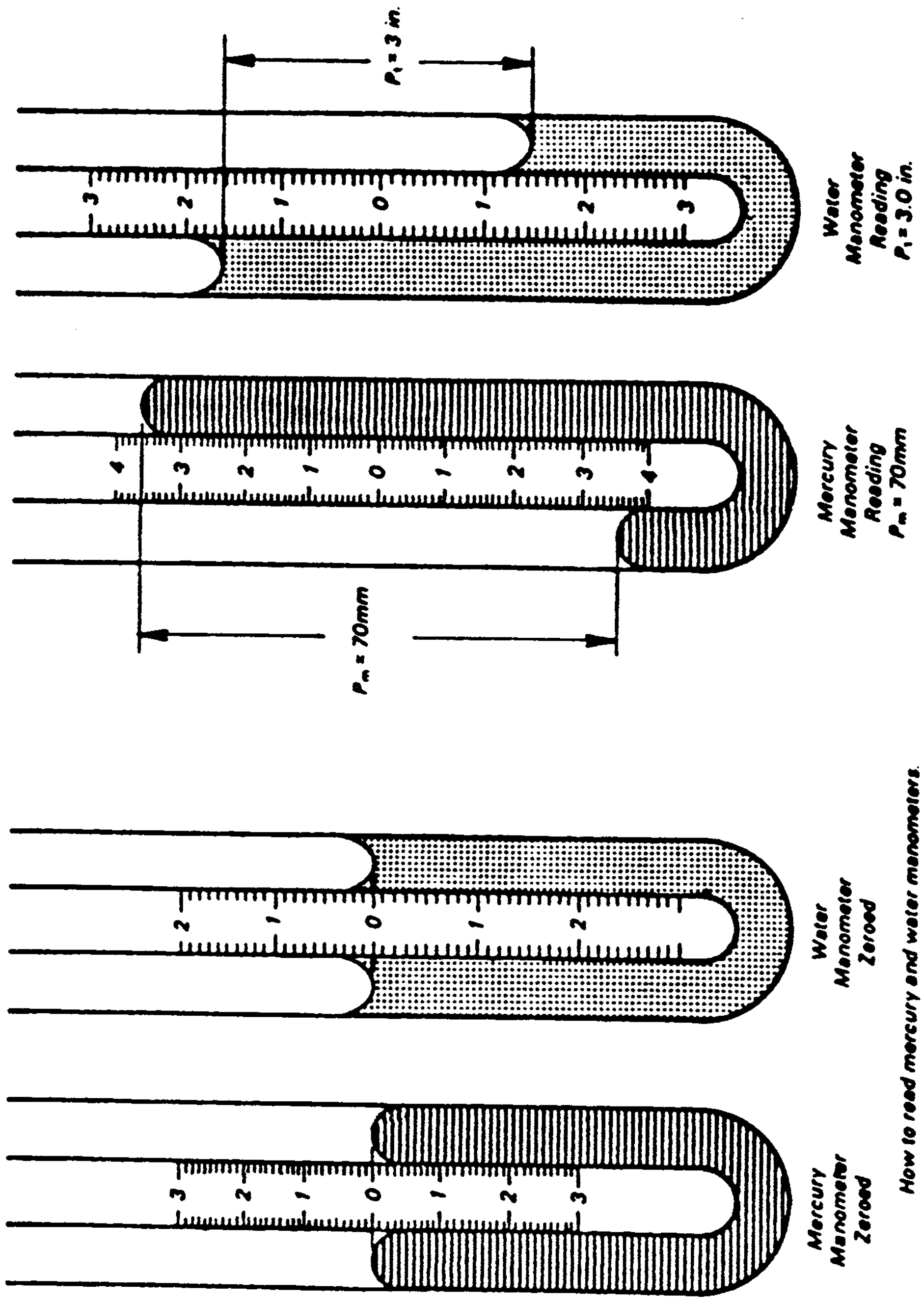
BAROMETRIC SEA LEVEL DIFFERENTIAL FOR STANDARD CONDITIONS

Geopotential[e] feet	Sea Level Differential in.	mm	mb
	ALL CORRECTIONS ADDITIVE		
0	0.000	0.00	0.00
10	.011	.27	.37
20	.022	.55	.73
30	.032	.82	1.10
40	.043	1.10	1.46
50	.054	1.37	1.83
60	.065	1.65	2.20
70	.076	1.92	2.56
80	.086	2.19	2.93
90	.097	2.47	3.29
100	0.108	2.74	3.66
200	.216	5.48	7.30
300	.323	8.20	10.94
400	.430	10.92	14.56
500	.537	13.63	18.17
600	.643	16.33	21.78
700	.749	19.03	25.37
800	.855	21.72	28.95
900	.960	24.39	32.52
1000	1.066	27.07	36.08
2000	2.100	53.35	71.12
3000	3.105	78.86	105.13
4000	4.079	103.62	138.15
5000	5.025	127.64	170.18
6000	5.943	150.95	201.26
7000	6.833	173.56	231.40
8000	7.696	195.49	260.63
9000	8.533	216.74	288.97
10000	9.344	237.35	316.44
11000	10.130	257.31	343.05
12000	10.892	276.66	368.84

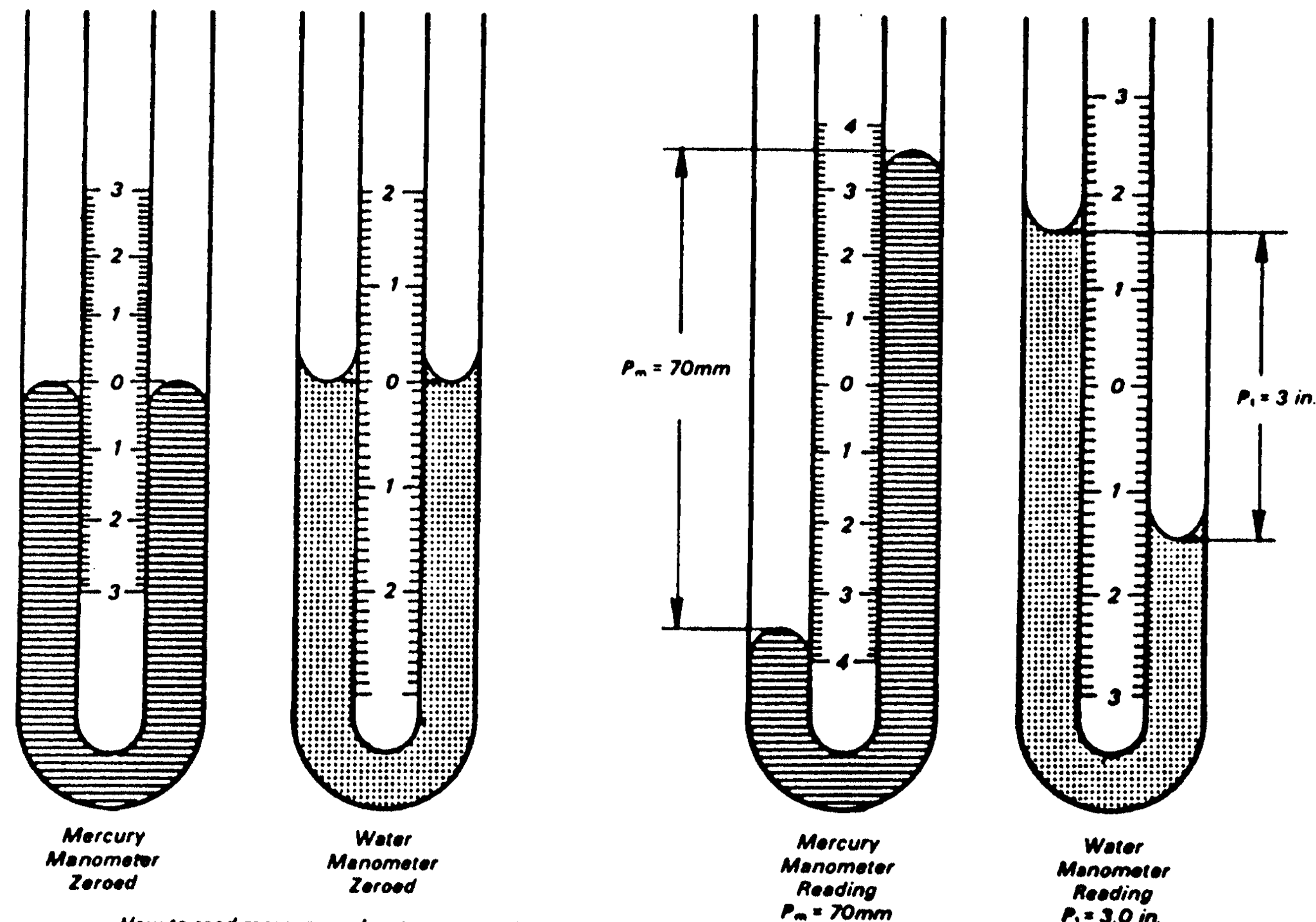
e. The geopotential of a position in the lower atmosphere is very nearly equal to the elevation above sea level.[Ref. 3]

FIGURE 1

FIGURE 1



How to read mercury and water manometers.



How to read mercury and water manometers.

3.9 Read the manometer left and right values (see Figure 1) and add these values to obtain ΔH. Adjust the variable resistance potentiometer on the flow controller box to get the desired ΔH value calculated in steps 3.12 through 3.14. Calibrate to the nearest 0.1 inch on the manometer. Read and record the pressure drop across the orifice.

3.10 Following the calibration, close down the variable resistance calibrator and verify that the controller maintains the same calibrated flow rate. This simulates the loading of the filter.

3.11 Disconnect the adaptor plate and orifice.

<u>CALCULATIONS</u> (see Figure 2)

A calibration curve or Least square fit equation of the curve is provided with each calibration orifice. The calibration curve or equation provides volumetric flow corrected to standard condition (Q_{std}) for a pressure drop (ΔH_{STD}) corrected to standard pressure (29.92 in. Hg) and temperature (298°K). The curve or equation is used to obtain the Q_{std} for various ΔH values.

3.12 Since the samplers are calibrated to 40 (acfm) actual cubic feet per minute (1.13 m^3/min) this value must be converted to standard conditions for the calibration curve ~~or~~ least square fit equation to be used. Standard conditions are obtain by the following: for

$$Q_{STD} = Q_{ACT}\left(\frac{P_1}{29.92}\right)\left(\frac{298}{T_1}\right)$$

3.13 The following example will go through the step by step procedures for calculating the desired ΔH value.

Actual flow rate is converted to standard conditions:

Where: Q_{act} = Desired flow rate at actual conditions,1.13 m^3/min
P_1 = Actual or observed pressure, 29.96 in Hg
T_1 = Actual or observed temperature, 53°F or 12°C

FIGURE 2

Orifice Transfer Standard Certification Worksheet

	1	2	3	4	5	6	7	7a
Run No.	Meter reading start V_1 (m^3)	Meter reading stop V_2 (m^3)	Elapsed time t (min)	Volume measured V_m (m^3)	Differential pressure (at inlet to volume meter) ΔP (mm Hg or in.)	(X) Flow rate Q_{std} (std m^3/min)	Pressure drop across orifice ΔH ☑ (in) or ☐ (cm) of water	$\sqrt{\Delta H \left(\frac{P_1}{P_{std}}\right) \frac{298}{T_1}}$ (Y)
1			1.307	1.034	4.1	0.791	1.5	1.253
2			0.855	1.026	9.6	1.200	3.5	1.914
3			0.716	1.021	13.5	1.426	5.0	2.287
4			0.650	1.017	16.3	1.565	6.0	2.506
5			0.560	1.010	21.5	1.804	8.0	2.893
6								

Recorded Calibration Data

Standard volume meter No. 7509364

Transfer standard type: ☑ orifice ☐ other

Model No. VRC Serial No. E-75

(8) P_1 768.6 mm Hg (or in.) (10) P_{std} 760 mm Hg (or 29.92 in.)

(9) T_1 288 K (11) T_{std} 298 K

By J. Lazaro

Date 9-25-90

Calculation Equations

(1) $V_m = V_2 - V_1$

(2) $V_{std} = V_m \left(\frac{P_1 - \Delta P}{P_{std}}\right)\left(\frac{T_{std}}{T_1}\right)$

(3) $Q_{std} = \frac{V_{std}}{t}$

Least Squares Calculations

linear ($Y = mX + b$) regression equation of $Y = \sqrt{\Delta H (P_1/P_{std})(298/T_1)}$ on $X = Q_{std}$ for Orifice Calibration Unit (i.e., $\sqrt{\Delta H (P_1/P_{std})(298/T_1)} = mQ_{std} + b$)

Slope (m) = 1.6199 Intercept (b) = −0.028 Correlation coefficient (r) = 0.99999

To use for subsequent calibration: $X = \frac{1}{m}(Y - b)$; $\boxed{Q_{std} = \frac{1}{m}\left[\sqrt{\Delta H \left(\frac{P_2}{P_{std}}\right)\left(\frac{298}{T_2}\right)} - b\right]}$

$$Q_{STD} = 1.13 * \left(\frac{29.96}{29.92} * \frac{298}{285}\right) = 1.183$$

From the calibration curve or equation for the calibration orifice identify the slope (m) and intercept (b) values.

y = mx + b

Where:

y = ΔH_{std} manometer reading - at standard conditions (in. H_2O)

m = Intercept from orifice calibration worksheet (1.6199)

x = Desired flow at standard conditions, Q_{std} (1.183 m^3/min or 41.8 scfm) ?

b = Slope from orifice calibration worksheet (-0.028)

Solve for y:

y = (1.6199 * 1.183) + (-0.028)

y = 1.889 = ΔH_{std}

Correct ΔH_{std} to actual or ambient conditions from standard conditions

$$\Delta H_A = \Delta H^2_{std} * \left(\frac{29.92}{P_1} * \frac{T_1}{298}\right)$$

Where:

$$\Delta H_A = (1.889)^2 * \left(\frac{29.92}{29.96} * \frac{(12+273)}{298}\right)$$

ΔH_A = 3.41 in. H_2O

3.14 Record the manometer reading (ΔH), sample flow indicator (magnehelic gauge value) and flow rate (Q_{std}) on the high volume sampler calibration data sheet (Figure 3).

4.0 QUALITY ASSURANCE AUDIT PROCEDURES

Essentially, the procedure for a high volume TSP and PM_{10} sampler audit is the same as for a calibration. A calibration orifice or variable resistance orifice, traceable to the NBS, is used to check for a specified flow rate. Since a flow controller is used with the samplers, only an one point audit at 1.13 m^3/min or 40 scfm is necessary. As per federal regulations, a different orifice is used for the audits than for the calibration.

4.1 Use the high volume sampler calibration/audit data sheet to record the data.

4.2 Place a clean filter on the high volume sampler and place the adaptor plate with the audit orifice on top. Tighten the wing nuts.

4.3 Attach hose from the orifice unit tap to a manometer. Make certain there are no leaks between the orifice unit and manometer.

4.4 Operate the sampler for 5 minutes to establish thermal equilibrium prior to the audit.

4.5 Measure and record the ambient temperature, T_1, and the barometric pressure, P_1, during the audit (Figure 4).

4.6 Record both the readings from the manometer sample flow indicator (magnehelic gauge) and flow recorder (Figure 4).

4.7 The audit flow rate is determined by correcting the manometer reading (ΔH) to standard conditions (ΔH_{std}) and applying it to the calibration equation for the audit orifice. The following example will provide step by step instructions:

Example:

P_1 = Actual or observed pressure, 29.96 in. Hg

FIGURE 3

FIGURE 3

TSP/PM-10 CALIBRATION/AUDIT
CALIBRATION DATA SHEET

DATE ______________________ ORIFICE NO. ______________________

SITE ______________________ SAMPLER S/N ______________________

SAMPLER NO. ______________________ CAL PRESS (in/Hg) ______________________

CAL TEMP (F) ______________________ ELEVATION (ft) ______________________

OPERATOR ______________________

BARO PRESS UNCORR = BARO PRESS CORR - CORRECTION VALUE

______________ = ______________ - ______________

DESIRED FLOW AT ACTUAL CONDITIONS: 1.13 m^3/min (40 acfm)

FLOW (m^3/min) = FLOW (cfm) * 0.02832

STD Temp 76

$$Q_{std} = 1.13 \cdot \left(\frac{\text{BARO PRESS UNCORR} \ (\text{"Hg})}{29.92} \cdot \frac{536.58 \text{ R}}{\text{TEMP} \ (°F) + 459.58 \text{ R}} \right)$$

0.9964

$$\underline{1.12} = 1.13 \cdot \left(\frac{29.98}{29.92} \cdot \frac{536.58 \text{ R}}{80 + 459.58} \right)$$

INTERCEPT AND SLOPE FROM CALIBRATION TRANSFER STANDARD REGRESSION

$$\Delta H_{std} = (\text{SLOPE} \cdot Q_{std}, \ m^3/\text{min}) + \text{INTERCEPT}$$

$$\underline{1.8} = (\underline{1.607} \cdot \underline{1.12}) + \underline{0.001}$$

3.243

$$\Delta H_{Actual} = \Delta H_{std}^{\ 2} \cdot \left(\frac{29.92}{\text{BARO PRESS UNCORR}} \cdot \frac{\text{TEMP} + 459.58}{536.58 \text{ R}} \right)$$

$$\underline{\overset{7.4}{3.25}} = \underline{\qquad}^{\ 2} \cdot \left(\frac{29.92}{\underline{\qquad}} \cdot \frac{\underline{\qquad}}{536.58} \right)$$

MANOMETER

(ΔH_{ACTUAL} H_2O")

UNLOADED	3.25
LOADED	

COMPUTER FILE ______________________

FIGURE 4

TSP/PM-10 CALIBRATION/AUDIT
AUDIT DATA SHEET

DATE ______________________

SITE ______________________

SAMPLER NO. ______________________

AUDIT TEMP (F) ______________________

ORIFICE NO. ______________________

SAMPLER S/N ______________________

AUDIT PRESS (in/Hg) ______________________

ELEVATION (ft) ______________________

OPERATOR ______________________

BARO PRESS UNCORR = BARO PRESS CORR - CORRECTION VALUE

________ = ________ - ________

$$\Delta H_{std} = \sqrt{\Delta H_{Actual} \cdot \left(\frac{\text{BARO PRESS UNCORR}}{29.92} \cdot \frac{536.58\ R}{\text{TEMP} + 459.58} \right)}$$

$$\_\_\_\_ = \sqrt{\_\_\_\_ \cdot \left(\frac{\_\_\_\_}{29.92} \cdot \frac{536.58}{\_\_\_\_} \right)}$$

INTERCEPT AND SLOPE FROM CALIBRATION TRANSFER STANDARD REGRESSION

FLOW (m^3/min) = (ΔH - INTERCEPT)/SLOPE

________ = (________ - ________) / ________

FLOW (cfm) = FLOW (m^3/min) * 35.31

________ = ________ * 35.31

MANOMETER

(ΔH_{ACTUAL} H_2O")

UNLOADED	
LOADED	

TSPPM10A-AT

T_1 = Actual or observed temperature, 53°F or 12°C

ΔH = Observed manometer reading, 3.3 in. H_2O

$$\Delta H_{std} = \sqrt{\Delta H_A * \left(\frac{P_1}{29.92} * \frac{298}{T_1}\right)}$$

$$\Delta H_{std} = \sqrt{3.3 * \left(\frac{29.96}{29.92} * \frac{298}{(12+273)}\right)}$$

ΔH_{std} = 1.86

y = mx + b

or

x = (y - b)/m

m = Slope from audit orifice calibration worksheet

x = Flow corrected to standard conditions, Q_{std} (scfm)

b = Slope from audit orifice calibration worksheet

y = Manometer reading at standard conditions, ΔH_{std} (in. H_2O)

$$x = \frac{1.77 + 0.028}{1.6199}$$

x = 1.165 m^3/min or 41.1 scfm

4.8 Use the audit flow measurement as the known and the sampler's flow as observed, to calculate percent difference.

$$\text{Percent difference} = \left(Known - observed \,/\, Known\right) * 100$$

$$\text{Percent difference} = \left((38.85 - 40.00) \,/\, 38.85\right) * 100$$

$$= 1.63$$

4.9 Figure 4 represents the output from the TSPPm10.WK1 LOTUS spreadsheet which will perform the above calculations.

5.0 EQUIPMENT

5.1 High volume sampler orifice calibration unit

5.2 Water manometer

5.3 Clean high volume sampler filter

5.4 Barometer or weather radio

5.5 Thermometer

5.6 Calculator

5.7 Basic tools for adjustment of high volume sampler

6.0 FREQUENCY

High volume samplers should be calibrated with a calibration orifice at the following frequency:

6.1 Upon receipt of sampler from manufacturer

6.2 After motor maintenance such as brush replacement

6.3 After repair or replacement of flow indicator device such as a magnehelic gauge

FIGURE 4

ORIGINATOR ______________
APPROVED ______________
EFFECTIVE ______________

SUBJECT: INSTALLATION, OPERATION AND MAINTANCE OF TSP AND PM10 HIGH VOLUME SAMPLERS

1.0 SCOPE

The following procedures describe the installation and operation of the General Metal Works TSP and PM10 samplers. The TSP and PM10 sampler both collect airborne particular on 8 x 10 filters for gravimetric and metals analysis. The TSP sampler collects Total Suspended Particulate while the PM10 sampler has a size selective inlet which only allows particulate matter with a diameters of 10 microns or less to be collected on the filter.

2.0 REFERENCES/FORMS

2.1 40 CFR, PART 50, APPENDIX B. Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)

2.2 40 CFR, PART 50, APPENDIX J. Reference Method for the Determination of Particulate Matter as PM10 in the Atmosphere.

2.3 High volume sampling data sheet

2.4 Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), USEPA - 450/14-87-007, May 1987.

3.0 INSTALLATION OF THE TSP SAMPLERS

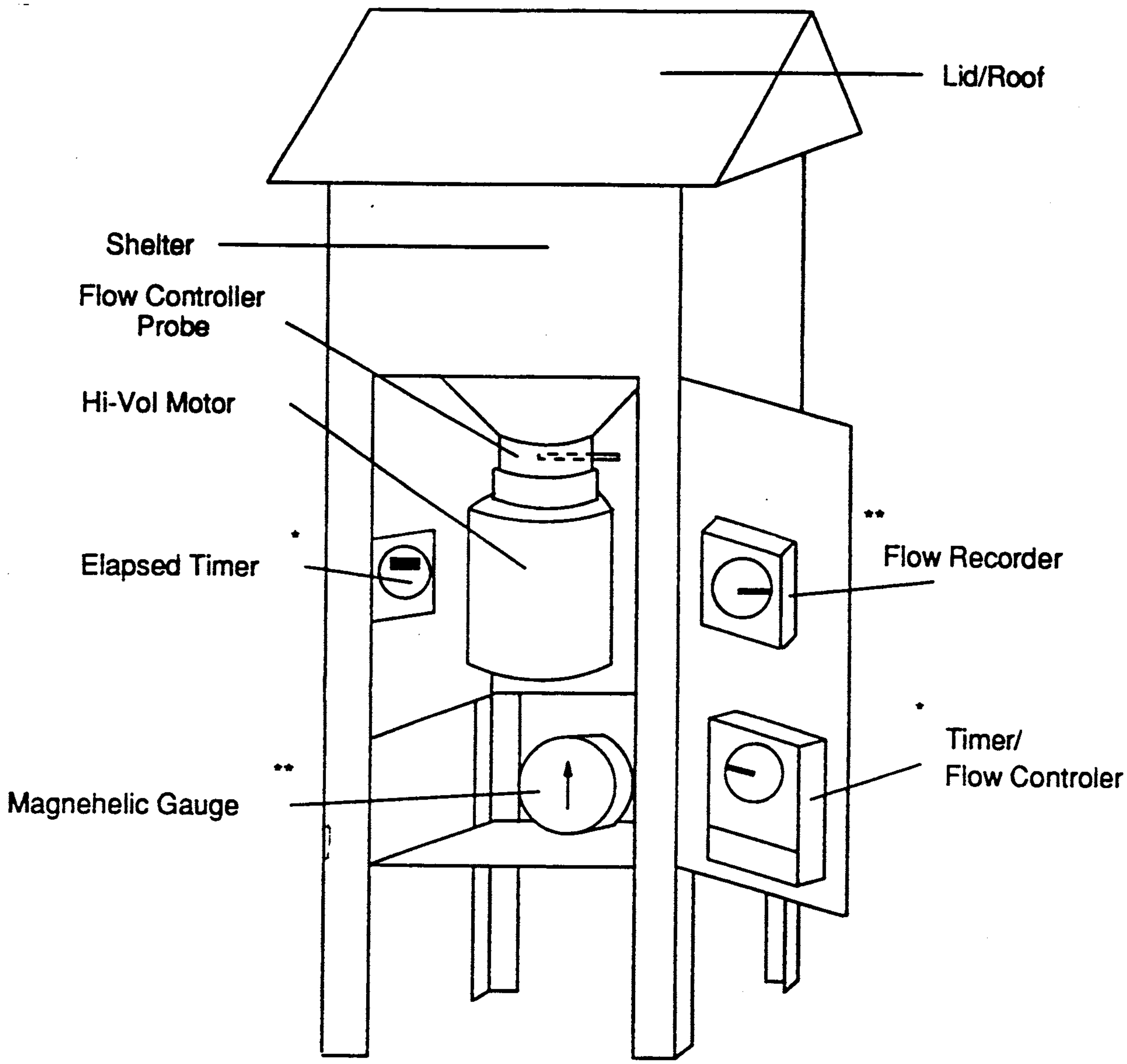
Figure 1 illustrates the configuration of components of a TSP sampler.

3.1 Mount the high volume sampler on a level, secure platform using an angle bracket for each leg. Also attach the roof to the sampler by placing the hinge on the outside of the sampler top and tightening the nuts.

3.2 Secure the front and rear catch to the roof of the sampler, using the provided screws and nuts. Also attach the rear lid clasp.

FIGURE 1

Hi-Volume (Hi-Vol) Total Suspended Particulate (TSP) Sampler



Note: * Some units have the elapsed time meter incorporated into the Timer/Flow Controler.
In some units the flow controller will be seperate from the timer.

** Some units may not have a Flow Recorder or Magnehelic gauge.

3.3 Fasten the filter holder to the motor/blower assembly, making certain that the holder is on straight.

3.4 The flow controller probe, should be placed in the 17/64" hole in the straight portion of the filter holder throat.

3.5 Secure the flow probe in the throat section with a stainless steel worm gear hose clamp. Rotate the probe so that sensor portion is facing directly into the flow which is towards the top of the sampler. Lower the filter holder/blower assembly into the 7" x 9" hole in the top of the shelter.

3.6 Mount the elapsed timer on the supporting bracket inside the sampler below the high volume motor if not aleady pre-mounted.

3.7 Mount flow recorder on the inside of the sampler door if necessary.

3.8 Mount the timed flow controller on the inside of the sampler door, if necessary

3.9 Ensure the electrical connections between the timer, motor, flow controller and the flow recorder are correct. Connectors should be, male end from the flow recorder and flow controller to a 3-way adapter plug. This 3-way plug should then be connected to the female plug on the timer. Finally, connect the male end from the high volume motor to the female end on the flow controller. The remaining male end from the timer should be connected to a 115 VAC, 15 amp outlet.

3.10 SAMPLER PLACEMENT

The sampler should be placed away from any roads (as far as possible) to prevent vehicle generated dust from directly impacting the sampler which can adversely effect the samples collected. Placement should be in a representative location for the particular sampling activity, away from any local activities which could disrupt sampling and generate unnecessary particulate matter. The sampler also needs to be mounted level and in a secure manner to prevent it from tipping over.

Specific guidance for siting of a TSP sampler is contained in Ambient Monitoring Guidance for Prevention of Significant Deterioration (PSD).

4.0 INSTALLATION OF THE PM-10 SAMPLERS

The PM10 sampler is identical to the TSP Sampler with the exception of the inlet head which fractionates the particulate so only particles less the 10 micron are collected on the filter. (Figure 2) An existing TSP sampler can be converted to a PM-10 sampler by installing the PM10 head onto it.

4.1 Mount the PM10 samplers on the platform using an angle bracket for each leg.

4.2 Remove the front and rear catch and rear lid clasp.

4.3 Attach the PM10 inlet head to the sampler frame. The sampler frame must be securely mounted before installing the head. The weight of the head will cause the sampler to fall over if the head is lifted open while not secure. Attach the head following the manufactors instructions.

4.4 The remaining setup is identical to that of the TSP sampler. See steps 3.1 to 3.9.

5.0 OPERATING PROCEDURES FOR TSP SAMPLERS

5.1 Load an unexposed 8" x 10" filter directly into the sampler as presented in Figure 3 or into a filter cassette which is then placed on the sampler.

5.2 Loading filter without filter cassette.

5.2.1 Open the high volume sampler lid.

5.2.2 Unscrew the retaining bracket from the support screen.

5.2.3 Place the numbered side of the filter downward on the support screen. Record the filter number on the data sheet. Care must be taken so the filter is squarely fitted on the support screen.

5.2.4 Replace the retaining bracket back and tighten all four screw equally. Failure to do so may result in leaks around the foam seal.

5.3 Loading filter with filter cassette.

5.3.1 Follow steps 5.2.1 and 5.2.2

5.3.2 Remove the aluminum cover over the loaded filter cassette.

FIGURE 2

PM-10 HI-VOLUME SAMPLER

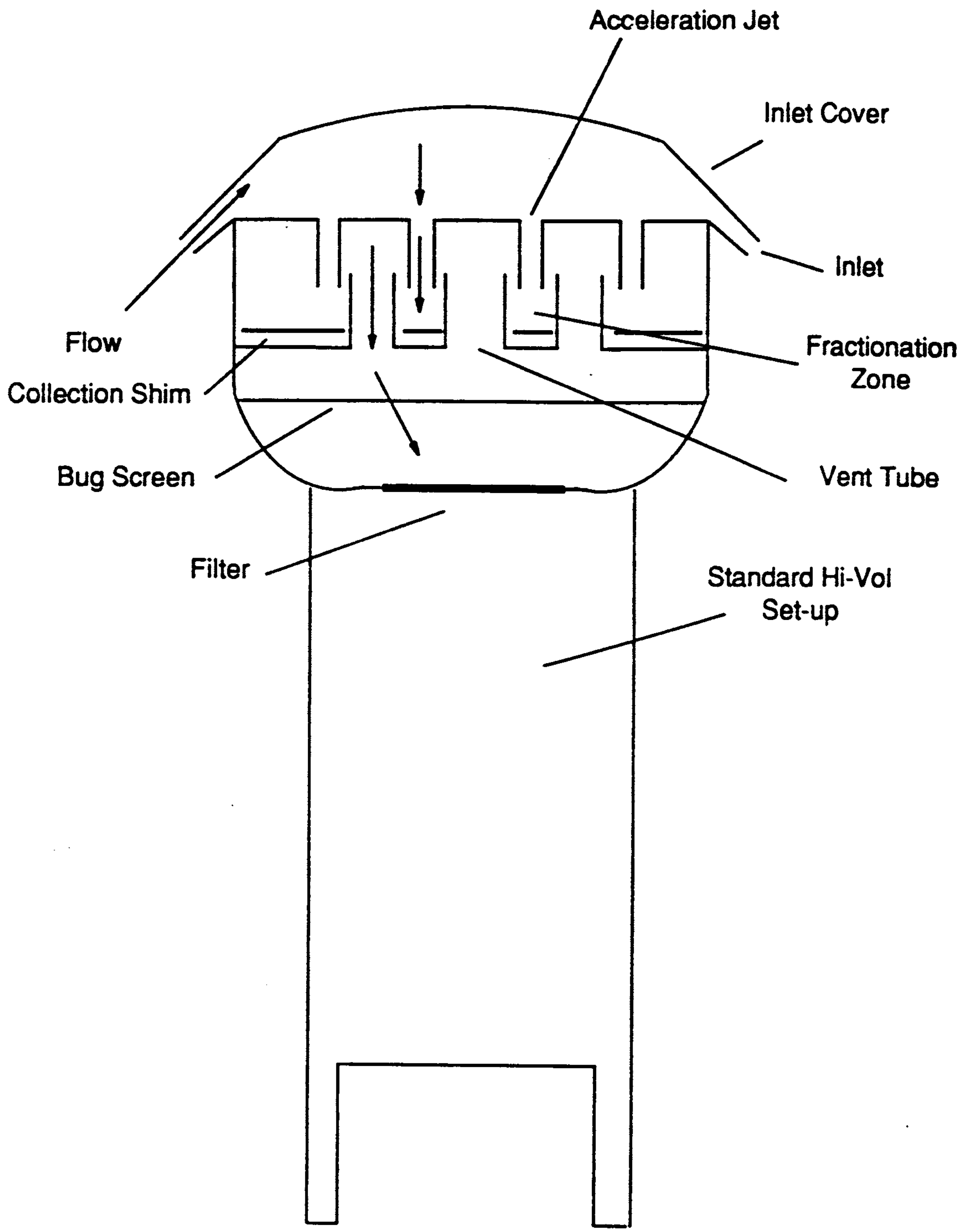
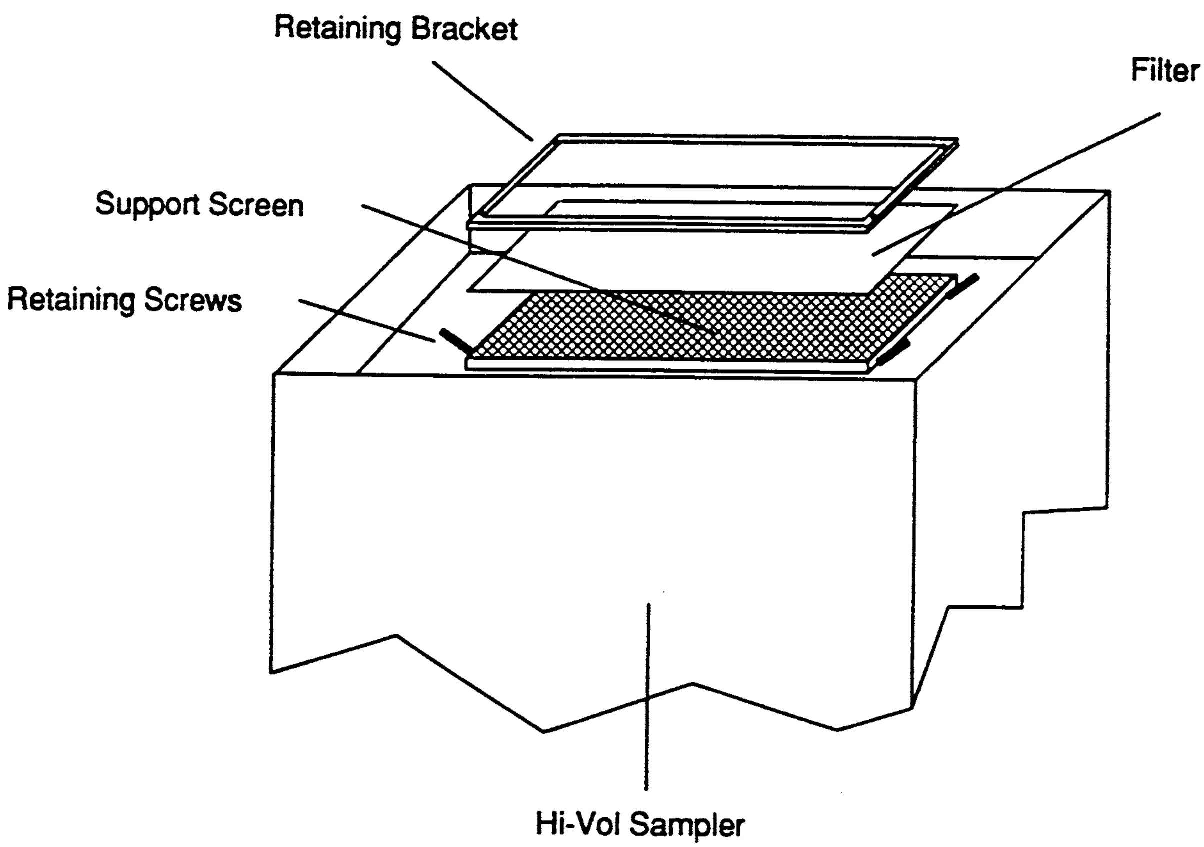


FIGURE 3

Set-Up of Filter in Hi-Vol TSP Sampler



5.3.3 Place the filter cassette (containing an unexposed filter) over the screen and tighten wing nuts.

5.4 Open the bottom door to the high volume sampler, open the chart recorder door, and put a fresh chart in.

5.5 Check to see if the time is set correctly on the timer.

5.6 Check to see that the timer is set for midnight to midnight for automatic operation. The sampler can be turned on and off manually for manual operations.

5.6.1 Most units will have a seven-day mechanical skip time. Time is set by setting the trips for the sampling period desired and the timer set to the correct time.

Example: Sampling period is 24 hours.

Sampling day is 11 December (Friday) 1987.

Sampling will begin on 10 December at 12:00 midnight and end on 11 December at 12:00 midnight. Timer will be set to Thursday, 12 midnight, start - and Saturday, 12 midnight stop.

5.6.2 You should rotate the timer around once or twice to check if the timer trips is working properly.

5.7 If the unit is equipped with an electronic timer, instructions on its operation will be supplied with the unit.

5.8 Close the timer door, chart door, and high volume sampler door making sure no hoses or power cords are caught. Record sampling information on sampling data sheet for start of period.

5.9 Follow the reverse process of loading the filter when unloading after sampling period has ended.

5.10 When a filter cassette is used replace the aluminum cover before removing. When unloading the filter outside care must be taken during windy conditions.

5.11 Fold the filter in half with the exposed side inward. Place the filter paper in the folder being certain to match the number on the filter paper with the number on the folder Record sampling information on sampling data sheet for end of period.

6.0 OPERATING PROCEDURES FOR PM10 SAMPLERS

6.1 Unfasten the inlet cover to expose the collection shim. Wipe the collection shim clear with a rag and reapply a silicon spray. The inlet head needs to be cleaned after every two 24-hour sampling period in dusty areas and every four 24 hour sampling periods otherwise.

6.3 Follow steps 5.1 through 5.11 for the high volume sampler.

6.4 Tilt the inlet downwind and fasten all the locks.

7.0 ROUTINE MAINTENANCE

7.1 ELECTRONICS

7.1.1 Unplug the power cord. Loosen the steel worm gear hose clamp and remove the flow probe.

7.1.2 Using a small camel's hair brush and distilled water, carefully clean the probe. Following this, rinse the probe with alcohol.

7.1.3 Remount the flow probe as described in the installation section.

7.2 MOTOR

7.2.1 Replace the motor brushes by first unscrewing the motor from the filter holder body.

7.2.2 Remove the four bolts holding the top of the motor casing and slide the motor out. The brushes are located at the bottom of the motor.

7.2.3 Remove the brush holder clamp and release the expended brush.

7.2.4 Release the quick disconnect tab from the brass sleeve of the expanded brush and mount it on a new brush.

7.2.5 Replace the brush holder clamp on the brush and secure it to the motor with the screws. Make sure brush is seated on the second notch from the carbon end.

7.2.6 Use the procedure as defined above for the other brush.

7.2.7 On reassembly and handling, the lead wires must be kept away from rotating parts and the motor frame.

7.2.8 To achieve best performance, the new brushes should be seated before full voltage is applied. Apply approximately 50 percent voltage for thirty minutes to accomplish this seating. If reduced voltage is unavailable, connect two motors of similar rating in series for thirty minutes to accomplish the brush seating.

7.2.9 Record date of installation of new brushes on tags inside of sampler door. Ensure rubber gasket is seated properly on top of the motor housing.

FIGURE 4

HIGH VOLUME SAMPLING DATA SHEET

Site ______________________ Performed by ______________________

Date	Sampling Location I.D.	Filter Number	Sampling Period, hr		Pump Hours,(min or hrs)			DIAL GAUGE READING		Indicated Flow		Sampler Number	Comments
			Start	Stop	Start	Stop	Elapsed	PRE	POST	PRE	POST		

CHECKLIST

LOADING

- ☐ 1. Load filter
- ☐ 2. Record filter number.
- ☐ 3. Turn sampler on, record dial gauge reading and indicated flow.
- ☐ 4. Turn sampler off and record pump hrs.
- ☐ 5. Set timer for operation.

UNLOADING

- ☐ 1. Record pump hours.
- ☐ 2. Turn sampler on and record final dial gauge reading and indicated flow.
- ☐ 3. Turn sampler off.
- ☐ 4. Unload filter and place in evelope.
- ☐ 5. Sampler may be reloaded for next sample at this time.

ADDITIONAL COMMENTS:

Data Checked by ______________________ Date ______________________

APPENDIX C

SITE-SPECIFIC QAPP INFORMATION

B.5.1.15 Method SW6010B-Trace Elements (Metals) by Inductively Coupled Plasma Atomic Emission Spectroscopy for Water and Soil

Samples are analyzed for trace elements or metals using Method SW6010B for water and soils. Analysis for most metals requires digestion of the sample. Following digestion, the trace elements are determined simultaneously or sequentially using Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES). The elements and corresponding MQLs for this method are listed in Table B5.1.15-1.

Table B5.1.15-1. MQLs for Method SW6010B

Parameter/Method	Analyte	Water		Soil	
		MQL	Unit	MQL	Unit
ICP-AES for Metals	Aluminum	0.2	mg/L	22.0	mg/kg
SW6010B	Antimony	0.05	mg/L	10.0	mg/kg
	Arsenic	0.03	mg/L	40.0	mg/kg
	Barium	0.005	mg/L	1.0	mg/kg
	Beryllium	0.005	mg/L	1.0	mg/kg
	Cadmium	0.007	mg/L	0.50	mg/kg
	Calcium	1.1	mg/L	100	mg/kg
	Chromium	0.01	mg/L	20	mg/kg
	Cobalt	0.006	mg/L	10.0	mg/kg
	Copper	0.01	mg/L	2.0	mg/kg
	Iron	0.20	mg/L	3.0	mg/kg
	Lead	0.025	mg/L	10.0	mg/kg
	Magnesium	0.10	mg/L	100	mg/kg
	Manganese	0.003	mg/L	2.0	mg/kg
	Molybdenum	0.015	mg/L	3.0	mg/kg
	Nickel	0.01	mg/L	2.0	mg/kg
	Potassium	0.50	mg/L	600	mg/kg
	Selenium	0.03	mg/L	3.0	mg/kg
	Silver	0.01	mg/L	1.0	mg/kg
	Sodium	1.0	mg/L	10.0	mg/kg
	Thallium	0.08	mg/L	6.0	mg/kg
	Vanadium	0.01	mg/L	1.0	mg/kg
	Zinc	0.01	mg/L	1.0	mg/kg

Table B5.1.15-2. QC Acceptance Criteria for Method SW6010B

Method	Analyte	Accuracy Water (% R)	Precision Water (RPD)	Accuracy Soil (% R)	Precision Soil (RPD)
SW6010B	Aluminum	75-125	≤ 20	75-125	≤ 35
	Antimony	75-125	≤ 20	75-125	≤ 35
	Arsenic	75-125	≤ 20	75-125	≤ 35
	Barium	75-125	≤ 20	75-125	≤ 35
	Beryllium	75-125	≤ 20	75-125	≤ 35
	Cadmium	75-125	≤ 20	75-125	≤ 35
	Calcium	75-125	≤ 20	75-125	≤ 35
	Chromium	75-125	≤ 20	75-125	≤ 35
	Cobalt	75-125	≤ 20	75-125	≤ 35
	Copper	75-125	≤ 20	75-125	≤ 35
	Iron	75-125	≤ 20	75-125	≤ 35
	Lead	75-125	≤ 20	75-125	≤ 35
	Magnesium	75-125	≤ 20	75-125	≤ 35
	Manganese	75-125	≤ 20	75-125	≤ 35
	Molybdenum	75-125	≤ 20	75-125	≤ 35
	Nickel	75-125	≤ 20	75-125	≤ 35
	Potassium	75-125	≤ 20	75-125	≤ 35
	Selenium	75-125	≤ 20	75-125	≤ 35
	Silver	75-125	≤ 20	75-125	≤ 35
	Sodium	75-125	≤ 20	75-125	≤ 35
	Thallium	75-125	≤ 20	75-125	≤ 35
	Vanadium	75-125	≤ 20	75-125	≤ 35
	Zinc	75-125	≤ 20	75-125	≤ 35

B.5.1.16 Method SW6020-Trace Elements (Metals) by Inductively Coupled Plasma Mass Spectroscopy for Water and Soil

Samples are analyzed for trace elements or metals using Method SW6020 for water and soils. Analysis for total (i.e., acid leachable) metals requires digestion of the sample. Following digestion, the trace elements are determined simultaneously or sequentially using Inductively Coupled Plasma Mass Spectroscopy (ICP/MS). The elements and MQLs for this method are listed in Table B5.1.16-1.

Table B5.1.16-1. MQLs for Method SW6020

Parameter/Method	Analyte	Water		Soil	
		MQL	Unit	MQL	Unit
ICP/MS for Metals	Aluminum	0.02	mg/L	2.0	mg/kg
SW6020	Antimony	0.001	mg/L	0.10	mg/kg
	Arsenic	0.02	mg/L	2.0	mg/kg
	Barium	0.003	mg/L	0.30	mg/kg
	Beryllium	0.003	mg/L	0.30	mg/kg
	Cadmium	0.002	mg/L	0.20	mg/kg
	Chromium	0.004	mg/L	0.40	mg/kg
	Cobalt	0.0008	mg/L	0.08	mg/kg
	Copper	0.006	mg/L	0.60	mg/kg
	Lead	0.002	mg/L	0.20	mg/kg
	Manganese	0.002	mg/L	0.20	mg/kg
	Nickel	0.002	mg/L	0.20	mg/kg
	Selenium	0.001	mg/L	0.10	mg/kg
	Silver	0.002	mg/L	0.20	mg/kg
	Thallium	0.0002	mg/L	0.02	mg/kg
	Zinc	0.025	mg/L	2.5	mg/kg

Table B5.1.16-2. QC Acceptance Criteria for Method SW6020

Method	Analyte	Accuracy Water (% R)	Precision Water (RPD)	Accuracy Soil (% R)	Precision Soil (RPD)
SW6020	Aluminum	80–120	≤ 15	80–120	≤ 25
	Antimony	80–120	≤ 15	80–120	≤ 25
	Arsenic	80–120	≤ 15	80–120	≤ 25
	Barium	80–120	≤ 15	80–120	≤ 25
	Beryllium	80–120	≤ 15	80–120	≤ 25
	Cadmium	80–120	≤ 15	80–120	≤ 25
	Chromium	80–120	≤ 15	80–120	≤ 25
	Cobalt	80–120	≤ 15	80–120	≤ 25
	Copper	80–120	≤ 15	80–120	≤ 25
	Lead	80–120	≤ 15	80–120	≤ 25
	Manganese	80–120	≤ 15	80–120	≤ 25
	Nickel	80–120	≤ 15	80–120	≤ 25
	Selenium	80–120	≤ 15	80–120	≤ 25
	Silver	80–120	≤ 15	80–120	≤ 25
	Thallium	80–120	≤ 15	80–120	≤ 25
	Zinc	80–120	≤ 15	80–120	≤ 25

APPENDIX D

STANDARD OPERATING PROCEDURES

INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment. This SOP is similar to SOP Number 1001.03 for collecting near surface soil samples with a hand auger.

PROCEDURE

Surface soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of soil. Near-surface soils may be easily sampled using a spade, trowel, or hand scoop.

<u>Sample Preservation</u>

Cooling to 4°C ± 2°C, supplemented by a minimal holding time, is suggested.

<u>Interferences and Potential Problems</u>

There are two primary interferences or potential problems associated with soil sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated (disposable) sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results. Homogenization may also affect sample representativeness where the analytical requirements include volatile organic compounds.

<u>Equipment or Apparatus</u>

The equipment used for sampling may be selected from the following list, as appropriate:

- Tape measure
- Survey stakes or flags
- Stainless steel, plastic, or other appropriate homogenization bucket or bowl
- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice
- Decontamination supplies and equipment
- Canvas or plastic sheet
- Spatulas/spades/shovels
- Scoops

- Plastic or stainless steel spoons
- Trowel

Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and what equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment from the list above.
3. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
4. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.
5. Decontaminate or preclean equipment, and ensure that it is in working order.
6. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner or other responsible party prior to soil sampling.
7. Evaluate safety concerns associated with sampling that may require use of personal protective equipment and/or air monitoring.

Surface Soil Sample Collection

Collect samples from the near-surface soil with tools such as spades, shovels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Avoid the use of devices plated with chrome or other target analyte materials.

The following procedures should be followed when collecting surface soil samples:

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.
2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.
3. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or if composite samples are to be collected, place a sample from another sampling interval into the

homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

4. Fill hole created through sampling with unused material or other appropriate backfill material (sand).
5. Record applicable information into field log book or appropriate forms as documentation of sampling.

SOP	**1001.04**
GROUP	Sampling Procedures
SUB-GROUP	Soil Sampling Prodedures
TITLE	Sampling of Stockpiled Soil

DATE	11/19/2001	FILE	1001-04.DOC	PAGE	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) describes the procedure for collecting representative samples of stockpiled soil. Representative soil samples may be collected for analysis to determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health and welfare, or the environment. Soil samples are also typically collected from stockpiles for classification prior to entry into a soil treatment process or offsite disposal, or after treatment to verify the effectiveness of the treatment system. This soil sampling procedure is closely related to SOP Nos. 1001.01, 1001.03, and 1001.10 regarding soil sampling procedures.

PROCEDURE

Stockpiles will be sampled as follows:

- Soil may be collected from the surface of a stockpile using the surface soil sampling procedure (SOP 1001.01) or from deeper within the stockpile according to the hand augering procedure (SOP 1001.03) as appropriate to obtain the required soil material. The procedure to be used to physically collect soil samples from stockpiles are described in SOP Nos. 1001.01, 1001.03, and 1001.10 (soil compositing). Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. Equipment that may be used as part of the soil compositing procedure is identified under SOP Nos. 1001.01 and 1001.03 where general soil sampling methods are described.

- Each project may have different stockpile sampling objectives and requirements. Therefore, the sampling of stockpiles should be addressed in a site-specific Sampling and Analysis Plan and the soil sampling implemented in accordance with this plan.

- Samples may be collected from discrete locations in a pile and submitted for laboratory analysis, as described in SOP Nos. 1001.01 and 1001.03. More typical is that several samples from a single stockpile will be collected and composited to prepare a single sample for laboratory analysis. Collecting composite samples from a stockpile is recommended and will generally be performed to better characterize the soil in the pile. The number of samples to collected from a stockpile and composite will depend on the size of the stockpile and the particular requirements of the project. Typically compositing for characterization purposes is on the order of 1 composite soil sample for every 50 cubic yards. Compositing will be performed in accordance with SOP 1001.10.

REFERENCES

SOP No. 1001.01 - Standard Operating Procedure, Surface Soil Sampling
SOP No. 1001.03 - Standard Operating Procedure, Shallow Subsurface and Near Surface Soil Sampling
SOP No. 1001.10 - Standard Operating Procedure, Soil Compositing

INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative surface water samples. Analysis of surface samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of pollutants present a risk to public health, welfare, or the environment.

PROCEDURE

Surface water samples may be collected using a variety of methods and equipment. The methods and equipment used are usually dependent on the location of the body of water being sampled. Sampling can be performed by merely submerging the sample container, a weighted-bottle sampler with stopper, a bailer, or by pump assisted methods. Several types of pumps can be used for sampling depending on the objectives of sampling and the site conditions.

Sample Preservation

Samples are to be preserved in conformance with the site-specific Quality Assurance Project Plan, Sampling and Analysis Plan or work plan. In general these requirements include refrigeration to 4°C, addition of appropriate additives (HCl, H_2SO_4, NaOH) to adjust and fix pH, and a defined maximum holding time. If a site-specific plan is not available, the analytical laboratory should be consulted for the appropriate preservation procedures.

Interferences and Potential Problems

There are two primary interferences or potential problems associated with surface water sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, undue disturbance of the sample matrix, or improper sample location.

Equipment or Apparatus

- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice
- Decontamination supplies and equipment
- Discharge tubing
- Sample containers
- Sampling devices

Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment.
3. Decontaminate or preclean equipment, and ensure that it is in working order.
4. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.

Surface Water Sampling

Samples from shallow depths can be readily collected by merely submerging the sample container. In flowing surface water bodies, the container's mouth should be positioned so that it faces upstream, while the sampling personnel stand downstream so as not to stir up sediment that could potentially contaminate the sample.

Collecting a representative sample from a larger body of surface water requires that samples be collected near the shore unless boats are feasible and permitted. If boats are used, the body of water should be cross sectioned, and samples should be collected at various depths across the body of water in accordance with the specified sampling plan. For this type of sampling, a weighted-bottle sampler is used to collect samples at a predetermined depth. The sampler consists of a glass bottle, a weighted sinker, a bottle stopper, and a line that is used to open the bottle and to lower and raise the sampler during sampling. The procedure for use is as follows:

- Assemble the weighted bottle sampler.
- Gently lower the sampler to the desired depth so as not to remove the stopper prematurely.
- Pull out the stopper with a sharp jerk of the sampler line.
- Allow the bottle to fill completely, as evidenced by the cessation of air bubbles.
- Raise the sampler and cap the bottle.
- Wipe the bottle clean. The sampling bottle can be also be used as the sample container for shipping.

Teflon bailers have also been used where feasible for collecting samples in deep bodies of water.

Another method of extending the reach of sampling efforts is the use of a small peristaltic pump. In this method the sample is drawn through heavy-wall Teflon tubing and pumped directly into the sample container. This system allows the operator to reach into the liquid body, sample from depth, or sweep the width of narrow streams.

The general sampling procedures are listed below:

1. Collect the sample using whichever technique, submerged bottle, bottle sampler with stopper, pump & tubing, or bailer.

2. The collected sample may be collected in the sample containers or may be transferred to the appropriate sample containers in order of the volatile organics first and inorganics last.

3. Label sample containers, place on ice in a cooler, remove, and decontaminate equipment as necessary.

REFERENCES

SOP 0110.01 Sample Nomenclature
SOP 1005.01 Field Duplicate Collection
SOP 1005.02 Rinse Blank Preparation
SOP 1005.03 Field Blank Preparation
SOP 1101.01 Sample Custody - Field
SOP 1102.01 Sample Shipping
SOP 1201.01 Sampling Equipment Decontamination
SOP 1501.01 Field Logbook

INTRODUCTION

The following Standard Operating Procedure (SOP) presents procedures for maintaining sample chain of custody (COC) during activities where samples are collected.

PROCEDURE

Sample custody is defined as being under a person's custody if any of the following conditions exist:

- it is in their possession,
- it is in their view, after being in their possession,
- it was in their possession and they locked it up, or
- it is in a designated secure area.

A designated field sampler will be personally responsible for the care and custody of collected samples until they are transferred to another person or properly dispatched to the laboratory. To the extent practicable, as few people as possible will handle the samples.

Sample tags or labels will be completed and applied to the container of each sample. When the tags or labels are being completed, waterproof ink will be used. If waterproof ink is not used, the tags or labels will be covered by transparent waterproof tape. Sample containers may also be placed in Ziploc-type storage bags to help keep them clean in the cooler. Information typically included on the sample tags or labels will include the following:

- Project Code
- Station Number and Location
- Sample Identification Number
- Date and Time of Sample Collection
- Type of Laboratory Analysis Required
- Preservation Required, if applicable
- Collector's Signature
- Priority (optional)
- Other Remarks

Additonal information may include:

- Anticipated Range of Results (Low, Medium, or High)
- Sample Analysis Priority

A COC form will be completed each time a sample or group of samples is prepared for transfer to the laboratory. The form will repeat the information on each of the sample labels and will serve as documentation of handling during shipment. The minimum information requirements of the COC form are listed in Table 1101.01-A. An example COC form is shown in Figure 1101.01-A. The completed COC must be reviewed by the Field Team Leader or Site Manager prior to sample shipment. The COC form will remain each sample shipping container at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples or in a project file.

TABLE 1101.01-A CHAIN OF CUSTODY FORM

INFORMATION	COMPLETED BY	DESCRIPTION
COC	Laboratory	enter a unique number for each chain of custody form
SHIP TO	Field Team	enter the laboratory name and address
CARRIER	Field Team	enter the name of the transporter (e.g., FedEx) or handcarried
AIRBILL	Field Team	enter the airbill number or transporter tracking number (if applicable)
PROJECT NAME	Field Team	enter the project name
SAMPLER NAME	Field Team	enter the name of the person collecting the samples
SAMPLER SIGNATURE	Field Team	signature of the person collecting the samples
SEND RESULTS TO	Field Team	enter the name and address of the prime contractor
FIELD SAMPLE ID	Field Team	enter the unique identifying number given to the field sample (includes MS, MSD, field duplicate and field blanks)
DATE	Field Team	enter the year and date the sample was collected in the format M/D (e.g., 6/3)
TIME	Field Team	enter the time the sample was collected in 24 hour format (e.g., 0900)
MATRIX	Field Team	enter the sample matrix (e.g., water, soil)
PRESERVATIVE	Field Team	enter the preservative used (e.g., HNO3) or “none”
FILTERED/ UNFILTERED	Field Team	enter “F” if the sample was filtered or “U” if the sample was not filtered
CONTAINERS	Field Team	enter the number of containers associated with the sample
MS/MSD	Field Team or Laboratory	enter “X” if the sample is designated for the MS/MSD
ANALYSES REQUESTED	Field Team	enter the method name of the analysis requested (e.g., SW6010A)
COMMENTS	Field Team	enter comments
SAMPLE CONDITION UPON RECEIPT AT LABORATORY	Laboratory	enter any problems with the condition of any sample(s)
COOLER TEMPERATURE	Laboratory	enter the internal temperature of the cooler, in degrees C, upon opening
SPECIAL INSTRUCTIONS/COMMENTS	Laboratory	enter any special instructions or comments
RELEASED BY (SIG)	Field Team and Laboratory	enter the signature of the person releasing custody of the samples
COMPANY NAME	Field Team and Laboratory	enter the company name employing the person releasing/receiving custody
RECEIVED BY (SIG)	Field Team and Laboratory	enter the signature of the person receiving custody of the samples
DATE	Field Team and Laboratory	enter the date in the format M/D/YY (e.g., 6/3/96) when the samples were released/received
TIME	Field Team and Laboratory	enter the date in 24 hour format (e.g., 0900) when the samples were released/received

FIGURE 1101.01-A CHAIN OF CUSTODY FORM

SOP	**1102.01**				
GROUP	Sample Handling				
SUB-GROUP	Sample Shipping				
TITLE	Sample Shipping				
DATE	11/19/2001	**FILE**	1102-01.DOC	**PAGE**	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the procedures for sample shipping that will be implemented during field work involving sampling activities.

TERMS

COC - Chain-of-Custody

PROCEDURE

Prior to shipping or transferring custody of samples, they will be packed according to D.O.T. requirements with sufficient ice to maintain an internal temperature of 4°C ± 2°C during transport to the laboratory. Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

1. Samples will be accompanied by a COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. If sent by common carrier, a bill of lading or airbill should be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer. This custody record documents transfer of sample custody from the sampler to another person or to the laboratory. The designated laboratory will accept custody in the field upon sample pick-up or at the laboratory if the samples are delivered via field personnel or a courier service.
2. Samples will be properly packed in approved shipping containers for laboratory pick-up by the appropriate laboratory for analysis, with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be padlocked or custody-sealed for transfer to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to itself so that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape. The seal will then be signed. The designated laboratory will accept custody of the samples upon receipt.
3. Whenever samples are split with state representatives or other parties, the COC record will be marked to indicate with whom the samples were split.
4. The field sampler will call the designated laboratory to inform them of sample shipment and verify sample receipt as necessary.

SOP	**1201.01**				
GROUP	Decontamination				
SUB-GROUP	Sampling Equipment Decontamination				
TITLE	Sampling Equipment Decontamination				
DATE	11/19/2001	**FILE**	1201-01.DOC	**PAGE**	1 of 3

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the methods used for minimizing the potential for cross-contamination, and provides general guidelines for sampling equipment decontamination procedures.

PROCEDURE

As part of the Health and Safety Plan (HASP), develop and set up a decontamination plan before any personnel or equipment enter the areas of potential exposure. The decontamination plan should include the following:

- The number, location, and layout of decontamination stations
- Which decontamination apparatus is needed
- The appropriate decontamination methods
- Methods for disposal of contaminated clothing, apparatus, and solutions

<u>Decontamination Methods</u>

Personnel, samples, and equipment leaving the contaminated area of a site will be decontaminated. Various decontamination methods will be used to either physically remove contaminants, inactivate contaminants by disinfection or sterilization, or both. The physical decontamination techniques appropriate for equipment decontamination can be grouped into two categories: abrasive methods and non-abrasive methods.

Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing/scrubbing the surface containing the contaminant. This method includes mechanical and wet blasting methods.

Mechanical cleaning methods use brushes of metal or nylon. The amount and type of contaminants removed will vary with the hardness of bristles, length of brushing time, and degree of brush contact.

Cleaning can also be accomplished by water blasting which is also referred to as steam cleaning and pressure washing. Pressure washing utilizes high-pressure that is sprayed from a nozzle onto sampling equipment to physically remove soil or (potentially) contaminated material. Steam cleaning is a modification of pressure washing where the water is heated to temperatures approaching 100°C to assist in removing organic constituents from equipment.

Disinfection/Rinse Methods

Disinfectants are a practical means of inactivating chemicals or contaminants of concern. Standard sterilization methods involve heating the equipment which is impractical for large equipment. Rinsing removes contaminants through dilution, physical attraction, and solubilization.

The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be target analyte free. Tap water may be used from any municipal water treatment system for mixing of decontamination solutions. An untreated potable water supply is not an acceptable substitute for tap water. Acids and solvents are occasionally utilized in decontamination of equipment to remove metals and organics, respectively, from sampling equipment. Other than ethanol, these are avoided when possible due to the safety, disposal, and transportation concerns associated with them.

Equipment or apparatuses that may be selected for use include the following:

- Personal protective clothing
- Non-phosphate detergent
- Selected solvents for removal of polar and nonpolar organics (ethanol, methanol, hexane)
- Acid washes for removal of metals (nitric acid)
- Long-handled brushes
- Drop cloths or plastic sheeting
- Paper towels
- Galvanized tubs or buckets
- Distilled, deionized, or tap water (as required by the project)
- Storage containers for spent wash solutions
- Sprayers (pressurized and non-pressurized)
- Trash bags
- Safety glasses or splash shield

Field Sampling Equipment Cleaning Procedures

The following procedures should be followed:

1. Where applicable, follow physical removal procedures previously described (pressure wash, scrub wash)
2. Wash equipment with a non-phosphate detergent solution
3. Rinse with tap water
4. Rinse with distilled or deionized water
5. Rinse with 10% nitric acid if the sample will be analyzed for metals/organics
6. Rinse with distilled or deionized water
7. Use a solvent rinse (pesticide grade) if the sample will be analyzed for organics
8. Air dry the equipment completely
9. Rinse again with distilled or deionized water

10. Place in clean bag or container for storage/transport to subsequent sampling locations.

Selection of the solvent for use in the decontamination process is based on the contaminants present at the site. Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if the analyses do not include inorganics. Use of a solvent is required when organic contamination is present on-site. Typical solvents used for removal of organic contaminants include acetone, ethanol, hexane, methanol, or water. An acid rinse step is required if metals are present on-site. If a particular contaminant fraction is not present at the site, the ten-step decontamination procedure listed above may be modified for site specificity.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing before commencement of sampling and between sampling locations. Plastic tubing should not be reused.

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the procedures for documenting activities observed or completed in the field in a field logbook. The documentation should represent all activities of WESTON personnel and entities under WESTON's supervision.

TERMS

FSP - Field Sampling Plan

SAP - Sampling and Analysis Plan

QAPP - Quality Assurance Project Plan

HASP - Health and Safety Plan

PROCEDURE

Field logbooks will be used and maintained during field activities to document pertinent information observed or completed by WESTON personnel or entities that WESTON is responsible for providing oversight. Field logbooks are legal documents that form the basis for later written reports and may serve as evidence in legal proceedings. The Site Manager or Field Team Leader will review field log entries daily and initial each page of entries. Field logbooks will be maintained by the Site Manager or Field Team Leader during field activities and transferred to the project files for a record of activities at the conclusion of the project. General logbook entry procedures are listed below.

- Logbooks must be permanently bound with all pages numbered to the end of the book. Entries should begin on page 1.
- Only use blue or black ink (waterproof) for logbook entries.
- Sign entries at the end of the day, or before someone else writes in the logbook.
- If a complete page is not used, draw a line diagonally across the blank portion of the page and initial and date the bottom line.
- If a line on the page is not completely filled, draw a horizontal line through the blank portion.
- Ensure that the logbook clearly shows the sequence of the day's events.
- Do not write in the margins or between written lines, and do not leave blank pages to fill in later.
- If an error is made, make corrections by drawing a single line through the error and initialing it.
- Maintain control of the logbook and keep in a secure location.

Field logbooks will contain, at a minimum, the following information, if applicable:

General Information

- Name, location of site, and work order number
- Name of the Site Manager or Field Team Leader
- Names and responsibilities of all field team members using the logbook (or involved with activities for which entries are being made)
- Weather conditions
- Field observations
- Names of any site visitors including entities that they represent

Sample Collection Activities

- Date(s) and times of the sample collection or event.
- Number and types of collected samples.
- Sample location with an emphasis on any changes to documentation in governing documents (i.e., SAP, FSP). This may include measurements from reference points or sketches of sample locations with respect to local features.
- Sample identification numbers, including any applicable cross-references to split samples or samples collected by another entity.
- A description of sampling methodology, or reference to any governing document (i.e., FSP, SAP, QAPP).
- Summary of equipment preparation and decontamination procedures.
- Sample description including depth, color, texture, moisture content, and evidence of waste material or staining.
- Air monitoring (field screening) results.
- Types of laboratory analyses requested.

Site Health and Safety Activities

- All safety, accident, and/or incident reports.

- Real-time personnel air monitoring results, if applicable, or if not documented in the HASP.
- Heat/cold stress monitoring data, if applicable.
- Reasons for upgrades or downgrades in personal protective equipment.
- Health and safety inspections, checklists (drilling safety guide), meetings/briefings.
- Calibration records for field instruments.

Oversight Activities

- Progress and activities performed by contractors including operating times.
- Deviations of contractor activities with respect to project governing documents (i.e., specifications).
- Contractor sampling results and disposition of contingent soil materials/stockpiles.
- Excavation specifications and locations of contractor confirmation samples.
- General site housekeeping and safety issues by site contractors.

SOP	**1502.01**				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Photograph Logs				
DATE	11/19/2001	**FILE**	1502-01.DOC	**PAGE**	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the requirements for collecting information related to photodocumentation of site activities.

PROCEDURE

- Uniquely number each roll of film obtained for use.
- Record the following information for each negative exposed:
    1. Date and Time
    2. Photographer Name
    3. Witness Name
    4. Orientation (Landscape, Portrait, or Panaoramic)
    5. Description (including activity being performed, specific equipment of interest, sample location(s), compass direction photographer is facing)
- Record "NA" for the negatives not used if the roll is not completely used prior to development.
- Record unique roll number on receipt when film is submitted for development.
- Verify descriptions on log with negative numbers when photographs are received from processing.

FORMS

Blank Photograph Logs can be printed from WESTON On-Line from the *Records Management Application*. Selecting the *Reports/Project Planning/Blank Photo Logs* menu option will generate a project specific log with 36 entries.

SOP	**1502.02**				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Photograph Management and Reporting				
DATE	11/30/2001	**FILE**	1502-02.DOC	**PAGE**	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the requirements for managing and reporting information related to photodocumentation of site activities.

PROCEDURE

Enter the Photograph Log information specified in SOP 1502.01 into WESTON On-Line *Records Management Application*. The data entry screen can be accessed by selecting the *Data/Photograph Log* menu option.

REPORTS

Complete Photograph Logs can be printed from WESTON On-Line from the *Records Management Application.* Selecting the *Reports/Summary Tables/Photographs/Logs* menu option will generate a specific log for a selected roll of film.

Photograph Templates can be printed from WESTON On-Line from the *Records Management Application.* Selecting the *Reports/Summary Tables/Photographs/Templates* menu option will generate templates for mounting the photographs for a selected roll of film.

APPENDIX Q

ANALYTICAL LABORATORY SUMMARY REPORTS

DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 073001028

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 073001028, El Paso County Metal Survey. Eighty-two soil samples were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

MES01-001-51-01	MES01-007-51-01	MES05-014-51-01	MES06-018-51-01	MES06-024-51-01	VIL04-004-51-01	VIL05-010-51-01
MES01-001-51-02	MES01-007-51-02	MES05-014-51-02	MES06-08-51-02	MES06-024-51-02	VIL04-004-51-02	VIL05-010-51-02
MES01-002-51-01	MES01-008-51-01	MES05-015-51-01	MES06-019-51-01	MES06-025-51-01	VIL05-006-51-01	VIL05-011-51-01
MES01-002-51-02	MES01-008-51-02	MES05-015-51-02	MES06-019-51-02	MES06-025-51-02	VIL05-006-51-02	VIL05-011-51-02
MES01-003-51-01	MES02-009-51-01	MES05-016-51-01	MES06-020-51-01	MES07-026-41-01	VIL05-006-51-01	MES04-013-51-01
MES01-003-51-02	MES02-009-51-02	MES05-016-51-02	MES06-020-51-02	MES07-026-51-02	VIL05-006-51-02	MES04-013-51-02
MES01-004-51-01	MES02-010-51-01	MES08-027-51-01	MES06-021-51-01	VIL01-001-51-01	VIL05-007-51-01	MES03-012-52-2
MES01-004-51-02	MES02-010-51-02	MES08-027-51-02	MES06-021-51-02	VIL01-001-51-02	VIL05-007-51-02	MES06-020-52-01
MES01-005-51-01	MES02-011-51-01	MES08-028-51-01	MES06-022-51-01	VIL02-002-51-01	VIL05-008-51-01	MES06-022-52-01
MES01-005-51-02	MES02-011-51-02	MES02-028-51-02	MES06-022-51-02	VIL02-002-51-02	VIL05-008-51-02	VIL03-003-52-01
MES01-006-51-01	MES03-012-51-01	MES06-017-51-01	MES06-023-51-01	VIL03-003-51-01	VIL05-009-51-01	
MES01-006-5-02	MES03-012-51-02	MES006-017-51-02	MES06-023-51-02	VIL03-003-51-02	VIL05-009-51-02	

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-09-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

Roy F. Weston, Inc.
El Paso County Metal Survey

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration blanks associated with this case.

AND

Target analytes were detected in the following preparation blanks. Sample concentrations less than five times the highest analyte concentration reported in associated blanks are flagged UB (not detected, detection limit raised due to possible blank contamination).

PREPARATION BLANK/MATRIX	ANALYTE	CONC. ppm	QUALIFIED SAMPLES
RB2 7/30 / soil	Pb	1.33	None

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCS were within the established control limits.

METALS DATA EVALUATION (continued)

8. Duplicate Sample Analysis:

Samples MES01-001-51-01, MES02-11-51-01, MES06-020-51-01, VIL04-004-51-01, MES06-022-52-01 and five laboratory control samples underwent duplicate analysis for the soil matrix. QC criteria are that the Relative Percent Difference (RPD) values for the duplicate sample analysis be less than 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± two times the CRDL for the soil matrix. QC criteria were not met for the following analytes:

ANALYTE	MATRIX	RPD or CONC	ASSOCIATED SAMPLES	QUALIFIER FLAG
Arsenic	soil	110.	MES06-022-52-01, VIL03-003-52-01	JK or UJK

Samples MES02-11-51-01 and VIL04-004-51-01 had lead results that exceeded the spike concentration by a factor of four or more, so recovery limits for these samples do not apply.

9. Spiked Sample Analysis:

Sample MES01-001-51-01, MES02-11-51-01, MES06-020-51-01, VIL04-004-51-01, and MES06-022-52-01 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

ANALYTE	MATRIX	RECOVERY %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Arsenic (MS)	soi	6.72	MES06-022-52-01, VIL03-003-52-01	JL or UJL
Arsenic (MSD)	soil	1.95	MES06-022-52-01, VIL03-003-52-01	JL or UJL
Lead (MS)	soil	18.3	MES06-022-52-01, VIL03-003-52-01	JL or UJL

10. ICP Serial Dilution:

No serial dilutions were performed with this group of samples.

METALS DATA EVALUATION (continued)

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
MES01-007-51-2	Lead	4				4
MES02-010-5-101	Lead	2				2
MES02-011-51-01	Lead	4				4
MES05-014-51-1	Lead	2				2
MES05-015-51-01	Lead	4				4
MES05-016-51-01	Lead	2				2
MES08-028-51-01	Lead	4				4
MES06-017-51-02	Lead	4				4
VIL01-001-51-01	Lead	2				2
VIL01-001-51-02	Lead	4				4
VIL04-004-51-01	Lead	4				4
MES04-013-51-1	Lead	4				4

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

The duplicate analysis of one of the matrix spikes had arsenic recover out of relative percent difference criteria. This analyte was qualified as estimated, unknown bias in the affected samples.

METALS DATA EVALUATION (continued)

One of the matrix spikes contained arsenic and lead that recovered below required control limits. These analytes were qualified as estimated, biased low in the affected samples.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.

The analytical data is acceptable for use with the qualifications listed above.

Sampling Date - July 30, 2001

Sampling Date - 07-30-01
Method of Analysis - 6010B

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
MES01-001-51-01	073001028-1	16		3.0	<3.0	U	3.0
MES01-001-51-02	073001028-2	41		3.0	<3.0	U	3.0
MES01-002-51-01	073001028-3	26		3.0	<3.0	U	3.0
MES01-002-51-02	073001028-4	31		3.0	<3.0	U	3.0
MES01-003-51-01	073001028-5	37		3.0	<3.0	U	3.0
MES01-003-51-02	073001028-6	<3.0		3.0	<3.0	U	3.0
MES01-004-51-01	073001028-7	43		3.0	3		3.0
MES01-004-51-02	073001028-8	28		3.0	<3.0	U	3.0
MES01-005-51-01	073001028-9	55		3.0	<3.0	U	3.0
MES01-005-51-02	073001028-10	16		3.0	<3.0	U	3.0
MES01-006-51-01	073001028-11	67		3.0	5.1		3.0
MES01-006-51-02	073001028-12	18		3.0	7.1		3.0
MES01-007-51-01	073001028-13	51		3.0	<3.0	U	3.0
MES01-007-51-02	073001028-14	370	D	12.	10		3.0
MES01-008-51-01	073001028-15	34		3.0	<3.0	U	3.0
MES01-008-51-02	073001028-16	58		3.0	9.2		3.0
MES02-009-51-01	073001028-17	94		3.0	<3.0	U	3.0
MES02-009-51-02	073001028-18	11		3.0	<3.0	U	3.0
MES02-010-51-01	073001028-19	200	D	6.0	10		3.0
MES02-010-51-02	073001028-20	21		3.0	12		3.0
MES02-011-51-01	073001028-21	480	D	12.	14		3.0
MES02-011-51-02	073001028-22	23		3.0	<3.0	U	3.0
MES03-012-51-01	073001028-23	63		3.0	4.8		3.0
MES03-012-51-02	073001028-24	36		3.0	4.6		3.0
MES05-014-51-01	073001028-25	200	D	6.0	<3.0	U	3.0
MES05-014-51-02	073001028-26	83		3.0	<3.0	U	3.0
MES05-015-51-01	073001028-27	330	D	12.	11		3.0
MES05-015-51-02	073001028-28	41		3.0	<3.0	U	3.0
MES05-016-51-01	073001028-29	210	D	6.0	5.2		3.0
MES05-016-51-02	073001028-30	80		3.0	<3.0	U	3.0
MES08-027-51-01	073001028-31	62		3.0	<3.0	U	3.0
MES08-027-51-02	073001028-32	110		3.0	10		3.0

MES08-028-51-01	073001028-33	320	D	12.	8.2		3.0
MES08-028-51-02	073001028-34	18		3.0	<3.0	U	3.0
MES06-017-51-01	073001028-35	27		3.0	<3.0	U	3.0
MES06-017-51-02	073001028-36	270	D	12.	7.1		3.0
MES06-018-51-01	073001028-37	36		3.0	<3.0	U	3.0
MES06-018-51-02	073001028-38	13		3.0	<3.0	U	3.0
MES06-019-51-01	073001028-39	17		3.0	<3.0	U	3.0
MES06-019-51-02	073001028-40	15		3.0	<3.0	U	3.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
MES06-020-51-01	073001028-41	18		3.0	<3.0	U	3.0
MES06-020-51-02	073001028-42	14		3.0	<3.0	U	3.0
MES06-021-51-01	073001028-43	11		3.0	<3.0	U	3.0
MES06-021-51-02	073001028-44	37		3.0	<3.0	U	3.0
MES06-022-51-01	073001028-45	60		3.0	<3.0	U	3.0
MES06-022-51-02	073001028-46	<3.0		3.0	<3.0	U	3.0
MES06-023-51-01	073001028-47	11		3.0	<3.0	U	3.0
MES06-023-51-02	073001028-48	16		3.0	<3.0	U	3.0
MES06-024-51-01	073001028-49	9.4		3.0	<3.0	U	3.0
MES06-024-51-02	073001028-50	<3.0		3.0	<3.0	U	3.0
MES06-025-51-01	073001028-51	13		3.0	<3.0	U	3.0
MES06-025-51-02	073001028-52	<3.0		3.0	<3.0	U	3.0
MES07-026-51-01	073001028-53	110		3.0	<3.0	U	3.0
MES07-026-51-02	073001028-54	21		3.0	<3.0	U	3.0
VIL01-001-51-01	073001028-55	290	D	6.0	<3.0	U	3.0
VIL01-001-51-02	073001028-56	320	D	12.	<3.0	U	3.0
VIL02-002-51-01	073001028-57	110		3.0	<3.0	U	3.0
VIL02-002-51-02	073001028-58	82		3.0	<3.0	U	3.0
VIL03-003-51-01	073001028-59	110		3.0	<3.0	U	3.0
VIL03-003-51-02	073001028-60	68		3.0	<3.0	U	3.0
VIL04-004-51-01	073001028-61	320	D	12.	5.1		3.0
VIL04-004-51-02	073001028-62	14		3.0	<3.0	U	3.0
VIL05-006-51-01	073001028-63	<3.0		3.0	<3.0	U	3.0
VIL05-006-51-02	073001028-64	<3.0		3.0	<3.0	U	3.0
VIL05-006-51-01	073001028-65	<3.0		3.0	<3.0	U	3.0
VIL05-006-51-02	073001028-66	<3.0		3.0	<3.0	U	3.0
VIL05-007-51-01	073001028-67	<3.0		3.0	<3.0	U	3.0
VIL05-007-51-02	073001028-68	11		3.0	<3.0	U	3.0
VIL05-008-51-01	073001028-69	10		3.0	<3.0	U	3.0
VIL05-008-51-02	073001028-70	5.6		3.0	<3.0	U	3.0
VIL05-009-51-01	073001028-71	4.9		3.0	<3.0	U	3.0

mb

VIL05-009-51-02	073001028-72	7.6		3.0	<3.0	U	3.0
VIL05-010-51-01	073001028-73	9.7		3.0	<3.0	U	3.0
VIL05-010-51-02	073001028-74	32		3.0	<3.0	U	3.0
VIL05-011-51-01	073001028-75	8.9		3.0	<3.0	U	3.0
VIL05-011-51-02	073001028-76	53		3.0	<3.0	U	3.0
MES04-013-51-01	073001028-77	330	D	12.	5.2		3.0
MES04-013-51-02	073001028-78	24		3.0	<3.0	U	3.0
MES03-012-52-02	073001028-79	39		3.0	<3.0	U	3.0
MES06-020-52-01	073001028-80	27		3.0	<3.0	U	3.0

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
MES06-022-52-01	073001028-81	<3.0	UJL	3.0	<3.0	UJK	3.0
VIL03-003-52-01	073001028-82	110	JL	3.0	<3.0	UJK	3.0

ANALYTICAL RESULTS
07/30/01

Sampling Date..........: 07-30-01
Matrix....................: Soil
Date Analyzed..........: 7/30/01-7/31/01

Submittal Date.........: 07-30-01
Method..................: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
MES01-001-51-01	073001028-1	16	3.0	<3.0	3.0	JM
MES01-001-51-02	073001028-2	41	3.0	<3.0	3.0	JM
MES01-002-51-01	073001028-3	26	3.0	<3.0	3.0	JM
MES01-002-51-02	073001028-4	31	3.0	<3.0	3.0	JM
MES01-003-51-01	073001028-5	37	3.0	<3.0	3.0	JM
MES01-003-51-02	073001028-6	<3.0	3.0	<3.0	3.0	JM/NM
MES01-004-51-01	073001028-7	43	3.0	3	3.0	JM/NM
MES01-004-51-02	073001028-8	28	3.0	<3.0	3.0	JM/NM
MES01-005-51-01	073001028-9	55	3.0	<3.0	3.0	JM/NM
MES01-005-51-02	073001028-10	16	3.0	<3.0	3.0	JM/NM
MES01-006-51-01	073001028-11	67	3.0	5.1	3.0	JM/NM
MES01-006-51-02	073001028-12	18	3.0	7.1	3.0	JM/NM
MES01-007-51-01	073001028-13	51	3.0	<3.0	3.0	JM/NM
MES01-007-51-02	073001028-14	370	12.	10	3.0	NM
MES01-008-51-01	073001028-15	34	3.0	<3.0	3.0	JM/NM
MES01-008-51-02	073001028-16	58	3.0	9.2	3.0	JM/NM
MES02-009-51-01	073001028-17	94	3.0	<3.0	3.0	JM/NM
MES02-009-51-02	073001028-18	11	3.0	<3.0	3.0	JM/NM
MES02-010-51-01	073001028-19	200	6.0	10	3.0	NM
MES02-010-51-02	073001028-20	21	3.0	12	3.0	JM/NM
MES02-011-51-01	073001028-21	480	12.	14	3.0	NM
MES02-011-51-02	073001028-22	23	3.0	<3.0	3.0	JM/NM
MES03-012-51-01	073001028-23	63	3.0	4.8	3.0	JM/NM
MES03-012-51-02	073001028-24	36	3.0	4.6	3.0	JM/NM
MES05-014-51-01	073001028-25	200	6.0	<3.0	3.0	NM
MES05-014-51-02	073001028-26	83	3.0	<3.0	3.0	JM/NM
MES05-015-51-01	073001028-27	330	12.	11	3.0	NM
MES05-015-51-02	073001028-28	41	3.0	<3.0	3.0	JM/NM
MES05-016-51-01	073001028-29	210	6.0	5.2	3.0	NM
MES05-016-51-02	073001028-30	80	3.0	<3.0	3.0	JM/NM
MES08-027-51-01	073001028-31	62	3.0	<3.0	3.0	JM/NM

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ANALYTICAL RESULTS
07/30/01

Sampling Date..........: 07-30-01
Matrix..................: Soil
Date Analyzed.........: 7/30/01-7/31/01

Submittal Date.........: 07-30-01
Method..................: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
MES08-027-51-02	073001028-32	110	3.0	10	3.0	JM/NM
MES08-028-51-01	073001028-33	320	12.	8.2	3.0	NM
MES08-028-51-02	073001028-34	18	3.0	<3.0	3.0	JM/NM
MES06-017-51-01	073001028-35	27	3.0	<3.0	3.0	JM/NM
MES06-017-51-02	073001028-36	270	12.	7.1	3.0	NM
MES06-018-51-01	073001028-37	36	3.0	<3.0	3.0	JM/NM
MES06-018-51-02	073001028-38	13	3.0	<3.0	3.0	JM/NM
MES06-019-51-01	073001028-39	17	3.0	<3.0	3.0	JM/NM
MES06-019-51-02	073001028-40	15	3.0	<3.0	3.0	JM/NM
MES06-020-51-01	073001028-41	18	3.0	<3.0	3.0	NM
MES06-020-51-02	073001028-42	14	3.0	<3.0	3.0	NM
MES06-021-51-01	073001028-43	11	3.0	<3.0	3.0	NM
MES06-021-51-02	073001028-44	37	3.0	<3.0	3.0	NM
MES06-022-51-01	073001028-45	60	3.0	<3.0	3.0	NM
MES06-022-51-02	073001028-46	<3.0	3.0	<3.0	3.0	NM
MES06-023-51-01	073001028-47	11	3.0	<3.0	3.0	NM
MES06-023-51-02	073001028-48	16	3.0	<3.0	3.0	NM
MES06-024-51-01	073001028-49	9.4	3.0	<3.0	3.0	NM
MES06-024-51-02	073001028-50	<3.0	3.0	<3.0	3.0	NM
MES06-025-51-01	073001028-51	13	3.0	<3.0	3.0	NM
MES06-025-51-02	073001028-52	<3.0	3.0	<3.0	3.0	NM
MES07-026-51-01	073001028-53	110	3.0	<3.0	3.0	NM
MES07-026-51-02	073001028-54	21	3.0	<3.0	3.0	NM
VIL01-001-51-01	073001028-55	290	6.0	<3.0	3.0	NM
VIL01-001-51-02	073001028-56	320	12.	<3.0	3.0	NM
VIL02-002-51-01	073001028-57	110	3.0	<3.0	3.0	NM
VIL02-002-51-02	073001028-58	82	3.0	<3.0	3.0	NM
VIL03-003-51-01	073001028-59	110	3.0	<3.0	3.0	NM
VIL03-003-51-02	073001028-60	68	3.0	<3.0	3.0	NM
VIL04-004-51-01	073001028-61	320	12.	5.1	3.0	NM
VIL04-004-51-02	073001028-62	14	3.0	<3.0	3.0	NM
VIL05-006-51-01	073001028-63	<3.0	3.0	<3.0	3.0	NM
VIL05-006-51-02	073001028-64	<3.0	3.0	<3.0	3.0	NM
VIL05-006-51-01	073001028-65	<3.0	3.0	<3.0	3.0	NM
VIL05-006-51-02	073001028-66	<3.0	3.0	<3.0	3.0	NM

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ANALYTICAL RESULTS
07/30/01

Sampling Date……….: 07-30-01 Submittal Date………: 07-30-01
Matrix………………..: Soil Method……………….: 6010B
Date Analyzed……….: 7/30/01-7/31/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
VIL05-007-51-01	073001028-67	<3.0	3.0	<3.0	3.0	NM
VIL05-007-51-02	073001028-68	11	3.0	<3.0	3.0	NM
VIL05-008-51-01	073001028-69	10	3.0	<3.0	3.0	NM
VIL05-008-51-02	073001028-70	5.6	3.0	<3.0	3.0	NM
VIL05-009-51-01	073001028-71	4.9	3.0	<3.0	3.0	NM
VIL05-009-51-02	073001028-72	7.6	3.0	<3.0	3.0	NM
VIL05-010-51-01	073001028-73	9.7	3.0	<3.0	3.0	NM
VIL05-010-51-02	073001028-74	32	3.0	<3.0	3.0	NM
VIL05-011-51-01	073001028-75	8.9	3.0	<3.0	3.0	NM
VIL05-011-51-02	073001028-76	53	3.0	<3.0	3.0	NM
MES04-013-51-01	073001028-77	330	12.	5.2	3.0	NM
MES04-013-51-02	073001028-78	24	3.0	<3.0	3.0	NM
MES03-012-52-02	073001028-79	39	3.0	<3.0	3.0	NM
MES06-020-52-01	073001028-80	27	3.0	<3.0	3.0	NM
MES06-022-52-01	073001028-81	<3.0	3.0	<3.0	3.0	NM
VIL03-003-52-01	073001028-82	110	3.0	<3.0	3.0	NM

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QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	21.0	19.2	84.0 76.8	23.1	22.2	92.4 88.8	2.38	2.33	2.50
Lead	<3.00	22.7	25.8	90.8 103	23.5	21.6	94.0 86.4	2.42	2.54	2.50
Arsenic	<3.00	21.0 19.	19.2 26.4	~~84.0~~ 76 76.8 106.	23.1	22.2	92.4 88.8	2.49	2.65	2.50
Lead	<3.00	90.0	164	NP NP	23.0	23.9	92.0 95.6	2.59	2.50	2.50
Arsenic	<3.00	22.1	22.2	88.4 88.8	24.8	25.6	99.2 102	2.55	2.54	2.50
Lead	<3.00	21.8	19.6	87.2 78.4	21.6	21.9	86.4 87.6	2.44	2.54	2.50
Arsenic	<3.00	29.2	25.8	117 103	20.0	19.6	80.0 78.4	2.54	2.37	2.50
Lead	<3.00	26.0	8.0	NP NP	22.9	~~85.2~~ 21.3	91.6 85.2	2.68	2.59	2.50
Arsenic	<3.00	6.72*	1.95*	26.8 7.80	19.2	19.4	76.8 77.6	2.26	2.37	2.50
Lead	<3.00	18.3*	21.1	73.2 84.4	21.7	21.0	86.8 84.0	2.59	2.74	2.50

NP – Not practical because sample result is more than 5 times greater than the spike level.
*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm.

Ruben Parra
Technical Director

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DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 073101029

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 073101029, El Paso County Metal Survey. One hundred thirty-seven soil samples were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

ELH10-054-51-01	ELH01-014-51-01	ELH09-043-51-01	ELH17-071-51-01	ELH07-037-51-01	ELH07-031-5-02	ELH10-047-51-02	ELH10-045-51-02
ELH10-54-51-02	ELH01-014-51-01	ELH09-043-51-02	ELH17-071-51-02	ELH07-037-51-02	ELJ07-030-51-01	ELH07-038-51-01	ELH01-002-51-01
ELH01-001-51-01	ELH01-006-51-01	ELH15-067-51-01	ELH10-053-51-01	ELH01-010-51-02	ELH07-030-51-02	ELH07-038-51-02	ELH01-002-51-02
ELH01-001-51-02	ELH01-006-51-02	ELH15-067-51-02	ELH10-053-51-02	ELH07-036-51-01	ELH06-027-51-01	ELH02-017-51-01	ELH10-044-51-01
ELH01-015-51-01	ELH10-052-51-01	ELH16-068-51-01	ELH11-060-51-01	ELH07-036-51-02	ELH06-027-51-02	ELH02-017-51-02	ELH10-044-51-02
ELH01-015-51-02	ELH10-052-51-02	ELH16-068-51-02	ELH11-060-51-02	ELH10-051-51-01	ELH10-046-51-01	ELH10-058-51-01	ELH01-039-51-01
ELH01-005-51-01	ELH08-041-51-01	ELH04-024-51-01	ELH10-056-51-01	ELH10-051-51-02	ELH10-046-51-02	ELH10-058-51-02	ELH08-039-51-02
ELH01-100-51-01	ELH08-041-51-02	ELH04-024-51-02	ELH10-056-51-02	ELH10-050-51-01	ELH04-022-51-01	ELH07-033-51-01	ELH01-003-51-01
ELH01-01-51-02	ELH04-023-51-01	ELH10-059-51-01	ELH10-055-51-01	ELH10-050-51-02	ELH04-022-51-02	ELH07-033-51-02	ELH01-003-51-02
ELH01-007-51-01	ELH04-023-51-02	ELH10-059-51-02	ELH10-055-51-02	ELH10-048-51-01	ELH07-034-51-01	ELH02-019-51-01	ELH01-012-51-01
ELH01-007-51-02	ELH09-042-51-01	ELH16-069-51-01	ELH16-070-51-01	ELH10-048-51-02	ELH07-034-51-02	ELH02-019-51-02	ELH01-012-51-02
ELH01008-51-01	ELH09-042-51-02	ELH16-069-51-02	ELH16-070-51-02	ELH-049-51-01	ELH10-057-51-01	ELH01-016-51-01	ELH01-035-51-01
ELH01-008-51-02	ELH05-026-51-01	ELH07-028-51-01	ELH08-040-51-01	ELH10-049-51-02	ELH10-057-51-02	ELH01-016-51-02	ELH07-035-51-02
ELH01-009-51-01	ELH05-026-51-02	ELH07-028-51-02	ELH08-040-5-02	ELH07-032-51-01	ELH02-020-51-01	ELH01-004-51-01	ELH02-018-51-01
ELH01-009-51-02	ELH07-02-51-01	ELH03-021-51-01	ELH05-025-51-01	ELH07-032-51-02	ELH02-020-51-02	RLH0-004-51-02	ELH02-018-51-02
ELH01-010-51-01	ELH07-029-51-02	ELH03-021-51-01	ELH05-025-51-02	ELH07-03-51-01	ELH10-047-51-01	ELH10-045-51-01	ELH01-013-51-01
ELH01-013-51-02	ELH01-003-52-01	ELH01-001-52-01	ELH01-006-52-01	ELH01-003-52-02	ELH01-004-052-02	ELH01-001-052-02	ELH01-002-052-01

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-10-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration and preparation blanks associated with this case.

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCS were within the established control limits.

8. Duplicate Sample Analysis:

Samples ELH10-054-4101, ELH01-006-51-01, ELH04-024-51-01, ELH16-070-51-01, ELH07-031-51-01, ELH02-017-51-01, ELH01-003-51-01 and seven laboratory control samples underwent duplicate analysis for the soil matrix. QC criteria are that the Relative Percent Difference (RPD) values for the duplicate sample analysis be less than 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± two times the CRDL for the soil matrix. QC criteria were not met for the following analytes:

METALS DATA EVALUATION (continued)

ANALYTE	MATRIX	RPD or CONC	ASSOCIATED SAMPLES	QUALIFIER FLAG
Lead	soil	55.5	ELH04-024-51-01, ELH04-024-51-02, ELH10-059-51-01, ELH10-059-51-02, ELH16-069-51-01, ELH16-069-51-02, ELH07-028-51-01, ELH07-028-51-02, ELH03-021-51-01, ELH03-021-51-02, ELH17-071-51-01, ELH17-071-51-02, ELH10-053-51-01, ELH10-053-51-02, ELH11-060-51-01, ELH11-060-51-02, ELH10-056-51-01, ELH10-056-5-02, ELH10-055-51-01, ELH10-055-51-02	JK or UJK
Lead	soil	51.1	ELH07-031-51-01, ELH07-031-51-02, ELH07-030-51-01, ELH07-030-51-02, ELH06-027-51-01, ELH06-027-51-02, ELH10-046-51-01, ELH10-046-51-02, ELH04-022-51-0, ELH04-022-51-02, ELH07-034-51-01, ELH07-034-51-02, ELH10-057-51-01, ELH10-057-51-02, ELH02-020-51-01, ELH02-020-51-02, ELH10-047-51-01, ELH10-047-51-02, ELH07-038-51-01, ELH07-038-51-02	JK or UJK
Arsenic	soil	57.3	Same As Above	JK or UJK

Sample ELH16-070-51-01 had lead results that exceeded the spike concentration by a factor of four or more, so recovery limits for this sample do not apply.

9. Spiked Sample Analysis:

Samples ELH10-054-4101, ELH01-006-51-01, ELH04-024-51-01, ELH16-070-51-01, ELH07-031-51-01, ELH02-017-51-01, and ELH01-003-51-01 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

METALS DATA EVALUATION (continued)

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Arsenic (MS)	soil	51.2	ELH10-054-51-01, ELH10-054-51-02, ELH01-001-51-01, ELH01-001-51-02, ELH01-015-51-01, ELH01-015-51-02, ELH01-005-51-01, ELH01-005-51-02, ELH01-011-51-01, ELH01-011-51-02, ELH01-007-51-01, ELH01-007-51-02, ELH01-008-51-02, ELH01-008-51-02, ELH01-009-51-01, ELH01-009-51-02, ELH01-010-51-01, ELH01-010-51-02 ELH01-014-51-01, ELH01-014-51-02	JL or UJL
Arsenic (MSD)	soil	48.4	Same as Above	JL or UJL
Arsenic (MS)	soil	62.8	ELH01-006-51-01, ELH01-006-51-02, ELH01-052-51-01, ELH01-052-51-02, ELH08-041-51-01, ELH08-041-51-02, ELH04-023-51-01, ELH04-023-51-02, ELH09-042-51-01, ELH09-042-51-02, ELH05-026-51-01, ELH05-046-51-02, ELH07-029-51-01, ELH07-029-51-02, ELH09-043-51-01, ELH09-043-51-02, ELH15-067-51-01, ELH15-067-51-02, ELH16-068-51-01, ELH16-068-51-02	JL or UJL
Arsenic (MSD)	soil	70..0	Same As Above	JL or UJL
Arsenic (MS)	soil	56.4	ELH04-024-51-01, ELH04-024-51-02, ELH10-059-51-01, ELH10-059-51-02, ELH16-069-51-01, ELH16-069-51-02, ELH07-028-51-01, ELH07-028-51-02, ELH03-021-51-01, ELH03-021-51-02, ELH17-071-51-01, ELH17-071-51-02, ELH10-053-51-01, ELH10-053-51-02, ELH11-060-51-01, ELH11-060-51-02, ELH10-056-51-01, ELH10-056-5-02, ELH10-055-51-01, ELH10-055-51-02	JL or UJL
Arsenic (MSD)	soil	65.2	Same As Above	JL or UJL

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Lead (MS)	soil	32.8	Same As Above	JL or UJL
Lead (MSD)	soil	58.0	ELH04-024-51-01, ELH04-024-51-02, ELH10-059-51-01, ELH10-059-51-02, ELH16-069-51-01, ELH16-069-51-02, ELH07-028-51-01, ELH07-028-51-02, ELH03-021-51-01, ELH03-021-51-02, ELH17-071-51-01, ELH17-071-51-02, ELH10-053-51-01, ELH10-053-51-02, ELH11-060-51-01, ELH11-060-51-02, ELH10-056-51-01, ELH10-056-5-02, ELH10-055-51-01, ELH10-055-51-02	JL or UJL
Arssenic (MS)	soil	58.0	ELH16-070-51-01, ELH16-070-51-02, ELH08-040-51-01, ELH08-040-51-02, ELH05-025-51-01, ELH05-025-51-02, ELH07-037-51-01, ELH07-037-51-02, ELH07-036-51-01, ELH07-036-51-02, ELH10-051-51-02, ELH10-051-51-02, ELH10-050-51-01, ELH10-050-51-02, ELH10-048-51-01, ELH10-048-51-02, ELH10-049-51-01, ELH10-048-51-02, ELH07-032-51-01, ELH07-032-51-02	
Arsenic (MSD)	soil	64.8	Same As Above	
Arsenic (MS)	soil	29.7	ELH07-031-51-01, ELH07-031-51-02, ELH07-030-51-01, ELH07-030-51-02, ELH06-027-51-01, ELH06-027-51-02, ELH10-046-51-01, ELH10-046-51-02, ELH04-022-51-0, ELH04-022-51-02, ELH07-034-51-01, ELH07-034-51-02, ELH10-057-51-01, ELH10-057-51-02, ELH02-020-51-01, ELH02-020-51-02, ELH10-047-51-01, ELH10-047-51-02, ELH07-038-51-01, ELH07-038-51-02	
Aresenic (MSD)	soil	53.6	Same As Above	
Lead (MS)	soil	40.8	Same As Above	
Lead (MSD)	soil	68.8	Same As Above	

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Arsenic (MSD)	soil	72.0	ELH02-017-51-01, ELH02-017-51-02, ELH10-058-51-01, ELH10-058-51-02, ELH07-033-51-01, ELH07-033-51-02, ELH02-019-51-01, ELH02-017-51-02, ELH01-016-51-01, ELH01-016-51-02, ELH01-004-51-01, ELH01-004-51-02, ELH10-045-51-01, ELH10-045-51-02, ELH01-002-51-01, ELH01-002-51-02, ELH10-044-51-01, ELH10-044-51-02, ELH08-039-51-01, ELH08-039-51-02	
Lead (MS)	soil	68.8	Same As Above	JL or UJL
Lead (MSD)	soil	70.4	Same As Above	JL or UJL

10. ICP Serial Dilution:

No serial dilutions were performed with this group of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
ELH15-068-51-02	Lead	2				2
ELH16-068-51-01	Lead	20				20
ELH16-069-51-02	Lead	5				5
ELH17-071-51-01	Lead	5				5
ELH11-060-51-01	Lead	2				2
ELH16-070-51-02	Lead	2				2
ELH10-048-51-02	Lead	2				2
ELH10-058-51-02	Lead	2				2

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

The duplicate analysis of two of the matrix spikes had analytes recover out of relative percent difference criteria. These analytse were qualified as estimated, unknown bias in the affected samples.
Several of the matrix spikes contained arsenic and lead that recovered below required control limits. These analytes were qualified as estimated, biased low in the affected samples.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.

The analytical data is acceptable for use with the qualifications listed above.

Sampling Date - July 31, 2001
Method of Analysis - 6010B

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
ELH10-054-51-01	073101029-1	<3.0	U	3.0	<3.0	UJL	3.0
ELH10-054-51-02	073101029-2	23		3.0	<3.0	UJL	3.0
ELH01-001-51-01	073101029-3	40		3.0	<3.0	UJL	3.0
ELH01-001-51-02	073101029-4	56		3.0	<3.0	UJL	3.0
ELH01-015-51-01	073101029-5	71		3.0	<3.0	UJL	3.0
ELH01-015-51-02	073101029-6	<3.0	U	3.0	<3.0	UJL	3.0
ELH01-005-51-01	073101029-7	37		3.0	<3.0	UJL	3.0
ELH01-005-51-02	073101029-8	11		3.0	<3.0	UJL	3.0
ELH01-011-51-01	073101029-9	14		3.0	<3.0	UJL	3.0
ELH01-011-51-02	073101029-10	124		3.0	<3.0	UJL	3.0
ELH01-007-51-01	073101029-11	16		3.0	<3.0	UJL	3.0
ELH01-007-51-02	073101029-12	68		3.0	<3.0	UJL	3.0
ELH01-008-51-01	073101029-13	41		3.0	<3.0	UJL	3.0
ELH01-008-51-02	073101029-14	37		3.0	<3.0	UJL	3.0
ELH01-009-51-01	073101029-15	93		3.0	<3.0	UJL	3.0
ELH01-009-51-02	073101029-16	<3.0	U	3.0	<3.0	UJL	3.0
ELH01-010-51-01	073101029-17	6.5		3.0	<3.0	UJL	3.0
ELH01-010-51-02	073101029-18	<3.0	U	3.0	<3.0	UJL	3.0
ELH01-014-51-01	073101029-19	67		3.0	<3.0	UJL	3.0
ELH01-014-51-02	073101029-20	7.2		3.0	<3.0	UJL	3.0
ELH01-006-51-01	073101029-21	45		3.0	<3.0	UJL	3.0
ELH01-006-51-02	073101029-22	<3.0	U	3.0	<3.0	UJL	3.0
ELH10-052-51-01	073101029-23	24		3.0	<3.0	UJL	3.0
ELH10-052-51-02	073101029-24	16		3.0	<3.0	UJL	3.0
ELH08-041-51-01	073101029-25	18		3.0	<3.0	UJL	3.0
ELH08-041-51-02	073101029-26	<3.0	U	3.0	<3.0	UJL	3.0
ELH04-023-51-01	073101029-27	29		3.0	<3.0	UJL	3.0
ELH04-023-51-02	073101029-28	21		3.0	<3.0	UJL	3.0
ELH09-042-51-01	073101029-29	31		3.0	<3.0	UJL	3.0
ELH09-042-51-02	073101029-30	<3.0	U	3.0	<3.0	UJL	3.0
ELH05-026-51-01	073101029-31	67		3.0	<3.0	UJL	3.0

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ELH05-026-51-02	073101029-32	<3.0	U	3.0	<3.0	UJL	3.0
ELH07-029-51-01	073101029-33	92		3.0	<3.0	UJL	3.0
ELH07-029-51-02	073101029-34	<3.0	U	3.0	<3.0	UJL	3.0
ELH09-043-51-01	073101029-35	14		3.0	<3.0	UJL	3.0
ELH09-043-51-02	073101029-36	83		3.0	<3.0	UJL	3.0
ELH15-067-51-01	073101029-37	76		3.0	<3.0	UJL	3.0
ELH15-067-51-02	073101029-38	14		3.0	<3.0	UJL	3.0
ELH16-068-51-01	073101029-39	1500		60	<3.0	UJL	3.0
ELH15-068-51-02	073101029-40	200		6.0	<3.0	UJL	3.0

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
ELH04-024-51-01	073101029-41	64	JK	3.0	<3.0	UJL	3.0
ELH04-024-51-02	073101029-42	51	JK	3.0	<3.0	UJL	3.0
ELH10-059-51-01	073101029-43	3.6	JK	3.0	<3.0	UJL	3.0
ELH10-059-51-02	073101029-44	108	JK	3.0	<3.0	UJL	3.0
ELH16-069-51-01	073101029-45	122	JK	3.0	<3.0	UJL	3.0
ELH16-069-51-02	073101029-46	227	JK	15	<3.0	UJL	3.0
ELH07-028-51-01	073101029-47	61	JK	3.0	<3.0	UJL	3.0
ELH07-028-51-02	073101029-48	<3.0	UJK	3.0	<3.0	UJL	3.0
ELH03-021-51-01	073101029-49	67	JK	3.0	<3.0	UJL	3.0
ELH03-021-51-02	073101029-50	6.7	JK	3.0	<3.0	UJL	3.0
ELH17-071-51-01	073101029-51	450	JK	15	<3.0	UJL	3.0
ELH17-071-51-02	073101029-52	120	JK	3.0	<3.0	UJL	3.0
ELH10-053-51-01	073101029-53	11	JK	3.0	<3.0	UJL	3.0
ELH10-053-51-02	073101029-54	6.5	JK	3.0	<3.0	UJL	3.0
ELH11-060-51-01	073101029-55	220	JK	6.0	<3.0	UJL	3.0
ELH11-060-51-02	073101029-56	40	JK	3.0	<3.0	UJL	3.0
ELH10-056-51-01	073101029-57	20	JK	3.0	<3.0	UJL	3.0
ELH10-056-51-02	073101029-58	21	JK	3.0	<3.0	UJL	3.0
ELH10-055-51-01	073101029-59	<3.0	UJK	3.0	<3.0	UJL	3.0
ELH10-055-51-02	073101029-60	12	JK	3.0	<3.0	UJL	3.0
ELH16-070-51-01	073101029-61	110		3.0	<3.0	UJL	3.0
ELH16-070-51-02	073101029-62	220		6.0	<3.0	UJL	3.0
ELH08-040-51-01	073101029-63	21		3.0	<3.0	UJL	3.0
ELH08-040-51-02	073101029-64	<3.0	U	3.0	<3.0	UJL	3.0
ELH05-025-51-01	073101029-65	50		3.0	<3.0	UJL	3.0
ELH05-025-51-02	073101029-66	<3.0	U	3.0	<3.0	UJL	3.0
ELH07-037-51-01	073101029-67	35		3.0	<3.0	UJL	3.0
ELH07-037-51-02	073101029-68	4.3		3.0	<3.0	UJL	3.0
ELH07-036-51-01	073101029-69	82		3.0	<3.0	UJL	3.0
ELH07-036-51-02	073101029-70	14		3.0	<3.0	UJL	3.0

ELH10-051-51-01	073101029-71	<3.0	U	3.0	<3.0	UJL	3.0
ELH10-051-51-02	073101029-72	18		3.0	<3.0	UJL	3.0
ELH10-050-51-01	073101029-73	<3.0	U	3.0	<3.0	UJL	3.0
ELH10-050-51-02	073101029-74	21		3.0	<3.0	UJL	3.0
ELH10-048-51-01	073101029-75	21		3.0	<3.0	UJL	3.0
ELH10-048-51-02	073101029-76	190		6.0	4.9	JL	3.0
ELH10-049-51-01	073101029-77	<3.0	U	3.0	<3.0	UJL	3.0
ELH10-049-51-02	073101029-78	4.7		3.0	<3.0	UJL	3.0
ELH07-032-51-01	073101029-79	63		3.0	<3.0	UJL	3.0
ELH07-032-51-02	073101029-80	14		3.0	<3.0	UJL	3.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
ELH07-031-51-01	073101029-81	42	JK	3.0	<3.0	UJK	3.0
ELH07-031-51-02	073101029-82	<3.0	UJK	3.0	<3.0	UJK	3.0
ELH07-030-51-01	073101029-83	17	JK	3.0	<3.0	UJK	3.0
ELH07-030-51-02	073101029-84	7.4	JK	3.0	<3.0	UJK	3.0
ELH06-027-51-01	073101029-85	30	JK	3.0	<3.0	UJK	3.0
ELH06-027-51-02	073101029-86	99	JK	3.0	<3.0	UJK	3.0
ELH10-046-51-01	073101029-87	8.1	JK	3.0	<3.0	UJK	3.0
ELH10-046-51-02	073101029-88	11	JK	3.0	<3.0	UJK	3.0
ELH04-022-51-01	073101029-89	22	JK	3.0	<3.0	UJK	3.0
ELH04-022-51-02	073101029-90	4.0	JK	3.0	<3.0	UJK	3.0
ELH07-034-51-01	073101029-91	49	JK	3.0	<3.0	UJK	3.0
ELH07-034-51-02	073101029-92	4.0	JK	3.0	<3.0	UJK	3.0
ELH10-057-51-01	073101029-93	<3.0	UJK	3.0	<3.0	UJK	3.0
ELH10-057-51-02	073101029-94	42	JK	3.0	<3.0	UJK	3.0
ELH02-020-51-01	073101029-95	49	JK	3.0	<3.0	UJK	3.0
ELH02-020-51-02	073101029-96	9.7	JK	3.0	<3.0	UJK	3.0
ELH10-047-51-01	073101029-97	60	JK	3.0	<3.0	UJK	3.0
ELH10-047-51-02	073101029-98	54	JK	3.0	<3.0	UJK	3.0
ELH07-038-51-01	073101029-99	59	JK	3.0	<3.0	UJK	3.0
ELH07-038-51-02	073101029-100	8.3	JK	3.0	<3.0	UJK	3.0
ELH02-017-51-01	073101029-101	47	JL	3.0	<3.0	UJL	3.0
ELH02-017-51-02	073101029-102	16	JL	3.0	<3.0	UJL	3.0
ELH10-058-51-01	073101029-103	5.7	JL	3.0	<3.0	UJL	3.0
ELH10-058-51-02	073101029-104	250	JL	6.0	<3.0	UJL	3.0
ELH07-033-51-01	073101029-105	66	JL	3.0	<3.0	UJL	3.0
ELH07-033-51-02	073101029-106	55	JL	3.0	<3.0	UJL	3.0
ELH02-019-51-01	073101029-107	34	JL	3.0	<3.0	UJL	3.0
ELH02-019-51-02	073101029-108	<3.0	UJL	3.0	<3.0	UJL	3.0
ELH01-016-51-01	073101029-109	110	JL	3.0	<3.0	UJL	3.0
ELH01-016-51-02	073101029-110	16	JL	3.0	<3.0	UJL	3.0
ELH01-004-51-01	073101029-111	16	JL	3.0	<3.0	UJL	3.0

ELH01-004-51-02	073101029-112	98	JL	3.0	<3.0	UJL	3.0
ELH10-045-51-01	073101029-113	55	JL	3.0	<3.0	UJL	3.0
ELH10-045-51-02	073101029-114	71	JL	3.0	<3.0	UJL	3.0
ELH01-002-51-01	073101029-115	45	JL	3.0	<3.0	UJL	3.0
ELH01-002-51-02	073101029-116	4.3	JL	3.0	<3.0	UJL	3.0
ELH10-044-51-01	073101029-117	41	JL	3.0	<3.0	UJL	3.0
ELH10-044-51-02	073101029-118	96	JL	3.0	11	JL	3.0
ELH08-039-51-01	073101029-119	36	JL	3.0	<3.0	UJL	3.0
ELH08-039-51-02	073101029-120	<3.0	UJL	3.0	<3.0	UJL	3.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
ELH01-003-51-01	073101029-121	24		3.0	<3.0	U	3.0
ELH01-003-51-02	073101029-122	40		3.0	<3.0	U	3.0
ELH01-012-51-01	073101029-123	39		3.0	<3.0	U	3.0
ELH01-012-51-02	073101029-124	34		3.0	<3.0	U	3.0
ELH07-035-51-01	073101029-125	65		3.0	<3.0	U	3.0
ELH07-035-51-02	073101029-126	<3.0	U	3.0	<3.0	U	3.0
ELH02-018-51-01	073101029-127	6.7		3.0	<3.0	U	3.0
ELH02-018-51-02	073101029-128	<3.0	U	3.0	<3.0	U	3.0
ELH01-013-51-01	073101029-129	43		3.0	<3.0	U	3.0
ELH01-013-51-02	073101029-130	33		3.0	<3.0	U	3.0
ELH01-003-52-01	073101029-131	28		3.0	<3.0	U	3.0
ELH01-001-52-01	073101029-132	40		3.0	<3.0	U	3.0
ELH01-006-52-01	073101029-133	57		3.0	<3.0	U	3.0
ELH01-003-52-02	073101029-134	36		3.0	<3.0	U	3.0
ELH01-004-052-02	073101029-135	120		3.0	<3.0	U	3.0
ELH01-001-052-02	073101029-136	87		3.0	<3.0	U	3.0
ELH01-002-052-01	073101029-137	87		3.0	<3.0	U	3.0

ANALYTICAL RESULTS
07/31/01

Sampling Date……….: 07-31-01
Matrix………………..: Soil
Date Analyzed……….: 7/31/01 – 8/2/01

Submittal Date………: 07-31-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ELH10-054-51-01	073101029-1	<3.0	3.0	<3.0	3.0	JM/NM
ELH10-054-51-02	073101029-2	23	3.0	<3.0	3.0	JM/NM
ELH01-001-51-01	073101029-3	40	3.0	<3.0	3.0	JM/NM
ELH01-001-51-02	073101029-4	56	3.0	<3.0	3.0	JM/NM
ELH01-015-51-01	073101029-5	71	3.0	<3.0	3.0	JM/NM
ELH01-015-51-02	073101029-6	<3.0	3.0	<3.0	3.0	JM/NM
ELH01-005-51-01	073101029-7	37	3.0	<3.0	3.0	JM/NM
ELH01-005-51-02	073101029-8	11	3.0	<3.0	3.0	JM/NM
ELH01-011-51-01	073101029-9	14	3.0	<3.0	3.0	JM/NM
ELH01-011-51-02	073101029-10	124	3.0	<3.0	3.0	JM/NM
ELH01-007-51-01	073101029-11	16	3.0	<3.0	3.0	JM/NM
ELH01-007-51-02	073101029-12	68	3.0	<3.0	3.0	JM/NM
ELH01-008-51-01	073101029-13	41	3.0	<3.0	3.0	JM/NM
ELH01-008-51-02	073101029-14	37	~~12.~~ 3.0	<3.0	3.0	JM/NM
ELH01-009-51-01	073101029-15	93	3.0	<3.0	3.0	JM/NM
ELH01-009-51-02	073101029-16	<3.0	3.0	<3.0	3.0	JM/NM
ELH01-010-51-01	073101029-17	6.5	3.0	<3.0	3.0	JM/NM
ELH01-010-51-02	073101029-18	<3.0	3.0	<3.0	3.0	JM/NM
ELH01-014-51-01	073101029-19	67	~~6.0~~ 3.0	<3.0	3.0	JM/NM
ELH01-014-51-02	073101029-20	7.2	3.0	<3.0	3.0	JM/NM
ELH01-006-51-01	073101029-21	45	~~12.~~ 3.0	<3.0	3.0	JM/NM
ELH01-006-51-02	073101029-22	<3.0	3.0	<3.0	3.0	JM/NM
ELH10-052-51-01	073101029-23	24	3.0	<3.0	3.0	JM/NM
ELH10-052-51-02	073101029-24	16	3.0	<3.0	3.0	JM/NM
ELH08-041-51-01	073101029-25	18	~~6.0~~ 3.0	<3.0	3.0	JM/NM
ELH08-041-51-02	073101029-26	<3.0	3.0	<3.0	3.0	JM/NM
ELH04-023-51-01	073101029-27	29	~~12.~~ 3.0	<3.0	3.0	JM/NM
ELH04-023-51-02	073101029-28	21	3.0	<3.0	3.0	JM/NM
ELH09-042-51-01	073101029-29	31	~~6.0~~ 3.0	<3.0	3.0	JM/NM

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ANALYTICAL RESULTS
07/31/01

Sampling Date……….: 07-31-01
Matrix……………….: Soil
Date Analyzed……….: 7/31/01 – 8/2/01

Submittal Date……..: 07-31-01
Method……………..: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ELH09-042-51-02	073101029-30	<3.0	3.0	<3.0	3.0	JM/NM
ELH05-026-51-01	073101029-31	67	3.0	<3.0	3.0	JM/NM
ELH05-026-51-02	073101029-32	<3.0	3.0	<3.0	3.0	JM/NM
ELH07-029-51-01	073101029-33	92	~~12~~ 3.0	<3.0	3.0	JM/NM
ELH07-029-51-02	073101029-34	<3.0	3.0	<3.0	3.0	JM/NM
ELH09-043-51-01	073101029-35	14	3.0	<3.0	3.0	JM/NM
ELH09-043-51-02	073101029-36	83	~~12~~ 3.0	<3.0	3.0	JM/NM
ELH15-067-51-01	073101029-37	76	3.0	<3.0	3.0	JM/NM
ELH15-067-51-02	073101029-38	14	3.0	<3.0	3.0	JM/NM
ELH16-068-51-01	073101029-39	1500	~~150~~ 60.0	<3.0	3.0	JM/NM
ELH15-068-51-02	073101029-40	200	6.0	<3.0	3.0	JM/NM
ELH04-024-51-01	073101029-41	~~18~~ 64	3.0	<3.0	3.0	JM/NM
ELH04-024-51-02	073101029-42	~~14~~ 51	3.0	<3.0	3.0	JM/NM
ELH10-059-51-01	073101029-43	~~11~~ 3.6	3.0	<3.0	3.0	JM/NM
ELH10-059-51-02	073101029-44	~~37~~ 108	3.0	<3.0	3.0	JM/NM
ELH16-069-51-01	073101029-45	~~60~~ 122	3.0	<3.0	3.0	JM/RP
ELH16-069-51-02	073101029-46	~~<3.0~~ 227	~~3.0~~ 15.0	<3.0	3.0	JM/RP
ELH07-028-51-01	073101029-47	~~11~~ 61	3.0	<3.0	3.0	JM/RP
ELH07-028-51-02	073101029-48	~~16~~ <3.0	3.0	<3.0	3.0	JM/RP
ELH03-021-51-01	073101029-49	~~9.4~~ 67.	3.0	<3.0	3.0	JM/RP
ELH03-021-51-02	073101029-50	~~<3.0~~ 6.7	3.0	<3.0	3.0	JM/RP
ELH17-071-51-01	073101029-51	~~13~~ 450	~~3.0~~ 15.0	<3.0	3.0	JM/RP
ELH17-071-51-02	073101029-52	~~<3.0~~ 120	3.0	<3.0	3.0	JM/RP
ELH10-053-51-01	073101029-53	~~110~~ 11	3.0	<3.0	3.0	JM/RP
ELH10-053-51-02	073101029-54	~~21~~ 6.5	3.0	<3.0	3.0	JM/RP
ELH11-060-51-01	073101029-55	~~290~~ 220	6.0	<3.0	3.0	JM/RP
ELH11-060-51-02	073101029-56	~~320~~ 40	~~12~~ 3.0	<3.0	3.0	JM/RP
ELH10-056-51-01	073101029-57	~~110~~ 20	3.0	<3.0	3.0	JM/RP
ELH10-056-51-02	073101029-58	~~82~~ 21	3.0	<3.0	3.0	JM/RP
ELH10-055-51-01	073101029-59	~~110~~ <3.0	3.0	<3.0	3.0	JM/RP
ELH10-055-51-02	073101029-60	~~68~~ 12	3.0	<3.0	3.0	JM/RP
ELH16-070-51-01	073101029-61	~~320~~ 110	~~12~~ 3.0	<3.0	3.0	JM/RP
ELH16-070-51-02	073101029-62	~~14~~ 220	~~3.0~~ 6.0	<3.0	3.0	JM/RP
ELH08-040-51-01	073101029-63	~~<3.0~~ 21	3.0	<3.0	3.0	JM/RP

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ANALYTICAL RESULTS

07/31/01

Sampling Date……….: 07-31-01
Matrix……………….: Soil
Date Analyzed……….: 7/31/01 – 8/2/01

Submittal Date………: 07-31-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ELH08-040-51-02	073101029-64	<3.0	3.0	<3.0	3.0	JM/RP
ELH05-025-51-01	073101029-65	~~<3.0~~ 50	3.0	<3.0	3.0	JM/RP
ELH05-025-51-02	073101029-66	<3.0	3.0	<3.0	3.0	JM/RP
ELH07-037-51-01	073101029-67	~~<3.0~~ 35	3.0	<3.0	3.0	JM/RP
ELH07-037-51-02	073101029-68	~~11~~ 4.3	3.0	<3.0	3.0	JM/RP
ELH07-036-51-01	073101029-69	~~10~~ 82	3.0	<3.0	3.0	JM/RP
ELH07-036-51-02	073101029-70	~~5.6~~ 14	3.0	<3.0	3.0	JM/RP
ELH10-051-51-01	073101029-71	~~4.9~~ <3.0	3.0	<3.0	3.0	JM/RP
ELH10-051-51-02	073101029-72	~~7.6~~ 18	3.0	<3.0	3.0	JM/RP
ELH10-050-51-01	073101029-73	~~9.7~~ <3.0	3.0	<3.0	3.0	JM/RP
ELH10-050-51-02	073101029-74	~~32~~ 21	3.0	<3.0	3.0	JM/RP
ELH10-048-51-01	073101029-75	~~8.9~~ 21	3.0	<3.0	3.0	JM/RP
ELH10-048-51-02	073101029-76	~~53~~ 190	~~3.0~~ 6.0	4.9	3.0	JM/RP
ELH10-049-51-01	073101029-77	~~330~~ <3.0	~~12.~~ 3.0	<3.0	3.0	JM/RP
ELH10-049-51-02	073101029-78	~~24~~ 4.7	3.0	<3.0	3.0	JM/RP
ELH07-032-51-01	073101029-79	~~39~~ 63	3.0	<3.0	3.0	JM/RP
ELH07-032-51-02	073101029-80	~~27~~ 14	3.0	<3.0	3.0	JM/RP
ELH07-031-51-01	073101029-81	42	3.0	<3.0	3.0	JM/RP
ELH07-031-51-02	073101029-82	<3.0	3.0	<3.0	3.0	JM/RP
ELH07-030-51-01	073101029-83	17	3.0	<3.0	3.0	JM/RP
ELH07-030-51-02	073101029-84	7.4	3.0	<3.0	3.0	JM/RP
ELH06-027-51-01	073101029-85	30	3.0	<3.0	3.0	JM/RP
ELH06-027-51-02	073101029-86	99	3.0	<3.0	3.0	NM/RP
ELH10-046-51-01	073101029-87	8.1	3.0	<3.0	3.0	NM/RP
ELH10-046-51-02	073101029-88	11	3.0	<3.0	3.0	NM/RP
ELH04-022-51-01	073101029-89	22	3.0	<3.0	3.0	NM/RP
ELH04-022-51-02	073101029-90	4.0	3.0	<3.0	3.0	NM/RP
ELH07-034-51-01	073101029-91	49	3.0	<3.0	3.0	NM
ELH07-034-51-02	073101029-92	4.0	3.0	<3.0	3.0	NM
ELH10-057-51-01	073101029-93	<3.0	3.0	<3.0	3.0	NM
ELH10-057-51-02	073101029-94	42	3.0	<3.0	3.0	NM
ELH02-020-51-01	073101029-95	49	~~6.0~~ 3.0	<3.0	3.0	NM
ELH02-020-51-02	073101029-96	9.7	~~12.~~ 3.0	<3.0	3.0	NM
ELH10-047-51-01	073101029-97	60	3.0	<3.0	3.0	NM

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ANALYTICAL RESULTS
07/31/01

Sampling Date……….: 07-31-01
Matrix……………….: Soil
Date Analyzed……….: 7/31/01 – 8/2/01

Submittal Date……….: 07-31-01
Method……………….: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ELH10-047-51-02	073101029-98	54	3.0	<3.0	3.0	NM
ELH07-038-51-01	073101029-99	59	3.0	<3.0	3.0	NM
ELH07-038-51-02	073101029-100	8.3	3.0	<3.0	3.0	NM
ELH02-017-51-01	073101029-101	47	~~12.~~ 3.0	<3.0	3.0	NM
ELH02-017-51-02	073101029-102	16	3.0	<3.0	3.0	NM
ELH10-058-51-01	073101029-103	5.7	3.0	<3.0	3.0	NM
ELH10-058-51-02	073101029-104	250	~~12.~~ 6.0	<3.0	3.0	NM
ELH07-033-51-01	073101029-105	66	3.0	<3.0	3.0	NM
ELH07-033-51-02	073101029-106	55	3.0	<3.0	3.0	NM
ELH02-019-51-01	073101029-107	34	3.0	<3.0	3.0	NM
ELH02-019-51-02	073101029-108	<3.0	3.0	<3.0	3.0	NM
ELH01-016-51-01	073101029-109	110	3.0	<3.0	3.0	NM
ELH01-016-51-02	073101029-110	16	3.0	<3.0	3.0	NM
ELH01-004-51-01	073101029-111	16	3.0	<3.0	3.0	NM
ELH01-004-51-02	073101029-112	98	3.0	<3.0	3.0	NM
ELH10-045-51-01	073101029-113	55	3.0	<3.0	3.0	NM
ELH10-045-51-02	073101029-114	71	3.0	<3.0	3.0	NM
ELH01-002-51-01	073101029-115	45	3.0	<3.0	3.0	NM
ELH01-002-51-02	073101029-116	4.3	3.0	<3.0	3.0	NM
ELH10-044-51-01	073101029-117	41	~~12.~~ 3.0	<3.0	3.0	NM
ELH10-044-51-02	073101029-118	96	3.0	~~<3.0~~ 11	3.0	NM
ELH08-039-51-01	073101029-119	36	3.0	<3.0	3.0	NM
ELH08-039-51-02	073101029-120	<3.0	3.0	<3.0	3.0	NM
ELH01-003-51-01	073101029-121	24	3.0	<3.0	3.0	NM
ELH01-003-51-02	073101029-122	40	3.0	<3.0	3.0	NM
ELH01-012-51-01	073101029-123	39	3.0	<3.0	3.0	NM
ELH01-012-51-02	073101029-124	34	3.0	<3.0	3.0	NM
ELH07-035-51-01	073101029-125	65	3.0	<3.0	3.0	NM
ELH07-035-51-02	073101029-126	<3.0	3.0	<3.0	3.0	NM
ELH02-018-51-01	073101029-127	6.7	3.0	<3.0	3.0	NM
ELH02-018-51-02	073101029-128	<3.0	3.0	<3.0	3.0	NM

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ANALYTICAL RESULTS
07/31/01

Sampling Date……….: 07-31-01
Matrix……………….: Soil
Date Analyzed……….: 7/31/01 – 8/2/01

Submittal Date………: 07-31-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ELH01-013-51-01	073101029-129	43	3.0	<3.0	3.0	NM
ELH01-013-51-02	073101029-130	33	3.0	<3.0	3.0	NM
ELH01-003-52-01	073101029-131	28	3.0	<3.0	3.0	NM
ELH01-001-52-01	073101029-132	40	3.0	<3.0	3.0	NM
ELH01-006-52-01	073101029-133	57	3.0	<3.0	3.0	NM
ELH01-003-52-02	073101029-134	36	3.0	<3.0	3.0	NM
ELH01-004-052-02	073101029-135	120	~~6.0~~ 3.0	<3.0	3.0	NM
ELH01-001-052-02	073101029-136	87	~~12.~~ 3.0	<3.0	3.0	NM
ELH01-002-052-01	073101029-137	87	3.0	<3.0	3.0	NM

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QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	12.8*	12.1*	51.2 48.4	21.9	22.6	87.6 90.4	2.41	2.64	2.50
Lead	<3.00	21.2	21.8	84.8 87.2	22.3	22.5	89.2 90.0	2.41	2.73	2.50
Arsenic	<3.00	15.7*	17.5*	62.8 70.0	20.9	21.7	83.6 86.8	2.64	2.64	2.50
Lead	<3.00	26.0	27.9	104 112	22.8	22.5	91.2 90.0	2.71	2.55	2.50
Arsenic	<3.00	14.1*	16.3*	56.4 65.2	21.3	22.2	85.2 88.8	2.64	2.25	2.50
Lead	<3.00	8.2*	14.5*	32.8 58.0	21.9	21.6	87.6 86.4	2.55	2.64	2.50
Arsenic	<3.00	14.5*	16.2*	58.0 64.8	21.3	21.6	85.2 90.0	2.25	2.72	2.50
Lead	<3.00	25	40*	~~100~~ NP mb ~~160~~ NP	22.1	22.5	88.4 90.0	2.64	2.69	2.50
Arsenic	<3.00	7.43*	13.4*	29.7 53.6	25.2	25.2	101 101	2.72	2.57	2.50
Lead	<3.00	10.2*	17.2*	40.8 68.8	22.1	22.3	88.4 90.0	2.69	2.64	2.50
Arsenic	<3.00	18.8	18.0*	75.2 72.0	23.0	24.7	92.0 98.8	2.57	2.63	2.50
Lead	<3.00	17.2*	17.6*	68.8 70.4	21.6	22.1	86.4 88.4	2.58	2.60	2.50
Arsenic	<3.00	20.4	20.0	81.6 80.0	21.5	24.1	86.0 96.4	2.63	2.69	2.50
Lead	<3.00	21.4	22.5	85.6 90.0	21.5	21.6	86.0 86.4	2.60	2.72	2.50

4 mb

NP-Not practical due to sample result being more than 5 times the spiked concentration
*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm.

Ruben Parra
Technical Director

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DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 080401008

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 0804010008, El Paso County Metal Survey. Ninety-seven soil samples and two samples from previous batches that were re-analyzed were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

UTP05-020-51-01	UTP05-026-51-02	UTP06-033-51-01	UTP08-039-51-02	UTP10-046-51-01	UTP12-052-51-02	UTP13-059-51-01
UTP05-020-51-02	UTP05-027-51-02	UTP06-033-51-02	UTP08-040-51-01	UTP10-046-51-02	UTP12-053-51-01	UTP13-059-51-02
UTP05-021-51-02	UTP05-027-51-02	UTP06-034-51-01	UTP08-040-51-02	UTP11-047-51-01	UTP12-053-51-02	UTP13-060-51-01
UTP05-021-51-02	UTP05-028-51-01	UTP06-034-51-02	UTP09-041-51-01	UTP11-047-51-02	UTP12-054-51-01	UTP13-060-51-02
UTP05-022-51-01	UTP05-028-51-02	UTP06-025-51-01	UTP09-041-51-02	UTP11-048-51-01	UTP12-054-51-02	UTP13-061-51-01
UTP05-022-51-02	UTP05-029-51-01	UTP06-035-51-02	UTP09-042-51-01	UTP11-048-51-02	UTP12-055-51-01	UTP13-061-51-02
UTP05-023-51-01	UTP05-029-51-02	UTP07-036-51-01	UTP09-042-51-02	UTP11-049-51-01	UTP12-055-51-02	UTP12-056-52-02
UTP05-023-51-02	UTP06-030-51-01	UTP07-036-41-02	UTP09-043-51-01	UTP11-049-51-02	UTP12-056-51-01	UTP11-048-52-02
UTP05-024-51-01	UPT06-030-51-02	UPT07-037-51-01	UTP09-043-51-02	UTP12-050-51-01	UTP12-056-51-02	UTP05-020-52-02
UTP05-024-51-02	UTP06-031-51-01	UTP07-037-51-02	UTP09-044-51-01	UTP12-050-51-02	UTP12-057-51-01	UTP05-029-52-02
UTP05-025-51-01	UTP06-031-51-02	UTP07-038-51-01	UTP09-044-51-02	UTP12-051-51-01	UTP12-057-51-02	UTP10-046-52-02
UTP05-025-51-02	UTP06-032-51-01	UTP07-038-51-02	UTP10-045-51-01	UTP12-051-51-02	UTP13-058-51-01	UTP07-036-52-01
UTP05-026-51-01	UTP06-032-51-02	UTP08-039-51-01	UTP10-045-51-02	UTP12-052-51-01	UTP13-058-51-02	ELH16-068A-52-01
AML01-002A-05-01	ALM01-002A-51-02	ELH16-068A-51-01	ELH16-068A-51-02	ELH16-068B-51-01	ELH16-068B-51-02	ALM01-002-51-03
ELH16-068-51-03						

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for*

Inorganic Data Review (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-13-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

METALS DATA EVALUATION

Roy F. Weston, Inc.
El Paso County Metal Survey

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration blanks associated with this case.

AND

Target analytes were detected in the following preparation blanks. Sample concentrations less than five times the highest analyte concentration reported in associated blanks are flagged UB (not detected, detection limit raised due to possible blank contamination).

PREPARATION BLANK/MATRIX	ANALYTE	CONC. ppm	QUALIFIED SAMPLES
RB1 8/4 / soil	As	0.377	None
RB5 8/4 / soil	Pb	0.196	None
RB3 8/4 / soil	Pb	0.326	None

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

METALS DATA EVALUATION (continued)

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCSs were within the established control limits.

8. Duplicate Sample Analysis:

Samples UTP05-020-51-01, UTP06-030-51-01, UTP08-040-51-01, UTP12-050-51-01, UTP14-060-51-01 and five laboratory control samples underwent duplicate analysis for the soil matrix. QC criteria are that the Relative Percent Difference (RPD) values for the duplicate sample analysis be less than 20 percent for aqueous samples and 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± the CRDL for the water matrix or ± two times the CRDL for the soil matrix. QC criteria were not met for the following analytes:

ANALYTE	MATRIX	RPD or CONC	ASSOCIATED SAMPLES	QUALIFIER FLAG
Pb	Soil	121%	UTP12-050-51-01, UTP12-050-51-02, UTP12-051-51-01, UTP12-051-51-02, UTP12-052-51-01, UTP12-052-51-02, UTP12-053-51-01, UTP12-053-51-02, UTP12-054-51-01, UTP12-054-51-02, UTP12-055-51-01, UTP12-055-51-02, UTP12-056-51-01, UTP12-056-51-02, UTP12-057-51-01, UTP12-057-51-02, UTP13-058-51-01, UTP13-058-51-02, UTP13-059-51-01, UTP13-059-51-02	JK or UJK

Samples UTP05-020-51-01, UTP06-030-51-01, and UTP08-040-51-01 had lead results that exceeded the spike concentration by a factor of four or more, so recovery limits for this sample do not apply.

9. Spiked Sample Analysis:

Samples UTP05-020-51-01, UTP06-030-51-01, UTP08-040-51-01, UTP12-050-51-01, and UTP14-060-51-01 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

METALS DATA EVALUATION (continued)

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
As (MS)	soil	129	UTP05-020-51-01, UTP05-020-51-02, UTP05-021-51-01, UTP05-021-51-02, UTP05-022-51-01, UTP05-022-51-02, UTP05-023-51-01, UTP05-023-51-02, UTP05-024-51-01, UTP05-024-51-02, UTP02-025-51-01, UTP05-025-51-02, UTP05-026-51-01, UTP05-026-51-02, UTP05-027-51-01, UTP05-027-51-02, UTP05-038-51-01, UTP05-028-51-02, UTP05-029-51-01, UTP05-029-51-02	JH if detected
Pb (MSD)	soil	154	UTP12-050-51-01, UTP12-050-51-02, UTP12-051-51-01, UTP12-051-51-02, UTP12-052-51-01, UTP12-052-51-02, UTP12-053-51-01, UTP12-053-51-02, UTP12-054-51-01, UTP12-054-51-02, UTP12-055-51-01, UTP12-055-51-02, UTP12-056-51-01, UTO12-056-51-02, UTP12-057-51-01, UTP12-057-51-02, UTP13-058-51-01, UTP13-058-51-02, UTP13-059-51-01, UTP13-059-51-02	JH if detected
Pb (MSD)	soil	624	Same As Above	JH if detected

Samples UTP05-020-51-01, UTP06-030-51-01, and UTP08-040-51-01 had lead results that exceeded the spike concentration by a factor of four or more, so recovery limits for this sample do not apply.

10. ICP Serial Dilution:

No serial dilutions were performed with this group of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

Roy F. Weston, Inc.
El Paso County Metal Survey

METALS DATA EVALUATION (continued)

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
UTP05-020-51-01	Lead	4				4
UTP05-021-51-02	Lead	8				8
UTP05-024-51-01	Lead	4				4
UTP05-024-51-02	Lead	5				5
UTP05-025-51-01	Lead	2				2
UTP05-026-51-01	Lead	2				2
UTP05-026-51-02	Lead	4				4
UTP05-027-51-01	Lead	2				2
UTP05-027-51-02	Lead	10				10
UTP05-028-51-02	Lead	4				4
UTP02-029-51-02	Lead	2				2
UTP06-030-51-01	Lead	20				20
UTP06-030-51-02	Lead	4				4
UTP06-032-51-01	Lead	100				100
UTP06-032-51-02	Lead	20				20
UTP06-033-51-01	Lead	5				5
UTP06-034-51-01	Lead	10				10
UTP06-035-51-01	Lead	10				10
UTP07-036-51-01	Lead	10				10
UTP07-036-51-02	Lead	10				10
UTP07-037-51-01	Lead	4				4
UTP07-037-51-02	Lead	4				4
UTP07-038-51-01	Lead	10				10

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SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
UTP07-038-51-02	Lead	20				20
UTP08-039-51-01	Lead	4				4
UTP08-039-51-02	Lead	5				5
UTP08-040-51-01	Lead	2				2
UTP08-040-51-02	Lead	4				4
UTP09-041-51-01	Lead	10				10
UTP09-042-51-01	Lead	10				10
UTP09-043-51-01	Lead	10				10
UTP09-043-51-02	Lead	2				2
UTP09-044-51-01	Lead	5				5
UTP10-045-51-01	Lead	2				2
UTP10-046-51-01	Lead	2				2
UTP10-047-51-01	Lead	2				2
UTP11-048-51-01	Lead	2				2
UTP12-050-51-01	Lead	2				2
UTP12-051-51-01	Lead	5				5
UTP12-051-51-02	Lead	5				5
UTP12-053-51-02	Lead	4				4
UTP12-054-51-02	Lead	2				2
UTP12-055-51-01	Lead	2				2
UTP12-056-51-01	Lead	2				2
UTP12-056-51-02	Lead	2				2
UTP12-057-51-01	Lead	2				2
UTP12-057-51-02	Lead	2				2

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
UTP12-056-52-02	Lead	2				2
UTP05-020-52-02	Lead	2				2
UTP07-036-52-01	Lead	10				10
EH16-068A-52-01	Lead	2				2
ALM01-002A-51-01	Lead	4				4
ALM01-002A-51-02	Lead	2				2
ELH16-068A-51-01	Lead	2				2
ELH16-068A-51-02	Lead	4				4
ELH16-068B-51-01	Lead	2				2
ELH16-068B-51-02	Lead	2				2

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Three preparation blanks contained some low level contamination. None of the samples were affected and no qualifications were necessary.
One of the spiked duplicate results were out of control limits for lead. These analytes were qualified as estimated, unknown bias in the affected samples.
One matrix spike contained arsenic that recovered above required control limits. This analyte was qualified as estimated, biased high if detected in the affected samples. One spike contained lead that recovered above required limits in the spike and spike duplicate. All affected samples had this analyte qualified as estimated, biased high if detected.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.
Due to salt problems, clogging of the instruments, and the RPD values of the duplicate samples being high, the reporting limits for samples UTP05-020-51-02 (As), UTP05-023-51-02 (As), UTP05-025-51-01 (As), UTP05-025-51-02 9As), UTP05-026-51-02 (As), UTP08-039-51-01(As), UTP11-048-51-01 (As),

UTP12-056-51-02 (As), and UTP12-053-51-02 (As) were raised from 32 mg/kg to 5 mg/kg. Samples UTP07-037-51-02 and UTP08-040-51-01 required a 2 factor dilution and their reporting limits were raised to 6 mg/kg. Sample UTP12-053-51-02 required a 5 factor dilution and its reporting limit was raised to 15 mg/kg.

The analytical data is acceptable for use with the qualifications listed above.

Sampling Date - August 4, 2001
Method of Analysis - 6010B

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
UTP05-020-51-01	080401008-1	220	D	12	6.4	JH	3.0
UTP05-020-51-02	080401008-2	100		3.0	<5.0	U	5.0
UTP05-021-51-01	080401008-3	44		3.0	<3.0	U	3.0
UTP05-021-51-02	080401008-4	450	D	24	15	JH	3.0
UTP05-022-51-01	080401008-5	54		3.0	<3.0	U	3.0
UTP05-022-51-02	080401008-6	26		3.0	<3.0	U	3.0
UTP05-023-51-01	080401008-7	38		3.0	<3.0	U	3.0
UTP05-023-51-02	080401008-8	95		3.0	<5.0	U	5.0
UTP05-024-51-01	080401008-9	280	D	12	4.5	JH	3.0
UTP05-024-51-02	080401008-10	490	D	15	18	JH	3.0
UTP05-025-51-01	080401008-11	120	D	6.0	<5.0	U	5.0
UTP05-025-51-02	080401008-12	63		3.0	<5.0	U	5.0
UTP05-026-51-01	080401008-13	160	D	6.0	<3.0	U	3.0
UTP05-026-51-02	080401008-14	220	D	12	<5.0	U	5.0
UTP05-027-51-01	080401008-15	130	D	6.0	<3.0	U	3.0
UTP05-027-51-02	080401008-16	590	D	30	24	JH	3.0
UTP05-028-51-01	080401008-17	94		3.0	<3.0	U	3.0
UTP05-028-51-02	080401008-18	240	D	12	6.6	JH	3.0
UTP05-029-51-01	080401008-19	65		3.0	<3.0	U	3.0
UTP05-029-51-02	080401008-20	190	D	6.0	5.3	JH	3.0
UTP06-030-51-01	080401008-21	1400	D	60	51		3.0
UTP06-030-51-02	080401008-22	250	D	12	6.5		3.0
UTP06-031-51-01	080401008-23	890	D	30	20		3.0
UTP06-031-51-02	080401008-24	22		3.0	<3.0	U	3.0
UTP06-032-51-01	080401008-25	12		3.0	<3.0	U	3.0
UTP06-032-51-02	080401008-26	1100	D	60	38		3.0
UTP06-033-51-01	080401008-27	420	D	15	13		3.0
UTP06-033-51-02	080401008-28	6.2		3.0	9.7		3.0
UTP06-034-51-01	080401008-29	650	D	30	16		3.0
UTP06-034-51-02	080401008-30	11		3.0	40		3.0
UTP06-035-51-01	080401008-31	610	D	30	21		3.0

MS

UTP06-035-51-02	080401008-32	14		3.0	14		3.0
UTP07-036-51-01	080401008-33	850	D	30	23		3.0
UTP07-036-51-02	080401008-34	730	D	30	16		3.0
UTP07-037-51-01	080401008-35	240	D	12	9.2		3.0
UTP07-037-51-02	080401008-36	270	D	12	<6.0	U	6.0
UTP07-038-51-01	080401008-37	750	D	30	30		3.0
UTP07-038-51-02	080401008-38	1500	D	60	49		3.0
UTP08-039-51-01	080401008-39	220	D	12	<5.0	U	5.0
UTP08-039-51-02	080401008-40	390	D	15	8.5		3.0

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
UTP08-040-51-01	080401008-41	140	D	6.0	<3.0	U	3.0
UTP08-040-51-02	080401008-42	310	D	12	<6.0	U	6.0
UTP09-041-51-01	080401008-43	750	D	30	21		3.0
UTP09-041-51-02	080401008-44	79		3.0	14		3.0
UTP09-042-51-01	080401008-45	810	D	30	12		3.0
UTP09-042-51-02	080401008-46	30		3.0	17		3.0
UTP09-043-51-01	080401008-47	850	D	30	38		3.0
UTP09-043-51-02	080401008-48	160	D	6.0	13		3.0
UTP09-044-51-01	080401008-49	520	D	15	17		3.0
UTP09-044-51-02	080401008-50	74		3.0	20		3.0
UTP10-045-51-01	080401008-51	150	D	6.0	<3.0	U	3.0
UTP10-045-51-02	080401008-52	<3.00	U	3.0	<3.0	U	3.0
UTP10-046-51-01	080401008-53	140	D	6.0	<3.0	U	3.0
UTP10-046-51-02	080401008-54	62		3.0	<3.0	U	3.0
UTP10-047-51-01	080401008-55	140	D	6.0	<3.0	U	3.0
UTP11-047-51-02	080401008-56	12		3.0	<3.0	U	3.0
UTP11-048-51-01	080401008-57	140	D	6.0	<5.0	U	5.0
UTP11-048-51-02	080401008-58	27		3.0	<3.0	U	3.0
UTP11-049-51-01	080401008-59	64		3.0	<3.0	U	3.0
UTP11-049-51-02	080401008-60	<3.00	U	3.0	<3.0	U	3.0
UTP12-050-51-01	080401008-61	43	JK	3.0	<3.0	U	3.0
UTP12-050-51-02	080401008-62	170	DJK	6.0	5.7		3.0
UTP12-051-51-01	080401008-63	270	DJK	15	7.9		3.0
UTP12-051-51-02	080401008-64	320	DJK	15	11		3.0
UTP12-052-51-01	080401008-65	63	JK	3.0	<3.0	U	3.0
UTP12-052-51-02	080401008-66	29	JK	3.0	<3.0	U	3.0
UTP12-053-51-01	080401008-67	17	JK	3.0	<3.0	U	3.0
UTP12-053-51-02	080401008-68	210	DJK	12	<15	U	15
UTP12-054-51-01	080401008-69	36	JK	3.0	<3.0	U	3.0

UTP12-054-51-02	080401008-70	160	DJK	6.0	7.5		3.0
UTP12-055-51-01	080401008-71	120	DJK	6.0	<3.0	U	3.0
UTP12-055-51-02	080401008-72	48	JK	3.0	<3.0	U	3.0
UTP12-056-51-01	080401008-73	150	DJK	6.0	<3.0	U	3.0
UTP12-056-51-02	080401008-74	190	DJK	6.0	<5.0	U	5.0
UTP12-057-51-01	080401008-75	180	DJK	6.0	<3.0	U	3.0
UTP12-057-51-02	080401008-76	150	DJK	6.0	16		3.0
UTP13-058-51-01	080401008-77	10	JK	3.0	<3.0	U	3.0
UTP13-058-51-02	080401008-78	5.0	JK	3.0	<3.0	U	3.0
UTP13-059-51-01	080401008-79	27	JK	3.0	<3.0	U	3.0
UTP13-059-51-02	080401008-80	8.7	JK	3.0	<3.0	U	3.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
UTP13-060-51-01	080401008-81	26		3.0	<3.0	U	3.0
UTP13-060-51-02	080401008-82	21		3.0	<3.0	U	3.0
UTP13-061-51-01	080401008-83	25		3.0	<3.0	U	3.0
UTP13-061-51-02	080401008-84	4.5		3.0	<3.0	U	3.0
UTP12-056-52-02	080401008-85	180	D	6.0	<5.0	U	5.0
UTP11-048-52-02	080401008-86	18		3.0	<3.0	U	3.0
UTP05-020-52-02	080401008-87	130	D	6.0	<3.0	U	3.0
UTP05-029-52-02	080401008-88	74		3.0	<3.0	U	3.0
UTP10-046-52-02	080401008-89	84		3.0	<3.0	U	3.0
UTP07-036-52-01	080401008-90	790	D	30	21		3.0
ELH16-068A-52-01	080401008-91	170	D	6.0	<3.0	U	3.0
ALM01-002A-51-01	080401008-92	280	D	12	<3.0	U	3.0
ALM01-002A-51-02	080401008-93	130	D	6.0	<3.0	U	3.0
ELH16-068A-51-01	080401008-94	170	D	6.0	<3.0	U	3.0
ELH16-068A-51-02	080401008-95	240	D	12	<3.0	U	3.0
ELH16-068B-51-01	080401008-96	140	D	6.0	<3.0	U	3.0
ELH16-068B-51-02	080401008-97	160	D	6.0	<3.0	U	3.0
ALM01-002-51-03	080101003-52	<3.0	U	3.0	<3.0	U	3.0
ELH16-068-51-03	073101029-138	100		3.0	<3.0	U	3.0

mh

ANALYTICAL RESULTS
08/04/01

Sampling Date……….: 08-04-01　　Submittal Date……..: 08-04-01
Matrix………………..: Soil　　Method………………: 6010B
Date Analyzed……….: 8/5/01-8/7/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
UTP05-020-51-01	080401008-1	220	12	6.4	3.0	NM
UTP05-020-51-02	080401008-2	100	3.0	<5.0	5.0	NM
UTP05-021-51-01	080401008-3	44	3.0	<3.0	3.0	NM
UTP05-021-51-02	080401008-4	450	24	15	3.0	NM
UTP05-022-51-01	080401008-5	54	3.0	<3.0	3.0	NM
UTP05-022-51-02	080401008-6	26	3.0	<3.0	3.0	NM
UTP05-023-51-01	080401008-7	38	3.0	<3.0	3.0	NM
UTP05-023-51-02	080401008-8	95	3.0	<5.0	5.0	NM
UTP05-024-51-01	080401008-9	280	12	4.5	3.0	NM
UTP05-024-51-02	080401008-10	490	15	18	3.0	NM
UTP05-025-51-01	080401008-11	120	6.0	<5.0	5.0	NM
UTP05-025-51-02	080401008-12	63	3.0	<5.0	5.0	NM
UTP05-026-51-01	080401008-13	160	6.0	<3.0	3.0	NM
UTP05-026-51-02	080401008-14	220	12	<5.0	5.0	NM
UTP05-027-51-01	080401008-15	130	6.0	<3.0	3.0	NM
UTP05-027-51-02	080401008-16	590	30	24	3.0	NM
UTP05-028-51-01	080401008-17	94	3.0	<3.0	3.0	NM
UTP05-028-51-02	080401008-18	240	12	6.6	3.0	NM
UTP05-029-51-01	080401008-19	65	3.0	<3.0	3.0	NM
UTP05-029-51-02	080401008-20	190	6.0	5.3	3.0	NM
UTP06-030-51-01	080401008-21	1400	60	51	3.0	NM
UTP06-030-51-02	080401008-22	250	12	6.5	3.0	NM
UTP06-031-51-01	080401008-23	890	30	20	3.0	NM
UTP06-031-51-02	080401008-24	22	3.0	<3.0	3.0	NM
UTP06-032-51-01	080401008-25	12	3.0	<3.0	3.0	NM
UTP06-032-51-02	080401008-26	1100	60	38	3.0	NM
UTP06-033-51-01	080401008-27	420	15	13	3.0	NM
UTP06-033-51-02	080401008-28	6.2	3.0	9.7	3.0	NM
UTP06-034-51-01	080401008-29	650	30	16	3.0	NM
UTP06-034-51-02	080401008-30	11	3.0	40	3.0	NM

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ANALYTICAL RESULTS
08/04/01

Sampling Date..........: 08-04-01　　Submittal Date.........: 08-04-01
Matrix....................: Soil　　Method..................: 6010B
Date Analyzed..........: 8/5/01-8/7/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
UTP06-035-51-01	080401008-31	610	30	21	3.0	NM
UTP06-035-51-02	080401008-32	14	3.0	14	3.0	NM
UTP07-036-51-01	080401008-33	850	30	23	3.0	NM
UTP07-036-51-02	080401008-34	730	30	16	3.0	NM
UTP07-037-51-01	080401008-35	240	12	9.2	3.0	NM
UTP07-037-51-02	080401008-36	270	12	<6.0	6.0	NM
UTP07-038-51-01	080401008-37	750	30	30	3.0	NM
UTP07-038-51-02	080401008-38	1500	60	49	3.0	NM
UTP08-039-51-01	080401008-39	220	12	<5.0	5.0	NM
UTP08-039-51-02	080401008-40	390	15	8.5	3.0	NM
UTP08-040-51-01	080401008-41	140	6.0	<3.0	3.0	NM
UTP08-040-51-02	080401008-42	310	12	<6.0	6.0	NM
UTP09-041-51-01	080401008-43	750	30	21	3.0	NM
UTP09-041-51-02	080401008-44	79	3.0	14	3.0	NM
UTP09-042-51-01	080401008-45	810	30	12	3.0	NM
UTP09-042-51-02	080401008-46	30	3.0	17	3.0	NM
UTP09-043-51-01	080401008-47	850	30	38	3.0	NM
UTP09-043-51-02	080401008-48	160	6.0	13	3.0	NM
UTP09-044-51-01	080401008-49	520	15	17	3.0	NM
UTP09-044-51-02	080401008-50	74	3.0	20	3.0	NM
UTP10-045-51-01	080401008-51	150	6.0	<3.0	3.0	NM
UTP10-045-51-02	080401008-52	<3.00	3.0	<3.0	3.0	NM
UTP10-046-51-01	080401008-53	140	6.0	<3.0	3.0	NM
UTP10-046-51-02	080401008-54	62	3.0	<3.0	3.0	NM
UTP10-047-51-01	080401008-55	140	6.0	<3.0	3.0	NM
UTP11-047-51-02	080401008-56	12	3.0	<3.0	3.0	NM
UTP11-048-51-01	080401008-57	140	6.0	<5.0	5.0	NM
UTP11-048-51-02	080401008-58	27	3.0	<3.0	3.0	NM
UTP11-049-51-01	080401008-59	64	3.0	<3.0	3.0	NM
UTP11-049-51-02	080401008-60	<3.00	3.0	<3.0	3.0	NM
UTP12-050-51-01	080401008-61	43	3.0	<3.0	3.0	NM
UTP12-050-51-02	080401008-62	170	6.0	5.7	3.0	NM
UTP12-051-51-01	080401008-63	270	15	7.9	3.0	NM

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ANALYTICAL RESULTS
08/04/01

Sampling Date……….: 08-04-01
Matrix………………..: Soil
Date Analyzed……….: 8/5/01-8/7/01

Submittal Date………: 08-04-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
UTP12-051-51-02	080401008-64	320	15	11	3.0	NM
UTP12-052-51-01	080401008-65	63	3.0	<3.0	3.0	NM
UTP12-052-51-02	080401008-66	29	3.0	<3.0	3.0	NM
UTP12-053-51-01	080401008-67	17	3.0	<3.0	3.0	NM
UTP12-053-51-02	080401008-68	210	12	<15	15	NM
UTP12-054-51-01	080401008-69	36	3.0	<3.0	3.0	NM
UTP12-054-51-02	080401008-70	160	6.0	7.5	3.0	NM
UTP12-055-51-01	080401008-71	120	6.0	<3.0	3.0	NM
UTP12-055-51-02	080401008-72	48	3.0	<3.0	3.0	NM
UTP12-056-51-01	080401008-73	150	6.0	<3.0	3.0	NM
UTP12-056-51-02	080401008-74	190	6.0	<5.0	5.0	NM
UTP12-057-51-01	080401008-75	180	6.0	<3.0	3.0	NM
UTP12-057-51-02	080401008-76	150	6.0	16	3.0	NM
UTP13-058-51-01	080401008-77	10	3.0	<3.0	3.0	NM
UTP13-058-51-02	080401008-78	5.0	3.0	<3.0	3.0	NM
UTP13-059-51-01	080401008-79	27	3.0	<3.0	3.0	NM
UTP13-059-51-02	080401008-80	8.7	3.0	<3.0	3.0	NM
UTP13-060-51-01	080401008-81	26	3.0	<3.0	3.0	NM
UTP13-060-51-02	080401008-82	21	3.0	<3.0	3.0	NM
UTP13-061-51-01	080401008-83	25	3.0	<3.0	3.0	NM
UTP13-061-51-02	080401008-84	4.5	3.0	<3.0	3.0	NM
UTP12-056-52-02	080401008-85	180	6.0	<5.0	5.0	NM
UTP11-048-52-02	080401008-86	18	3.0	<3.0	3.0	NM
UTP05-020-52-02	080401008-87	130	6.0	<3.0	3.0	NM
UTP05-029-52-02	080401008-88	74	3.0	<3.0	3.0	NM
UTP10-046-52-02	080401008-89	84	3.0	<3.0	3.0	NM
UTP07-036-52-01	080401008-90	790	30	21	3.0	NM
ELH16-068A-52-01	080401008-91	170	6.0	<3.0	3.0	NM
ALM01-002A-51-01	080401008-92	280	12	<3.0	3.0	NM
ALM01-002A-51-02	080401008-93	130	6.0	<3.0	3.0	NM
ELH16-068A-51-01	080401008-94	170	6.0	<3.0	3.0	NM
ELH16-068A-51-02	080401008-95	240	12	<3.0	3.0	NM
ELH16-068B-51-01	080401008-96	140	6.0	<3.0	3.0	NM
ELH16-068B-51-02	080401008-97	160	6.0	<3.0	3.0	NM

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ANALYTICAL RESULTS
08/04/01

Sampling Date……….: 08-04-01
Matrix………………..: Soil
Date Analyzed………: 8/5/01-8/7/01

Submittal Date………: 08-04-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ALM01-002-51-03	080101003-52	<3.0	3.0	<3.0	3.0	NM
ELH16-068-51-03	073101029-138	100	3.0	<3.0	3.0	NM

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QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	23.7	32.3*	94.8 129	25.1	25.6	100 102	2.46	2.61	2.50
Lead	<3.00	60	177	NP NP	24.1	24.3	96.4 97.2	2.53	2.59	2.50
Arsenic	<3.00	21.4	21.3	85.6 85.2	23.7	24.5	94.8 98.0	2.71	2.46	2.50
Lead	<3.00	0.00	0.00	NP NP	20.8	21.4	83.2 85.6	2.57	2.62	2.50
Arsenic	<3.00	25.6	25.2	102 101	23.2	22.8	92.8 91.2	2.64	2.56	2.50
Lead	<3.00	96.0	105	NP NP	24.3	22.0	97.2 88.0	2.62	2.52	2.50
Arsenic	<3.00	22.9	25.9	91.6 104	28.4	26.6	114 106	2.47	2.56	2.50
Lead	<3.00	38.5*	156*	154 624	23.4	24.1	93.6 96.4	2.48	2.52	2.50
Arsenic	<3.00	25.8	24.5	103 98.0	29.6	27.6	118 110	2.74	2.72	2.50
Lead	<3.00	19.7	16.7	78.8 66.8	24.2	24.4	96.8 97.6	2.52	2.66	2.50

NP – Not practical because sample result is more than 5 times greater than the spike level.
*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm.

Ruben Parra
Technical Director

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DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER 6S2021 SDG/PROJ. NUMBER 213173

Roy F. Weston has completed a QA review for Case No. 6S2021, SDG No. 213173, El Paso County Metal Survey. Twenty-nine soil samples were analyzed for arsenic and lead by XENCO Laboratories. Sample numbers are listed below.

SAMPLE NUMBERS

EPL01-004-53-01	ALA01-013-53-02	ARR01-038-53-01
SMS01-007-53-02-6F	ELH01-001-53-01	MES01-002-53-01
SMS01-026-53-01-26	ELH01-002-53-01	MES01-006-53-02
UTP01-002-53-02	ELH01-002-53-02	MES02-010-53-02
UTP02-009-53-01	ELH01-003-53-01	VIL05-005-53-01
UTP05-021-53-02	ELH01-005-53-02	
UTP05-028-53-01	ELH01-006-53-01	
UTP09-041-53-01	ELH01-006-53-02	
UTP11-048-53-01	ARR01-003-53-02	
UTP12-057-53-01	ARR01-020-53-01	
ALA01-003-53-02	ARR01-032-53-01	
ALA01-010-53-01	ARR01-034-53-02	

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Kristie Rolf DATE 09/24/01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

Roy F. Weston, Inc.
El Paso County Metal Survey

INORGANIC DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 Method 6020.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration and preparation blanks associated with this case.

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCS were within the established control limits.

8. Duplicate Sample Analysis:

Samples EPL01-004-53-01 ELH01-006-53-01 and underwent duplicate analysis for the soil matrix. The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 20 percent for aqueous samples and 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± the CRDL for the water matrix or ± two times the CRDL for the soil matrix.

9. Spiked Sample Analysis:

Samples EPL01-004-53-01 ELH01-006-53-01 underwent spike analysis for the soil matrix. . The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

ANALYTE	MATRIX	RECOVERY %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Lead	Soil	12	EPL01-004-53-01; SMS01-007-53-02-6F; SMS01-026-53-01-26; UTP01-002-53-02; UTP02-009-53-01; UTP05-021-53-02; UTP05-028-53-01; UTP09-041-53-01; UTP11-048-53-01; UTP12-057-53-01; ALA01-003-53-02; ALA01-010-53-01; ALA01-013-53-02; ELH01-001-53-01; ELH01-002-53-01; ELH01-002-53-02; ELH01-003-53-01; ELH01-005-53-02	JL or UJL
Lead	Soil	50	ELH01-006-53-01; ELH01-006-53-02; ARR01-003-53-02; ARR01-020-53-01; ARR01-032-53-01; ARR01-034-53-02; ARR01-038-53-01; MES01-002-53-01; MES01-006-53-02; MES02-010-53-02; VIL05-005-53-01	JL or UJL

10. ICP Serial Dilution:

No serial dilutions were performed with this batch of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

SAMPLE NO	ANALYTE	DF	ASW (g)	% SOLIDS	ADV (mL)	SQL FACTOR
EPL01-004-53-01	Ar and Pb	10				10
SMS01-007-53-02-6F	Ar and Pb	10				10
SMS01-026-53-01-26	Ar and Pb	10				10
UTP01-002-53-02	Ar and Pb	10				10

Roy F. Weston, Inc.
El Paso County Metal Survey

SAMPLE NO	ANALYTE	DF	ASW (g)	% SOLIDS	ADV (mL)	SQL FACTOR
UTP02-009-53-01	Ar and Pb	10				10
UTP05-021-53-02	Ar and Pb	10				10
UTP05-028-53-01	Ar and Pb	10				10
UTP09-041-53-01	Ar and Pb	10				10
UTP11-048-53-01	Ar and Pb	10				10
UTP12-057-53-01	Ar and Pb	10				10
ALA01-003-53-02	Ar and Pb	10				10
ALA01-010-53-01	Ar and Pb	10				10
ALA01-013-53-02	Ar and Pb	10				10
ELH01-001-53-01	Ar and Pb	10				10
ELH01-002-53-01	Ar and Pb	10				10
ELH01-002-53-02	Ar and Pb	10				10
ELH01-003-53-01	Ar and Pb	10				10
ELH01-005-53-02	Ar and Pb	10				10
ELH01-006-53-01	Ar and Pb	10				10
ELH01-006-53-02	Ar and Pb	10				10
ARR01-003-53-02	Ar and Pb	10				10
ARR01-020-53-01	Ar and Pb	10				10
ARR01-032-53-01	Ar and Pb	10				10
ARR01-034-53-02	Ar and Pb	10				10
ARR01-038-53-01	Ar and Pb	10				10
MES01-002-53-01	Ar and Pb	10				10
MES01-006-53-02	Ar and Pb	10				10
MES02-010-53-02	Ar and Pb	10				10
VIL05-005-53-01	Ar and Pb	10				10

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

12. Laboratory Contact

The laboratory was contacted on 24 September 2001 regarding the chain of custody for analytical package 213173. A copy of the chain of custody was not provided with the original data package deliverable. XENCO provided a copy of the chain of custody via email on 24 September 2001.

13. Overall Assessment:

Two matrix spikes contained lead that recovered below control limits. This analyte was qualified as estimated, biased low in the affected samples.
All of the samples were dry weight corrected and required dilutions. Calcuations and quantitation limits were adjusted accordingly.

The analytical data is acceptable for use with the qualifications listed above.

Analytical Report 213173

for

Roy F. Weston

Project Manager: Chad Conway

Project Name : El Paso County Metals Survey
6-524401132-080401

August 8, 2001

XENCO Laboratories

11381 Meadowglen, Suite L Houston, TX 77082 Ph:(281) 589-0692 Fax:(281) 589-0695

Houston - Dallas - San Antonio - Austin - Latin America

XENCO Laboratories

August 8, 2001

Project Manager: Chad Conway
Roy F. Weston
70 N. Loop 410, Suite 460
San Antonio , TX 78216

Reference: XENCO Report No: 213173
Project Name : El Paso County Metals Survey
Project Address:

Dear Chad Conway :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Chain of Custody Numbered 213173 . All results being reported under this Chain of Custody apply to the samples analyzed and properly identified with a Laboratory ID number.

All the results for the quality control samples were reviewed. Also, all parameters for data reduction and validation were reviewed. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. 213173 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Sincerely,

Eddie L. Clemons, II
QA/QC Manager

EPA EL Paso County Metals Survey
Generic Chain of Custody

Roy F. Weston
(210) 308-4300 PO# 0027184

Reference Case
Client No:
SDG No: 1 of 4

L

Date Shipped: 8/4/01
Carrier Name: FedEx
Airbill: 822644558799
Shipped to: Xenco Labs

() -

Chain of Custody Record

Sampler Signature: [signature]

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	8-1-01/0855		
2			
3			
4		[signature]	8/7/01 9:?0

For Lab Use Only

Lab Contract No: ______
Unit Price: ______
Transfer To: ______
Lab Contract No: ______
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
EPL01-004-53-01	Soil/Sediment	/C	Ar,Pb (1)	(Not preserved) (1)	EPL01-004-53-01	S: 8/3/01 E: 8/3/01	7:37		
SMS01-007-53-02-6F	Soil/Sediment	/G	Ar,Pb (1)	(Not preserved) (1)	SMS01-007-53-02-6F	S: 8/3/01 E: 8/3/01	9:13	213173-H	
SMS01-026-53-0'-26	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	SMS01-026-53-01-26	S: 8/3/01 E: 8/3/01	9:35		
UTP01-002-53-02	Soil/Sediment	L/G	Ar,Pb (1)	(Not preserved) (1)	UTP01-002-53-02	S: 8/3/01 E: 8/3/01	13:01		
UTP02-009-53-01	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	UTP02-009-53-01	S: 8/3/01 E: 8/3/01	14:05		
UTP05-021-53-02	Soil/Sediment	L/G	Ar,Pb (1)	(Not preserved) (1)	UTP05-021-53-02	S: 8/4/01 E: 8/4/01	9:16		
UTP05-028-53-01	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	UTP05-028-53-01	S: 8/4/01 E: 8/4/01	9:28		
UTP09-041-53-01	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	UTP09-041-53-01	S: 8/4/01 E: 8/4/01	11:05		
UTP11-048-53-01	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	UTP11-048-53-01	S: 8/4/01 E: 8/4/01	8:32		
UTP12-057-53-01	Soil/Sediment	L/C	Ar,Pb (1)	(Not preserved) (1)	UTP12-057-53-01	S: 8/4/01 E: 8/4/01	7:40		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key: Ar,Pb = Arsenic, Lead	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact?___ Shipment Iced?___

TR Number: 6-524401132-080401-0003

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

EPA

EL Paso County Metals Survey
Generic Chain of Custody

Roy F. Weston
(210) 308-4300 PO# 0027184

Reference Case
Client No:
SDG No: 2 of 4

L

Date Shipped: 8/4/01
Carrier Name: FedEx
Airbill: 822644558799
Shipped to: Xenco Labs

() -

Chain of Custody Record

Sampler Signature: [signature]

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	8/5/01 /0855		
2				
3				
4			[signature]	8/7/01 9:30

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME		SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ALA01-003-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ALA01-003-53-02	S: 8/1/01 E: 8/1/01	10:12		
ALA01-010-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ALA01-010-53-01	S: 8/1/01 E: 8/1/01	10:20		
ALA01-013-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ALA01-013-53-02	S: 8/1/01 E: 8/1/01	10:30		
ELH01-001-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ELH01-001-53-01	S: 7/31/01 E: 7/31/01	8:05		
ELH01-002-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ELH01-002-53-01	S: 7/31/01 E: 7/31/01	8:23		
ELH01-002-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ELH01-002-53-02	S: 7/31/01 E: 7/31/01	8:25		
ELH01-003-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ELH01-003-53-01	S: 7/31/01 E: 7/31/01	8:00		
ELH01-005-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ELH01-005-53-02	S: 7/31/01 E: 7/31/01	8:54		
ELH01-006-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ELH01-006-53-01	S: 7/31/01 E: 7/31/01	8:05		
ELH01-006-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ELH01-006-53-02	S: 7/31/01 E: 7/31/01	8:41		

213173-H

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact?___ Shipment Iced?___
Ar, Pb = Arsenic, Lead				

TR Number: 6-524401132-080401-0004

LABORATORY COPY

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Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

EPA

EL Paso County Metals Survey
Generic Chain of Custody

(210) 308-4300
PO# 0027184

Reference Case
Client No:
SDG No: 3 of 4

L

Date Shipped: 8/4/01
Carrier Name: FedEx
Airbill: 822644558799
Shipped to: Xenco Labs

() -

Chain of Custody Record

Sampler Signature: [signature]

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	8/05/01 / 0855		
2				
3				
4			[signature]	8/1/01 9:30

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ARR01-003-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ARR01-003-53-02	S: 8/2/01 14:45 E: 8/2/01		
ARR01-020-53-01	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ARR01-020-53-01	S: 8/2/01 16:34 E: 8/2/01		
ARR01-032-53-01	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ARR01-032-53-01	S: 8/2/01 10:15 E: 8/2/01	213173-H	
ARR01-034-53-02	Soil/Sediment	L/G	Ar, Pb (1)	(Not preserved) (1)	ARR01-034-53-02	S: 8/2/01 8:55 E: 8/2/01		
ARR01-038-53-01	Soil/Sediment	L/C	Ar, Pb (1)	(Not preserved) (1)	ARR01-038-53-01	S: 8/2/01 8:32 E: 8/2/01		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact?___ Shipment Iced?___
Ar, Pb = Arsenic, Lead				

TR Number: 6-524401132-080401-0005

LABORATORY COPY

EPA

EL Paso County Metals Survey
Generic Chain of Custody

Roy F. Weston,
(210) 308-4300 PO# 0027184

Reference Case
Client No:
SDG No: 4 of 4

L

Date Shipped:	8/4/01
Carrier Name:	FedEx
Airbill:	822644558799
Shipped to:	Xenco Labs
	() -

Chain of Custody Record

Sampler Signature: [illegible]

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[illegible]	8-1-01 / 0855		
2				
3				
4			[illegible]	8/1/01 9:30

For Lab Use Only

Lab Contract No: ______
Unit Price: ______
Transfer To: ______
Lab Contract No: ______
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
MES01-002-53-01	Soil/Sediment	L/C	Ar&Pb (1)	(Not preserved) (1)	MES01-002-53-01	S: 7/30/01 11:19 E: 7/30/01		
MES01-006-53-02	Soil/Sediment	L/G	Ar&Pb (1)	(Not preserved) (1)	MES01-006-53-02	S: 7/30/01 10:42 E: 7/30/01		
MES02-010-53-02	Soil/Sediment	L/G	Ar&Pb (1)	(Not preserved) (1)	MES02-010-53-02	S: 7/30/01 11:57 E: 7/30/01	213173-14	
VIL05-005-53-01	Soil/Sediment	L/C	Ar&Pb (1)	(Not preserved) (1)	VIL05-005-53-01	S: 7/30/01 15:30 E: 7/30/01		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key: Ar&Pb = Arsenic, Lead	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact?___ Shipment Iced?___

TR Number: 6-524401132-080401-0006

LABORATORY COPY

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Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

XENCO Laboratories

Certificate of Analysis Summary 213173

Roy F. Weston, San Antonio , TX

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401
Project Manager: Chad Conway
Site:

Date Received in Lab: Tue Aug-07-01 09:30 AM
Date Report Faxed: thu Aug-09-01
XENCO Contact: Karen Olson

Analysis Requested		213173-001		213173-002		213173-003		213173-004		213173-005		213173-006	
	Lab ID :	213173-001		213173-002		213173-003		213173-004		213173-005		213173-006	
	Field ID :	EPL01-004-53-01		SMS01-007-53-02-6F		SMS01-026-53-01-26		UTP01-002-53-02		UTP02-009-53-01		UTP05-021-53-02	
	Depth :												
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Aug-03-2001		Aug-03-2001		Aug-03-2001		Aug-03-2001		Aug-03-2001		Aug-04-2001	
Percent Moisture	*Analyzed :*	Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001	
	Units :	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L
Percent Moisture		0.600	N/A	3.80	N/A	0.800	N/A	0.400	N/A	9.00	N/A	12.8	N/A
Total RCRA by EPA 6020	*Analyzed :*	Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001	
	Units :	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L
Arsenic		13.4	5.05	17.2	5.21	21.7	5.05	32.7	5.00	2.53 J	5.49	7.01	5.75
Lead		432	1.01	142	1.04	190	1.01	161	1.00	10.8	1.10	121	1.15

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 213173

Roy F. Weston, San Antonio , TX

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401
Project Manager: Chad Conway
Site:

Date Received in Lab: Tue Aug-07-01 09:30 AM
Date Report Faxed: thu Aug-09-01
XENCO Contact: Karen Olson

Analysis Requested													
	Lab ID :	213173-007		213173-008		213173-009		213173-010		213173-011		213173-012	
	Field ID :	UTP05-028-53-01		UTP09-041-53-01		UTP11-048-53-01		UTP12-057-53-01		ALA01-003-53-02		ALA01-010-53-01	
	Depth :												
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Aug-04-2001		Aug-04-2001		Aug-04-2001		Aug-04-2001		Aug-01-2001		Aug-01-2001	
Percent Moisture	*Analyzed :*	Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001	
	Units :	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L
Percent Moisture		16.6	N/A	25.0	N/A	19.8	N/A	7.00	N/A	15.4	N/A	12.6	N/A
Total RCRA by EPA 6020	*Analyzed :*	Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001	
	Units :	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L
Arsenic		5.54 J	6.02	33.0	6.67	11.9	6.25	14.5	5.38	18.0	5.88	7.59	5.75
Lead		103	1.20	612	1.33	291	1.25	235	1.08	37.9	1.18	85.2	1.15

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 213173

Roy F. Weston, San Antonio , TX

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401
Project Manager: Chad Conway
Site:

Date Received in Lab: Tue Aug-07-01 09:30 AM
Date Report Faxed: thu Aug-09-01
XENCO Contact: Karen Olson

Analysis Requested		213173-013		213173-014		213173-015		213173-016		213173-017		213173-018	
	Lab ID :	213173-013		213173-014		213173-015		213173-016		213173-017		213173-018	
	Field ID :	ALA01-013-53-02		ELH01-001-53-01		ELH01-002-53-01		ELH01-002-53-02		ELH01-003-53-01		ELH01-005-53-02	
	Depth :												
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Aug-01-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001	
Percent Moisture	*Analyzed :*	Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001	
	Units :	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L
Percent Moisture		14.4	N/A	31.6	N/A	25.8	N/A	12.0	N/A	12.8	N/A	9.20	N/A
Total RCRA by EPA 6020	*Analyzed :*	Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001	
	Units :	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L
Arsenic		8.66	5.81	10.1	7.35	4.93 J	6.76	6.19	5.68	3.16 J	5.75	8.74	5.49
Lead		75.5	1.16	124	1.47	71.2	1.35	6.08	1.14	25.5	1.15	17.7	1.10

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 213173

Roy F. Weston, San Antonio , TX

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401
Project Manager: Chad Conway
Site:

Date Received in Lab: Tue Aug-07-01 09:30 AM
Date Report Faxed: thu Aug-09-01
XENCO Contact: Karen Olson

Analysis Requested													
	Lab ID :	213173-019		213173-020		213173-021		213173-022		213173-023		213173-024	
	Field ID :	ELH01-006-53-01		ELH01-006-53-02		ARR01-003-53-02		ARR01-020-53-01		ARR01-032-53-01		ARR01-034-53-02	
	Depth :												
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-31-2001		Jul-31-2001		Aug-02-2001		Aug-02-2001		Aug-02-2001		Aug-02-2001	
Percent Moisture	*Analyzed :*	Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001	
	Units :	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L
Percent Moisture		15.8	N/A	9.80	N/A	0.400	N/A	1.60	N/A	1.20	N/A	1.80	N/A
Total RCRA by EPA 6020	*Analyzed :*	Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001	
	Units :	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L
Arsenic		6.13	5.95	7.61	5.56	10.6	5.00	18.5	5.10	15.1	5.05	9.90	5.10
Lead		68.6	1.19	14.8	1.11	4.60	1.00	28.1	1.02	136	1.01	32.0	1.02

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 213173

Roy F. Weston, San Antonio , TX

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401
Project Manager: Chad Conway
Site:

Date Received in Lab: Tue Aug-07-01 09:30 AM
Date Report Faxed: thu Aug-09-01
XENCO Contact: Karen Olson

Analysis Requested		213173-025		213173-026		213173-027		213173-028		213173-029		
	Lab ID :	213173-025		213173-026		213173-027		213173-028		213173-029		
	Field ID :	ARR01-038-53-01		MES01-002-53-01		MES01-006-53-02		MES02-010-53-02		VIL05-005-53-01		
	Depth :											
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		
	Sampled :	Aug-02-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		
Percent Moisture	*Analyzed :*	Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		Aug-08-2001		
	Units :	% D	R L	% D	R L	% D	R L	% D	R L	% D	R L	
Percent Moisture		2.00	N/A	1.20	N/A	2.20	N/A	1.40	N/A	0.400	N/A	
Total RCRA by EPA 6020	*Analyzed :*	Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		Aug-07-2001		
	Units :	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	mg/kg	R L	
Arsenic		14.3	5.10	6.06	5.05	10.6	5.10	8.59	5.05	1.16 J	5.05	
Lead		34.9	1.02	22.2	1.01	19.4	1.02	15.1	1.01	6.57	1.01	

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Form 3 - MS Recoveries

Analytical Report 213173

Lab Batch #: 604925

QC- Sample ID: 213173-001

Reporting Units: mg/kg **Matrix:** Solid

Project Name: El Paso County Metals Survey

Project ID: 6-524401132-080401

Total RCRA by EPA 6020 — Analyte	MATRIX / MATRIX SPIKE RECOVERY STUDY — Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Arsenic	13.4	50.5051	53.68687	80	70-125	
Lead	432	101.0101	444.84848	12	70-125	X

Lab Batch #: 604927

QC- Sample ID: 213173-019

Reporting Units: mg/kg **Matrix:** Solid

Total RCRA by EPA 6020 — Analyte	MATRIX / MATRIX SPIKE RECOVERY STUDY — Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Arsenic	6.13	59.5238	49.10714	72	70-125	
Lead	68.6	119.0476	128.57143	50	70-125	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

Sample Duplicate Recovery

Analytical Report : 213173
Lab Batch #: 604925
QC- Sample ID: 213173-001
Reporting Units: mg/kg **Matrix:** Solid

Project Name: El Paso County Metals Survey
Project ID: 6-524401132-080401

Total RCRA by EPA 6020	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Arsenic	13.4	11.4	16.7	30	
Lead	432	361	18.0	30	

Lab Batch #: 604927
QC- Sample ID: 213173-019
Reporting Units: mg/kg **Matrix:** Solid

Total RCRA by EPA 6020	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Arsenic	6.13	5.77	6.0	30	
Lead	68.6	66.6	2.9	30	

Spike Relative Difference RPD 200*|(B-A)/(B+A)
All Results are based on MDL and validated for QC purposes.

Blank Spike Recovery

XENCO Laboratories

Analytical Report: 213173

Project Name: El Paso County Metals Survey
Project ID: 6-524401132-080401

Lab Batch #: 604925
Reporting Units: mg/kg **Matrix:** Solid

BLANK /BLANK SPIKE RECOVERY STUDY

Total RCRA by EPA 6020 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Arsenic	<5.00	100.0	93.7	94	70-125	
Lead	<1.00	200.0	179	90	70-125	

Lab Batch #: 604927
Reporting Units: mg/kg **Matrix:** Solid

BLANK /BLANK SPIKE RECOVERY STUDY

Total RCRA by EPA 6020 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Arsenic	<5.00	100.0	97.0	97	70-125	
Lead	<1.00	200.0	185	93	70-125	

Blank Spike Recovery [D] = 100*(C-A)/[B]
All results are based on MDL and validated for QC purposes.

DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 071101008

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 071101008, El Paso County Metal Survey. Seventeen soil samples were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

0030	2032	
0031	0035	
0032	1036	
0106	1040	
0107	0039	
1030		
1031		
1032		
1106		
1107		
2030		
2031		

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-07-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

Roy F. Weston, Inc
El Paso County Metal Survey

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration and preparation blanks associated with this case.

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7. Laboratory Control Sample (LCS):

The recoveries for the aqueous LCS were within the 80-120% control limits. The recoveries for the solid LCS were within the established control limits.

8. Duplicate Sample Analysis:

Sample 0300 underwent duplicate analysis for the soil matrix. The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± two times the CRDL.

9. Spiked Sample Analysis:

Sample 0030 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

METALS DATA EVALUATION (continued)

ANALYTE	MATRIX	RECOVERY %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Arsenic	soil	69.2	0030,0031,0032,0105,0106,1030,1-031,1032,1105,1106,2030,2031,20-32,0035,1036,1040,0039	JL or UJL

10. ICP Serial Dilution:

No serial dilutions were performed with this batch of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
1036	lead	5	2		0.05	0.125

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

The matrix spike contained arsenic that recovered below control limits. This analyte was qualified as estimated, biased low in the affected samples.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.

The analytical data is acceptable for use with the qualifications listed above.

July 11, 2001 Results

Sample Number	Lab ID Number	Lead Result	Reporting Limit	Arsenic Result	Reporting Limit	Units	Sampled by	Method
0030	071101008-1	19	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
0031	071101008-2	12	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
0032	071101008-3	46	3.0	9.8 JL	3.0	mg/kg	K. Jaynes	6010B
0106	071101008-4	23	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
0107	071101008-5	14	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
1030	071101008-6	10	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
1031	071101008-7	10	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
1032	071101008-8	70	3.0	11 JL	3.0	mg/kg	K. Jaynes	6010B
1106	071101008-9	58	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
1107	071101008-10	14	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
2030	071101008-11	<3.0	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
2031	071101008-12	<3.0	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
2032	071101008-13	3.3	3.0	<3.0 UJL	3.0	mg/kg	K. Jaynes	6010B
0035	071101008-14	11	3.0	<3.0 UJL	3.0	mg/kg	P. James	6010B
1036	071101008-15	350	15.0	<3.0 UJL	3.0	mg/kg	P. Johnson	6010B
1040	071101008-16	12	3.0	<3.0 UJL	3.0	mg/kg	P. James	6010B
0039	071101008-17	3.8	3.0	<3.0 UJL	3.0	mg/kg	P. James	6010B

mb

ANALYTICAL RESULTS
07/11/01

Sampling Date……….: 07-11-01
Matrix……………….: Soil
Method……………..: 6010B

Submittal Date…: 07-11-01
Analyst………..: Javier Mendoza

Sample Number	Lab ID Number	Lead Result	Reporting Limit	Arsenic Result	Reporting Limit	Units	Sampled by
0030	071101008-1	19.	3.0	<3.0	3.0	mg/kg	K. Jaynes
0031	071101008-2	12.	3.0	<3.0	3.0	mg/kg	K. Jaynes
0032	071101008-3	46.	3.0	9.8	3.0	mg/kg	K. Jaynes
0106	071101008-4	23.	3.0	<3.0	3.0	mg/kg	K. Jaynes
0107	071101008-5	14.	3.0	<3.0	3.0	mg/kg	K. Jaynes
1030	071101008-6	10.	3.0	<3.0	3.0	mg/kg	K. Jaynes
1031	071101008-7	10.	3.0	<3.0	3.0	mg/kg	K. Jaynes
1032	071101008-8	70.	3.0	11	3.0	mg/kg	K. Jaynes
1106	071101008-9	58.	3.0	<3.0	3.0	mg/kg	K. Jaynes
1107	071101008-10	14.	3.0	<3.0	3.0	mg/kg	K. Jaynes
2030	071101008-11	<3.0	3.0	<3.0	3.0	mg/kg	K. Jaynes
2031	071101008-12	<3.0	3.0	<3.0	3.0	mg/kg	K. Jaynes
2032	071101008-13	3.3	3.0	<3.0	3.0	mg/kg	K. Jaynes
0035	071101008-14	11.	3.0	<3.0	3.0	mg/kg	P. James
1036	071101008-15	350	15.	<3.0	3.0	mg/kg	P. Johnson
1040	071101008-16	12.	3.0	<3.0	3.0	mg/kg	P. James
0039	071101008-17	3.8	3.0	<3.0	3.0	mg/kg	P. James

QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	*17.3	19.6	69.2 78.4	22.6	23.7	90.4 94.8	2.48	2.62	2.50
Lead	<3.00	40.7	39.4	81.4 78.8	23.4	23.6	93.6 94.4	2.48	2.38	2.50

*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm.

Ruben Parra
Technical Director

July 11, 2001 Results

Sample Number	Lab ID Number	Lead Result	Reporting Limit	Arsenic Result	Reporting Limit	Units	Sampled by	Method
0030	071101008-1	19	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
0031	071101008-2	12	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
0032	071101008-3	46	3.0	9.8	3.0	mg/kg	K. Jaynes	6010B
0106	071101008-4	23	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
0107	071101008-5	14	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
1030	071101008-6	10	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
1031	071101008-7	10	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
1032	071101008-8	70	3.0	11	3.0	mg/kg	K. Jaynes	6010B
1106	071101008-9	58	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
1107	071101008-10	14	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
2030	071101008-11	<3.0	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
2031	071101008-12	<3.0	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
2032	071101008-13	3.3	3.0	<3.0	3.0	mg/kg	K. Jaynes	6010B
0035	071101008-14	11	3.0	<3.0	3.0	mg/kg	P. James	6010B
1036	071101008-15	350	15.0	<3.0	3.0	mg/kg	P. Johnson	6010B
1040	071101008-16	12	3.0	<3.0	3.0	mg/kg	P. James	6010B
0039	071101008-17	3.8	3.0	<3.0	3.0	mg/kg	P. James	6010B

Excel Format

DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 080201004

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 0802010004, El Paso County Metal Survey. Ninety-five soil samples were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

ARR01-051-51-01	ARR01-008-51-01	ARR01-015-51-01	ARR01-022-51-01	ARR01-031-51-01	ARR01-039-51-01	ARR01-046-51-01
ARR01-051-51-02	ARR01-008-51-02	ARR01-015-51-02	ARR01-022-51-02	ARR01-031-51-02	ARR01-039-51-02	ARR01-046-51-02
ARR01-002-51-01	ARR01-009-51-01	ARR01-016-51-01	ARR01-023-51-02	ARR01-032-51-01	ARR01-040-51-01	ARR01-047-51-01
ARR01-002-51-02	ARR01-009-51-02	ARR01-016-51-02	ARR01-023-51-02	ARR01-032-51-02	ARR01-040-51-02	ARR01-047-51-02
ARR01-003-51-10	ARR01-010-51-01	ARR01-017-51-01	ARR01-024-51-01	ARR01-033-51-01	ARR01-041-51-01	ARR01-048-51-01
ARR01-003-51-02	ARR01-010-51-02	ARR01-017-51-02	ARR01-024-51-02	ARR01-033-51-02	ARR01-041-51-02	ARR01-048-51-02
ARR01-004-51-01	ARR01-011-51-01	ARR01-018-51-01	ARR01-025-51-01	ARR01-034-51-01	ARR01-042-51-01	ARR01-033-52-02
ARR01-004-51-02	ARR01-011-51-02	ARR01-018-51-02	ARR01-025-51-02	ARR01-034-51-02	ARR01-042-51-02	ARR01-004-52-01
ARR01-005-51-01	ARR01-012-51-01	ARR01-019-51-01	ARR01-026-51-01	ARR01-035-51-01	ARR01-043-51-01	ARR01-005-52-01
ARR01-005-51-02	ARR01-012-51-02	ARR01-019-51-02	ARR01-026-51-02	ARR01-036-51-01	ARR01-043-51-02	ARR01-002-52-02
ARR01-006-51-01	ARR01-013-51-01	ARR01-020-51-01	ARR01-027-51-01	ARR01-036-51-02	ARR01-044-51-02	ARR01-015-52-01
ARR01-006-51-02	ARR01-013-51-02	ARR01-020-51-02	ARR01-028-51-01	ARR01-037-51-01	ARR01-044-51-02	
ARR01-007-51-01	ARR01-014-51-01	ARR01-021-51-01	ARR01-028-51-02	ARR01-038-51-01	ARR01-045-51-01	
ARR01-007-51-02	ARR01-014-51-02	ARR01-021-51-02	ARR01-029-51-01	ARR01-038-51-02	ARR01-045-51-02	

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-10-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

Roy F. Weston, Inc.
El Paso County Metal Survey

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration blanks associated with this case.

AND

Target analytes were detected in the following preparation blanks. Sample concentrations less than five times the highest analyte concentration reported in associated blanks are flagged UB (not detected, detection limit raised due to possible blank contamination).

PREPARATION BLANK/MATRIX	ANALYTE	CONC. ppm	QUALIFIED SAMPLES
RB3 8/2 / soil	Pb	0.286	None
RB4 8/2 / soil	Pb	0.285	None
RB3 8/2 / soil	As	0.119	None

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

METALS DATA EVALUATION (continued)

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCSs were within the established control limits.

8. Duplicate Sample Analysis:

Samples ARR01-001-51-01, ARR01-011-51-01, ARR01-021-51-01, ARR01-033-41-01, ARR01-044-51-01 and five laboratory control samples underwent duplicate analysis for the soil matrix. The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± two times the CRDL for the soil matrix.

9. Spiked Sample Analysis:

Samples ARR01-001-51-01, ARR01-011-51-01, ARR01-021-51-01, ARR01-033-41-01, and ARR01-044-51-01 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
Pb (MS)	soil	66.0	ARR01-031-51-01, ARR01-031-51-02, ARR01-032-51-01, ARR01-003-51-02, ARR01-033-51-01, ARR01-031-51-02, ARR01-034-51-01, ARR01-034-51-02, ARR01-035-51-01, ARR01-036-51-02, ARR01-036-51-02, ARR01-037-51-01, ARR01-038-5-01, ARR01-038-51-02, ARR01-039-51-01, ARR01-039-51-02, ARR01-040-51-01, ARR01-040-51-02, ARR01-041-51-01	JL or UJL
Pb (MS)	soil	67.2	ARR01-041-51-02, ARR01-042-51-01, ARR01-042-51-02, ARR043-51-01, ARR01-043-51-02, ARR01-044-51-01, ARR01-044-51-02, ARR01-045-51-01, ARR01-045-51-02, ARR01-046-51-01, ARR01-046-51-02, ARR01-047-51-01, ARR01-047-51-02, ARR01-048-51-01, ARR01-048-51-02, ARR01-033-52-02, ARR01-005-52-01, ARR01-002-52-02, ARR01-015-52-01	JL or UJL

METALS DATA EVALUATION (continued)

10. ICP Serial Dilution:

No serial dilutions were performed with this group of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
ARR01-002-51-01	Lead	2				2
ARR01-002-51-02	Lead	2				2
ARR01-012-51-02	Lead	4				4
ARR01-022-51-01	Lead	4				4
ARR01-023-51-01	Lead	2				2
ARR01-024-51-02	Lead	2				2
ARR01-025-51-01	Lead	4				4
ARR01-029-51-01	Lead	4				4
ARR01-042-51-01	Lead	5				5
ARR01-043-51-01	Lead	5				5

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

13. Laboratory Contact

No laboratory contact was required.

METALS DATA EVALUATION (continued)

14. Overall Assessment:

Two preparation blanks contained some low level contamination. None of the samples were affected and no qualifications were necessary.
Two matrix spikes contained lead that recovered below required control limits. This analyte was qualified as estimated, biased low in the affected samples.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.
Due to salt problems, clogging of the instruments, and the RPD values of the duplicate samples being high, the reporting limits for these samples was raised from 3 mg/kg to 5 mg/kg.

The analytical data is acceptable for use with the qualifications listed above.

Sampling Date - August 2, 2001
Method of Analysis - 6010B

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
ARR01-001-51-01	080201004-1	21		5.0	11		5.0
ARR01-001-51-02	080201004-2	6.5		5.0	<5.0	U	5.0
ARR01-002-51-01	080201004-3	200	D	10	28		5.0
ARR01-002-51-02	080201004-4	220	D	10	29		5.0
ARR01-003-51-01	080201004-5	27		5.0	12		5.0
ARR01-003-51-02	080201004-6	<5.0	U	5.0	7.1		5.0
ARR01-004-51-01	080201004-7	33		5.0	8.7		5.0
ARR01-004-51-02	080201004-8	<5.0	U	5.0	<5.0	U	5.0
ARR01-005-51-01	080201004-9	110		5.0	8.3		5.0
ARR01-005-51-02	080201004-10	13		5.0	<5.0	U	5.0
ARR01-006-51-01	080201004-11	54		5.0	6.2		5.0
ARR01-006-51-02	080201004-12	15		5.0	<5.0	U	5.0
ARR01-007-51-01	080201004-13	45		5.0	<5.0	U	5.0
ARR01-007-51-02	080201004-14	<5.0	U	5.0	<5.0	U	5.0
ARR01-008-51-01	080201004-15	48		5.0	9.4		5.0
ARR01-008-51-02	080201004-16	27		5.0	9.0		5.0
ARR01-009-51-01	080201004-17	<5.0	U	5.0	5.4		5.0
ARR01-009-51-02	080201004-18	<5.0	U	5.0	<5.0	U	5.0
ARR01-010-51-01	080201004-19	100		5.0	7.8		5.0
ARR01-010-51-02	080201004-20	6.1		5.0	8.6		5.0
ARR01-011-51-01	080201004-21	10		5.0	<5.0	U	5.0
ARR01-011-51-02	080201004-22	40		5.0	<5.0	U	5.0
ARR01-012-51-01	080201004-23	66		5.0	<5.0	U	5.0
ARR01-012-51-02	080201004-24	280	D	20	7.1		5.0
ARR01-013-51-01	080201004-25	110		5.0	8.3		5.0
ARR01-013-51-02	080201004-26	8.8		5.0	<5.0	U	5.0
ARR01-014-51-01	080201004-27	<5.0	U	5.0	18		5.0
ARR01-014-51-02	080201004-28	<5.0		5.0	<5.0	U	5.0
ARR01-015-51-01	080201004-29	28		5.0	9.8		5.0
ARR01-015-51-02	080201004-30	5.7		5.0	<5.0	U	5.0

ARR01-016-51-01	080201004-31	53		5.0	13		5.0
ARR01-016-51-02	080201004-32	13		5.0	5.0		5.0
ARR01-017-51-01	080201004-33	24		5.0	9.3		5.0
ARR01-017-51-02	080201004-34	27		5.0	6.9		5.0
ARR01-018-51-01	080201004-35	<5.0	U	5.0	21		5.0
ARR01-018-51-02	080201004-36	<5.0	U	5.0	<5.0	U	5.0
ARR01-019-51-01	080201004-37	56		5.0	5.0		5.0
ARR01-019-51-02	080201004-38	<5.0	U	5.0	<5.0	U	5.0
ARR01-020-51-01	080201004-39	28		5.0	12		5.0
ARR01-020-51-02	080201004-40	<5.0	U	5.0	<5.0	U	5.0

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
ARR01-021-51-01	080201004-41	25		5.0	<5.0	U	5.0
ARR01-021-51-02	080201004-42	<5.0	U	5.0	<5.0	U	5.0
ARR01-022-51-01	080201004-43	360	D	20	20		5.0
ARR01-022-51-02	080201004-44	82		5.0	6.2		5.0
ARR01-023-51-01	080201004-45	170	D	10	<5.0	U	5.0
ARR01-023-51-02	080201004-46	68		5.0	5.7		5.0
ARR01-024-51-01	080201004-47	130	D	10	13		5.0
ARR01-024-51-02	080201004-48	13		5.0	5.5		5.0
ARR01-025-51-01	080201004-49	420	D	20	15		5.0
ARR01-025-51-02	080201004-50	42		5.0	<5.0	U	5.0
ARR01-026-51-01	080201004-51	<5.0	U	5.0	10		5.0
ARR01-026-51-02	080201004-52	<5.0	U	5.0	8.1		5.0
ARR01-027-51-01	080201004-53	5.7		5.0	15		5.0
ARR01-028-51-01	080201004-54	64		5.0	6.8		5.0
ARR01-028-51-02	080201004-55	<5.0	U	5.0	<5.0	U	5.0
ARR01-029-51-01	080201004-56	250	D	20	14		5.0
ARR01-031-51-01	080201004-57	36	JL	5.0	7.8		5.0
ARR01-031-51-02	080201004-58	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-032-51-01	080201004-59	100	JL	5.0	12		5.0
ARR01-032-51-02	080201004-60	7.1	JL	5.0	17		5.0
ARR01-033-51-01	080201004-61	16	JL	5.0	8.6		5.0
ARR01-033-51-02	080201004-62	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-034-51-01	080201004-63	20	JL	5.0	<5.0	U	5.0

ARR01-034-51-02	080201004-64	29	JL	5.0	<5.0	U	5.0
ARR01-035-51-01	080201004-65	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-036-51-01	080201004-66	16	JL	5.0	<5.0	U	5.0
ARR01-036-51-02	080201004-67	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-037-51-01	080201004-68	18	JL	5.0	<5.0	U	5.0
ARR01-038-51-01	080201004-69	23	JL	5.0	6.3		5.0
ARR01-038-51-02	080201004-70	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-039-51-01	080201004-71	6.5	JL	5.0	9.8		5.0
ARR01-039-51-02	080201004-72	9.5	JL	5.0	<5.0	U	5.0
ARR01-040-51-01	080201004-73	40	JL	5.0	<5.0	U	5.0
ARR01-040-51-02	080201004-74	58	JL	5.0	<5.0	U	5.0
ARR01-041-51-01	080201004-75	8	JL	5.0	<5.0	U	5.0
ARR01-041-51-02	080201004-76	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-042-51-01	080201004-77	410	DJL	25	14		5.0
ARR01-042-51-02	080201004-78	9	JL	5.0	5.2		5.0
ARR01-043-51-01	080201004-79	310	DJL	25	13		5.0
ARR01-043-51-02	080201004-80	14	JL	5.0	<5.0	U	5.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
ARR01-044-51-01	080201004-81	33	JL	5.0	<5.0	U	5.0
ARR01-044-51-02	080201004-82	24	JL	5.0	<5.0	U	5.0
ARR01-045-51-01	080201004-83	18	JL	5.0	14		5.0
ARR01-045-51-02	080201004-84	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-046-51-01	080201004-85	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-046-51-02	080201004-86	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-047-51-01	080201004-87	92	JL	5.0	8.6		5.0
ARR01-047-51-02	080201004-88	6.4	JL	5.0	<5.0	U	5.0
ARR01-048-51-01	080201004-89	77	JL	5.0	<5.0	U	5.0
ARR01-048-51-01	080201004-90	27	JL	5.0	6.1		5.0
ARR01-033-52-02	080201004-91	<5.0	UJL	5.0	<5.0	U	5.0
ARR01-004-52-01	080201004-92	31	JL	5.0	<5.0	U	5.0
ARR01-005-52-01	080201004-93	96	JL	5.0	8.9		5.0
ARR01-002-52-02	080201004-94	120	JL	5.0	18		5.0
ARR01-015-52-01	080201004-95	28	JL	5.0	9.4		5.0

ANALYTICAL RESULTS
08/02/01

Sampling Date..........: 08-02-01 Submittal Date.........: 08-02-01
Matrix...................: Soil Method.................: 6010B
Date Analyzed.........: 8/2/01-8/3/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ARR01-001-51-01	080201004-1	21	5.0	11	5.0	WW/NM
ARR01-001-51-02	080201004-2	6.5	5.0	<5.0	5.0	WW/NM
ARR01-002-51-01	080201004-3	200	10	28	5.0	WW/NM
ARR01-002-51-02	080201004-4	220	10	29	5.0	WW/NM
ARR01-003-51-01	080201004-5	27	5.0	12	5.0	WW/NM
ARR01-003-51-02	080201004-6	<5.0	5.0	7.1	5.0	WW/NM
ARR01-004-51-01	080201004-7	33	5.0	8.7	5.0	WW/NM
ARR01-004-51-02	080201004-8	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-005-51-01	080201004-9	110	5.0	8.3	5.0	WW/NM
ARR01-005-51-02	080201004-10	13	5.0	<5.0	5.0	WW/NM
ARR01-006-51-01	080201004-11	54	5.0	6.2	5.0	WW/NM
ARR01-006-51-02	080201004-12	15	5.0	<5.0	5.0	WW/NM
ARR01-007-51-01	080201004-13	45	5.0	<5.0	5.0	WW/NM
ARR01-007-51-02	080201004-14	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-008-51-01	080201004-15	48	5.0	9.4	5.0	WW/NM
ARR01-008-51-02	080201004-16	27	5.0	9.0	5.0	WW/NM
ARR01-009-51-01	080201004-17	<5.0	5.0	5.4	5.0	WW/NM
ARR01-009-51-02	080201004-18	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-010-51-01	080201004-19	100	5.0	7.8	5.0	WW/NM
ARR01-010-51-02	080201004-20	6.1	5.0	8.6	5.0	WW/NM
ARR01-011-51-01	080201004-21	10	5.0	<5.0	5.0	WW/NM
ARR01-011-51-02	080201004-22	40	5.0	<5.0	5.0	WW/NM
ARR01-012-51-01	080201004-23	66	5.0	<5.0	5.0	WW/NM
ARR01-012-51-02	080201004-24	280	20	7.1	5.0	WW/NM
ARR01-013-51-01	080201004-25	110	5.0	8.3	5.0	WW/NM
ARR01-013-51-02	080201004-26	8.8	5.0	<5.0	5.0	WW/NM
ARR01-014-51-01	080201004-27	<5.0	5.0	18	5.0	WW/NM
ARR01-014-51-02	080201004-28	~~2~~ <5.0	5.0	<5.0	5.0	WW/NM
ARR01-015-51-01	080201004-29	28	5.0	9.8	5.0	WW/NM

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ANALYTICAL RESULTS
08/02/01

Sampling Date……….: 08-02-01
Matrix……………….: Soil
Date Analyzed……….: 8/2/01-8/3/01

Submittal Date……….: 08-01-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ARR01-015-51-02	080201004-30	5.7	5.0	<5.0	5.0	WW/NM
ARR01-016-51-01	080201004-31	53	5.0	13	5.0	WW/NM
ARR01-016-51-02	080201004-32	13	5.0	5.0	5.0	WW/NM
ARR01-017-51-01	080201004-33	24	5.0	9.3	5.0	WW/NM
ARR01-017-51-02	080201004-34	27	5.0	6.9	5.0	WW/NM
ARR01-018-51-01	080201004-35	<5.0	5.0	21	5.0	WW/NM
ARR01-018-51-02	080201004-36	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-019-51-01	080201004-37	56	5.0	5.0	5.0	WW/NM
ARR01-019-51-02	080201004-38	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-020-51-01	080201004-39	28	5.0	12	5.0	WW/NM
ARR01-020-51-02	080201004-40	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-021-51-01	080201004-41	25	5.0	<5.0	5.0	WW/NM
ARR01-021-51-02	080201004-42	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-022-51-01	080201004-43	360	20	20	5.0	WW/NM
ARR01-022-51-02	080201004-44	82	5.0	6.2	5.0	WW/NM
ARR01-023-51-01	080201004-45	170	10	<5.0	5.0	WW/NM
ARR01-023-51-02	080201004-46	68	5.0	5.7	5.0	WW/NM
ARR01-024-51-01	080201004-47	130	10	13	5.0	WW/NM
ARR01-024-51-02	080201004-48	13	5.0	5.5	5.0	WW/NM
ARR01-025-51-01	080201004-49	420	20	15	5.0	WW/NM
ARR01-025-51-02	080201004-50	42	5.0	<5.0	5.0	WW/NM
ARR01-026-51-01	080201004-51	<5.0	5.0	10	5.0	WW/NM
ARR01-026-51-02	080201004-52	<5.0	5.0	8.1	5.0	WW/NM
ARR01-027-51-01	080201004-53	5.7	5.0	15	5.0	WW/NM
ARR01-028-51-01	080201004-54	64	5.0	6.8	5.0	WW/NM
ARR01-028-51-02	080201004-55	<5.0	5.0	<5.0	5.0	WW/NM
ARR01-029-51-01	080201004-56	250	20	14	5.0	WW/NM
ARR01-031-51-01	080201004-57	36	5.0	7.8	5.0	NM
ARR01-031-51-02	080201004-58	<5.0	5.0	<5.0	5.0	NM

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ANALYTICAL RESULTS
08/02/01

Sampling Date.........: 08-02-01
Matrix..................: Soil
Date Analyzed.........: 8/2/01-8/3/01

Submittal Date........: 08-02-01
Method.................: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ARR01-032-51-01	080201004-59	100	5.0	12	5.0	NM
ARR01-032-51-02	080201004-60	7.1	5.0	17	5.0	NM
ARR01-033-51-01	080201004-61	16	5.0	8.6	5.0	NM
ARR01-033-51-02	080201004-62	<5.0	5.0	<5.0	5.0	NM
ARR01-034-51-01	080201004-63	20	5.0	<5.0	5.0	NM
ARR01-034-51-02	080201004-64	29	5.0	<5.0	5.0	NM
ARR01-035-51-01	080201004-65	<5.0	5.0	<5.0	5.0	NM
ARR01-036-51-01	080201004-66	16	5.0	<5.0	5.0	NM
ARR01-036-51-02	080201004-67	<5.0	5.0	<5.0	5.0	NM
ARR01-037-51-01	080201004-68	18	5.0	<5.0	5.0	NM
ARR01-038-51-01	080201004-69	23	5.0	6.3	5.0	NM
ARR01-038-51-02	080201004-70	<5.0	5.0	<5.0	5.0	NM
ARR01-039-51-01	080201004-71	6.5	5.0	9.8	5.0	NM
ARR01-039-51-02	080201004-72	9.5	5.0	<5.0	5.0	NM
ARR01-040-51-01	080201004-73	40	5.0	<5.0	5.0	NM
ARR01-040-51-02	080201004-74	58	5.0	<5.0	5.0	NM
ARR01-041-51-01	080201004-75	8	5.0	<5.0	5.0	NM
ARR01-041-51-02	080201004-76	<5.0	5.0	<5.0	5.0	NM
ARR01-042-51-01	080201004-77	410	25	14	5.0	NM
ARR01-042-51-02	080201004-78	9	5.0	5.2	5.0	NM
ARR01-043-51-01	080201004-79	310	25	13	5.0	NM
ARR01-043-51-02	080201004-80	14	5.0	<5.0	5.0	NM
ARR01-044-51-01	080201004-81	33	5.0	<5.0	5.0	NM
ARR01-044-51-02	080201004-82	24	5.0	<5.0	5.0	NM
ARR01-045-51-01	080201004-83	18	5.0	14	5.0	NM
ARR01-045-51-02	080201004-84	<5.0	5.0	<5.0	5.0	NM
ARR01-046-51-01	080201004-85	<5.0	5.0	<5.0	5.0	NM
ARR01-046-51-02	080201004-86	<5.0	5.0	<5.0	5.0	NM
ARR01-047-51-01	080201004-87	92	5.0	8.6	5.0	NM
ARR01-047-51-02	080201004-88	6.4	5.0	<5.0	5.0	NM
ARR01-048-51-01	080201004-89	77	5.0	<5.0	5.0	NM

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ANALYTICAL RESULTS
08/02/01

Sampling Date……….: 08-02-01
Matrix……………….: Soil
Date Analyzed……….: 8/2/01-8/3/01

Submittal Date………: 08-02-01
Method………………: 6010B

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyst
ARR01-048-51-0~~1~~2	080201004-90	27	5.0	6.1	5.0	NM
ARR01-033-52-02	080201004-91	<5.0	5.0	<5.0	5.0	NM
ARR01-004-52-01	080201004-92	31	5.0	<5.0	5.0	NM
ARR01-005-52-01	080201004-93	96	5.0	8.9	5.0	NM
ARR01-002-52-02	080201004-94	120	5.0	18	5.0	NM
ARR01-015-52-01	080201004-95	28	5.0	9.4	5.0	NM

QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	24.9	26.4	99.6 106	22.7	23.7	90.8 94.8	2.39	2.69	2.50
Lead	<3.00	23.6	20.4	94.4 81.6	23.5	24.1	94.0 96.4	2.58	2.68	2.50
Arsenic	<3.00	20.7	19.2	82.8 76.8	21.4	22.7	85.6 90.8	2.66	2.64	2.50
Lead	<3.00	24.7	24.1	98.8 96.4	23.6	22.9	94.4 91.6	2.71	2.38	2.50
Arsenic	<3.00	25.4	23.2	102 92.8	22.4	21.1	89.6 84.4	2.64	2.32	2.50
Lead	<3.00	30.3	23.6	121 94.4	22.6	23.8	90.4 95.2	2.38	2.55	2.50
Arsenic	<3.00	23.1	20.8	92.4 83.2	24.3	24.0	97.2 96.0	2.60	2.66	2.50
Lead	<3.00	19.7	16.5*	78.8 66.0	22.7	23.7	90.8 94.8	2.62	2.35	2.50
Arsenic	<3.00	20.9	24.2	83.6 96.8	21.6	22.7	86.4 90.8	2.34	2.54	2.50
Lead	<3.00	16.8*	21	67.2 84.0	20.5	20.0	82.0 80.0	2.36	2.32	2.50

*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm.

Ruben Parra
Technical Director

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DATA QUALITY ASSURANCE REVIEW

SITE NAME El Paso County Metal Survey

CERCLIS TXD990757668

CASE NUMBER/WORK ORDER 6S2021 SDG/PROJ. NUMBER 080301007

Roy F. Weston, Inc. (WESTON) has completed a QA review for Case No. 6S2021, SDG No. 0803010007, El Paso County Metal Survey. Eighty-six soil samples were analyzed for arsenic and lead by Applied Environmental Services. Sample numbers are listed below.

SAMPLE NUMBERS

UTP03-014-51-01	UTP01-004-51-01	SMS01-027-51-02-17B	SMS01-015-51-01	SMS01-009-51-02-7F	EPL01-010-51-01	EPL01-003-51-01
UTP03-013-51-01	UTP-01-004-51-02	SMS01-026-51-01-26	SMS01-014-51-01-11F	SMS01-008-51-01-6B	EPL01-010-51-02	EPL01-003-51-02
UTP04-012-51-01	UTP01-003-51-01	SMS01-026-51-02-26	SMS01-014-51-02-11F	AMA01-007-51-01-6F	EPL01-009-51-01	EPL01-001-51-01
UTP03-011-51-01	UTP01-002-51-01	SMS01-025-51-01-17F	SMS01-013-51-01-11F	SMS01-007-51-02-6F	EPL01-009-51-02	EPL01-001-51-02
UTP03-010-51-01	UTP01-002-51-02	SMS01-025-51-02-17F	SMS01-013-51-02-11F	AMA01-006-51-01-4F	PLE01-008-51-01	UTP04-019-51-01
UTP02-009-515-01	UTP01-001-51-01	SMS01-019-51-01-13&14	SMS01-012-51-01-9F	SMS01-006-51-02-4F	EPL01-008-51-02	UTP-04-018-51-01
UTP02-008-51-01	UTP01-001-51-02	SMS01-019-51-02-13&14	SMS01-012-51-02-9F	SMS01-005-51-01-3B	EPL01-006-51-02	UTP04-015-51-01
UTP02-007-51-01	AMA01-029-51-01-22	SMS01-018-51-01	SMS01-011-51-01-Purp	SMS01-005-51-02-3B	EPL01-006-51-02	UTP04-016-51-01
UTP01-006-51-01	SMS01-029-51-02-22	SMS01-018-51-02	SMS01-011-51-02-Purp	SMS01-004-51-01-3F	EPL01-005-51-01	UTP01-017-51-01
UTP01-006-51-02	SMS01-028-51-01-18	SMS01-017-51-01	SMS01-010-51-01-7B	SMS01-004-51-02-3F	EPL01-005-51-02	UTP01-002-52-02
UTP01-005-51-01	SMS01-028-51-02-18	SMS01-017-51-02	SMS01-010-51-02-7B	EPL01-011-51-02	EPL01-004-51-01	UTP02-010-52-01
UPT01-005-51-02	SMS01-027-51-01-17B	SMS01-016-51-01	SMS01-009-51-01-7F	EPL01-011-51-02	EPL01-004-51-02	SMS01-009-52-02-7F
SMS01-009-52-01-7F	EPL01-008-52-01					

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February, 1994), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February, 1994), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Michelle Brown DATE 08-13-01

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicated that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."

D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

Roy F. Weston, Inc.
El Paso County Metal Survey

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in SW846 method 6010B.

2. Holding Times:

All samples met established holding time criteria of 180 days for metals.

3. Initial Calibration:

ICP initial calibration included a blank and one standard and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values.

4. Continuing Calibration:

All ICP results fell within the control limits of 90 to 110 percent of the true values.

5. Blanks:

No target analytes were detected in the calibration blanks associated with this case.

AND

Target analytes were detected in the following preparation blanks. Sample concentrations less than five times the highest analyte concentration reported in associated blanks are flagged UB (not detected, detection limit raised due to possible blank contamination).

PREPARATION BLANK/MATRIX	ANALYTE	CONC. ppm	QUALIFIED SAMPLES
RB2 8/3 / soil	As	0.823	None
RB4 8/3 / soil	As	0.167	None
RB1 8/3 / soil	Pb	0.805	None
RB2 8/3 / soil	Pb	1.57	None

6. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

METALS DATA EVALUATION (continued)

7. Laboratory Control Sample (LCS):

The recoveries for the solid LCSs were within the established control limits.

8. Duplicate Sample Analysis:

Samples UTP03-014-51-01, SMS01-029-51-02-22, SMS01-013-51-02-11F, EPL01-010-51-01, UTP04-017-51-01 and five laboratory control samples underwent duplicate analysis for the soil matrix. QC criteria are that the Relative Percent Difference (RPD) values for the duplicate sample analysis be less than 20 percent for aqueous samples and 35% for solid samples for concentrations greater than five times the CRDL. For sample concentrations less than five times the CRDL, the QC criteria are within ± the CRDL for the water matrix or ± two times the CRDL for the soil matrix. QC criteria were not met for the following analytes:

ANALYTE	MATRIX	RPD or CONC	ASSOCIATED SAMPLES	QUALIFIER FLAG
As	Soil	73.7%	SMS01-029-51-02-22, SMS01-028-51-01-18, SMS01-028-51-02-18, SMS01-027-51-01-17B, SMS01-027-51-02-02-17B, SMS01-026-51-01-26, SMS01-026-51-02-26,SMS01-025-51-01-17F, SMS01-025-51-02-17F, SMS01-019-51-01-13&14, SMS01-019-41-02-13&14, SMS01-018-51-01, SMS01-018-51-02, SMS017-51-01, SMS01-017-51-02, SMS01-016-51-02, SMS01-015-51-02, SMS01-014-51-01-11F, SMS01-014-51-02-11F, SMS01-013-51-01-11F	JK or UJK
Pb	Soil	103%	Same As Above	JK or UJK

9. Spiked Sample Analysis:

Samples UTP03-014-51-01, SMS01-029-51-02-22, SMS01-013-51-02-11F, EPL01-010-51-01, and UTP04-017-51-01 underwent spike analysis for the soil matrix. The spike recoveries for the following analytes were outside of the 75-125% recovery QC limits:

METALS DATA EVALUATION (continued)

ANALYTE	MATRIX	REC. %	ASSOCIATED SAMPLES	QUALIFIER FLAG
As (MS)	soil	45.2	SMS01-029-51-02-22, SMS01-028-51-01-18, SMS01-028-51-02-18, SMS01-027-51-01-17B, SMS01-027-51-02-02-17B, SMS01-026-51-01-26, SMS01-026-51-02-26,SMS01-025-51-01-17F, SMS01-025-51-02-17F, SMS01-019-51-01-13&14, SMS01-019-41-02-13&14, SMS01-018-51-01, SMS01-018-51-02, SMS017-51-01, SMS01-017-51-02, SMS01-016-51-02, SMS01-015-51-02, SMS01-014-51-01-11F, SMS01-014-51-02-11F, SMS01-013-51-01-11F	JL or UJL
Pb (MS)	soil	69.2	Same As Above	JL or UJL
Pb (MSD)	soil	217	Same As Above	JH if detected
As (MSD)	soil	126	EPL01-010-51-01, EPL01-010-51-02, EPL01-009-51-01, EPL01-009-51-02, EPL01-008-51-01, EPL01-008-51-02, EPL01-006-51-01, EPL01-006-51-02, EPL01-005-51-01, EPL01-005-51-02, EPL01-004-51-01, EPL01-004-51-02, EPL01-003-51-01, EPL01-003-51-02, EPL01-001-51-01, EPL01-001-51-02, UTP04-019-51-01, UTP04-018-51-01, UTP04-015-51-01, UTP04-016-51-01	JH if detected

10. ICP Serial Dilution:

No serial dilutions were performed with this group of samples.

11. Sample Quantitation and CRDLs

Concentrations of all reported analytes were correctly calculated.

Sample quantitation limits (SQLs) were greater than CRDLs in the following samples due to the factors listed below.

Roy F. Weston, Inc.
El Paso County Metal Survey

METALS DATA EVALUATION (continued)

SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
UTP01-006-51-01	Lead	4				4
UTP01-006-51-02	Lead	4				4
UTP01-005-51-01	Lead	5				5
UTP01-005-51-02	Lead	4				4
UTP01-004-51-01	Lead	4				4
UTP01-003-51-01	Lead	5				5
SMS01-029-51-01-22	Lead	2				2
SMS01-028-51-01-18	Lead	2				2
SMS01-028-51-02-18	Lead	4				4
SMS01-027-51-01-17B	Lead	2				2
SMS01-026-51-01-26	Lead	2				2
SMS01-026-51-02-26	Lead	10				10
SMS01-025-51-01-17F	Lead	5				5
SMS01-014-51-01-11F	Lead	2				2
SMS01-014-51-02-11F	Lead	2				2
SMS01-013-51-02-11F	Lead	2				2
SMS01-009-51-01-7F	Lead	2				2
SMS01-009-51-02-7F	Lead	2				2
SMS01-008-51-01-6B	Lead	2				2
SMS01-008-51-01-6F	Lead	2				2

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SAMPLE NO	ANALYTE	DF	ASV OR ASW	% SOLIDS	ADV	SQL FACTOR
SMS01-006-51-01-4F	Lead	2				2
SMS01-006-51-02-4F	Lead	5				5
SMS01-005-51-02-3B	Lead	4				4
SMS01-004-51-01-3F	Lead	2				2
SMS01-004-51-02-3F	Lead	5				5
EPL01-011-51-01	Lead	5				5
EPL01-011-51-02	Lead	5				5
EPL01-010-51-01	Lead	5				5
EPL01-010-51-02	Lead	5				5
EPL01-009-51-02	Lead	2				2
EPL01-008-51-01	Lead	2				2
EPL-01-006-51-01	Lead	2				2
EPL01-005-51-01	Lead	4				4
EPL01-005-51-02	Lead	4				4
EPL01-004-51-01	Lead	4				4
EPL01-003-51-01	Lead	5				5
EPL01-001-51-01	Lead	2				2
UTP01-005-52-02	Lead	2				2
SMS01-009-51-02-7F	Lead	2				2
SMS01-009-52-01-7F	Lead	4				4
EPL01-008-52-01	Lead	2				2

DF = Dilution Factor, ASV = Actual sample volume, ASW = Actual sample weight, ADV = Actual digestate or distillate volume

METALS DATA EVALUATION (continued)

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Three preparation blanks contained some low level contamination. None of the samples were affected and no qualifications were necessary.
One of the spiked duplicate results were out of control limits for lead and arsenic. These analytes were qualified as estimated, unknown bias in the affected samples.
One matrix spike contained arsenic that recovered below required control limits. This analyte was qualified as estimated, biased low in the affected samples. One spike contained lead that recovered below required limits in the spike and above required limits in the spike duplicate. This analyte was qualified as estimated, unknown bias in the affected samples. Arsenic recovered above required limits in the fourth spike analyzed with this batch of samples. All affected samples had this analyte qualified as estimated, biased high.
None of the samples analyzed were dry weight corrected. All samples results are based on wet weight.
Due to salt problems, clogging of the instruments, and the RPD values of the duplicate samples being high, the reporting limits for samples SMS01-017-51-01 (As), SMS01-010-51-01-7B (As) and UTP02-010-52-01 (Pb) were raised from 3 mg/kg to 5 mg/kg.

The analytical data is acceptable for use with the qualifications listed above.

Sampling Date - August 3, 2001
Method of Analysis - 6010B

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
UTP03-014-51-01	080301007-1	7.0		3.0	<3.0	U	3.0
UTP03-013-51-01	080301007-2	11		3.0	<3.0	U	3.0
UTP03-012-51-01	080301007-3	7.3		3.0	<3.0	U	3.0
UTP03-011-51-01	080301007-4	8.1		3.0	<3.0	U	3.0
UTP02-010-51-01	080301007-5	4.2		3.0	<3.0	U	3.0
UTP02-009-51-01	080301007-6	5.7		3.0	<3.0	U	3.0
UTP02-008-51-01	080301007-7	<3.0	U	3.0	<3.0	U	3.0
UTP02-007-51-01	080301007-8	<3.0	U	3.0	<3.0	U	3.0
UTP01-006-51-01	080301007-9	420	D	12	34		3.0
UTP01-006-51-02	080301007-10	380	D	12	23		3.0
UTP01-005-51-01	080301007-11	480	D	15	37		3.0
UTP01-005-51-02	080301007-12	310	D	12	26		3.0
UTP01-004-51-01	080301007-13	400	D	12	39		3.0
UTP01-004-51-02	080301007-14	17		3.0	8.3		3.0
UTP01-003-51-01	080301007-15	590	D	15	51		3.0
UTP01-002-51-01	080301007-16	120		3.0	6.6		3.0
UTP01-002-51-02	080301007-17	<3.0	U	3.0	<3.0	U	3.0
UTP01-001-51-01	080301007-18	26		3.0	8.4		3.0
UTP01-001-51-02	080301007-19	<3.0	U	3.0	<3.0	U	3.0
SMS01-029-51-01-22	080301007-20	210	D	6.0	22		3.0
SMS01-029-51-02-22	080301007-21	88	JK	3.0	11	JK	3.0
SMS01-028-51-01-18	080301007-22	210	DJK	6.0	25	JK	3.0
SMS01-028-51-02-18	080301007-23	240	DJK	12	28	JK	3.0
SMS01-027-51-01-17B	080301007-24	180	DJK	6.0	23	JK	3.0
SMS01-027-51-02-17B	080301007-25	57	JK	3.0	14	JK	3.0
SMS01-026-51-01-26	080301007-26	180	DJK	6.0	17	JK	3.0
SMS01-026-51-02-26	080301007-27	850	DJK	30	28	JK	3.0
SMS01-025-51-01-17F	080301007-28	260	DJK	15	34	JK	3.0
SMS01-025-51-02-17F	080301007-29	110	JK	3.0	15	JK	3.0
SMS01-019-51-01-13&	080301007-30	25	JK	3.0	<3.0	UJK	3.0
SMS01-019-51-02-13&	080301007-31	17	JK	3.0	<3.0	UJK	3.0

MB

SMS01-018-51-01	080301007-32	19	JK	3.0	<3.0	UJK	3.0
SMS01-018-51-02	080301007-33	13	JK	3.0	<3.0	UJK	3.0
SMS01-017-51-01	080301007-34	32	JK	3.0	<5.0	UJK	5.0
SMS01-017-51-02	080301007-35	120	JK	3.0	<3.0	UJK	3.0
SMS01-016-51-01	080301007-36	43	JK	3.0	<3.0	UJK	3.0
SMS01-015-51-01	080301007-37	70	JK	3.0	8.7	JK	3.0
SMS01-014-51-01-11F	080301007-38	150	DJK	6.0	11	JK	3.0
SMS01-014-51-02-11F	080301007-39	220	DJK	6.0	16	JK	3.0
SMS01-013-51-01-11F	080301007-40	100	JK	3.0	<3.0	UJK	3.0

Sample Number	**Lab ID Number**	**Lead mg/kg**	**Qualifier**	**Reporting Limit**	**Arsenic mg/kg**	**Qualifier**	**Reporting Limit**
SMS01-013-51-02-11F	080301007-41	170	D	6.0	4.9		3.0
SMS01-012-51-01-9F	080301007-42	45		3.0	<3.0	U	3.0
SMS01-012-51-02-9F	080301007-43	69		3.0	4.4		3.0
SMS01-011-51-01-Pur	080301007-44	100		3.0	12		3.0
SMS01-011-51-02-Pur	080301007-45	120		3.0	16		3.0
SMS01-010-51-01-7B	080301007-46	68		3.0	<5.0	U	5.0
SMS01-010-51-02-7B	080301007-47	34		3.0	<3.0	U	3.0
SMS01-009-51-01-7F	080301007-48	190	D	6.0	24		3.0
SMS01-009-51-02-7F	080301007-49	150	D	6.0	13		3.0
SMS01-008-51-01-6B	080301007-50	140	D	6.0	14		3.0
SMS01-007-51-01-6F	080301007-51	140	D	6.0	18		3.0
SMS01-007-51-02-6F	080301007-52	95		3.0	6.7		3.0
SMS01-006-51-01-4F	080301007-53	200	D	6.0	22		3.0
SMS01-006-51-02-4F	080301007-54	480	D	15	62		3.0
SMS01-005-51-01-3B	080301007-55	111		3.0	16		3.0
SMS01-005-51-02-3B	080301007-56	270	D	12	21		3.0
SMS01-004-51-01-3F	080301007-57	220	D	6.0	26		3.0
SMS01-004-51-02-3F	080301007-58	560	D	15	59		3.0
EPL01-011-51-01	080301007-59	350	D	15	9.3		3.0
EPL01-011-51-02	080301007-60	440	D	15	12		3.0
EPL01-010-51-01	080301007-61	330	D	15	<3.0	U	3.0
EPL01-010-51-02	080301007-62	470	D	15	13	JH	3.0
EPL01-009-51-01	080301007-63	100		3.0	<3.0	U	3.0
EPL01-009-51-02	080301007-64	160	D	6.0	<3.0	U	3.0
EPL01-008-51-01	080301007-65	98	D	6.0	<3.0	U	3.0
EPL01-008-51-02	080301007-66	37		3.0	<3.0	U	3.0
EPL01-006-51-01	080301007-67	170	D	6.0	<3.0	U	3.0
EPL01-006-51-02	080301007-68	45		3.0	<3.0	U	3.0
EPL01-005-51-01	080301007-69	120	D	12	<3.0	U	3.0

EPL01-005-51-02	080301007-70	150	D	12	10	JH	3.0
EPL01-004-51-01	080301007-71	310	D	12	<3.0	U	3.0
EPL01-004-51-02	080301007-72	120		3.0	<3.0	U	3.0
EPL01-003-51-01	080301007-73	250	D	15	<3.0	U	3.0
EPL01-003-51-02	080301007-74	54		3.0	<3.0	U	3.0
EPL01-001-51-01	080301007-75	130	D	6.0	<3.0	U	3.0
EPL01-001-51-02	080301007-76	120		3.0	<3.0	U	3.0
UTP04-019-51-01	080301007-77	22		3.0	<3.0	U	3.0
UTP04-018-51-01	080301007-78	22		3.0	<3.0	U	3.0
UTP04-015-51-01	080301007-79	23		3.0	<3.0	U	3.0
UTP04-016-51-01	080301007-80	24		3.0	<3.0	U	3.0

Sample Number	Lab ID Number	Lead mg/kg	Qualifier	Reporting Limit	Arsenic mg/kg	Qualifier	Reporting Limit
UTP04-017-51-01	080301007-81	25		3.0	<3.0	U	3.0
UTP01-002-52-02	080301007-82	170	D	6.0	9.1		3.0
UTP02-010-52-01	080301007-83	<5.0	U	5.0	<3.0	U	3.0
SMS01-009-52-02-7F	080301007-84	180	D	6.0	10		3.0
SMS01-009-52-01-7F	080301007-85	240	D	12	23		3.0
EPL01-008-52-01	080301007-86	190	D	6.0	<3.0	U	3.0

ANALYTICAL RESULTS
08/03/01

Sampling Date……….: 08-03-01 Submittal Date………: 08-03-01
Matrix………………..: Soil Method………………: 6010B
Date Analyzed……….: 8/3/01-8/4/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyzed
UTP03-014-51-01	080301007-1	7.0	3.0	<3.0	3.0	NM/WW
UTP03-013-51-01	080301007-2	11	3.0	<3.0	3.0	NM/WW
UTP03-012-51-01	080301007-3	7.3	3.0	<3.0	3.0	NM/WW
UTP03-011-51-01	080301007-4	8.2	3.0	<3.0	3.0	NM/WW
UTP02-010-51-01	080301007-5	4.2	3.0	<3.0	3.0	NM/WW
UTP02-009-51-01	080301007-6	5.7	3.0	<3.0	3.0	NM/WW
UTP02-008-51-01	080301007-7	<3.0	3.0	<3.0	3.0	NM/WW
UTP02-007-51-01	080301007-8	<3.0	3.0	<3.0	3.0	NM/WW
UTP01-006-51-01	080301007-9	420	12	34	3.0	NM/WW
UTP01-006-51-02	080301007-10	380	12	23	3.0	NM/WW
UTP01-005-51-01	080301007-11	480	15	37	3.0	NM/WW
UTP01-005-51-02	080301007-12	310	12	26	3.0	NM/WW
UTP01-004-51-01	080301007-13	400	12	39	3.0	NM/WW
UTP01-004-51-02	080301007-14	17	3.0	8.3	3.0	NM/WW
UTP01-003-51-01	080301007-15	590	15	51	3.0	NM/WW
UTP01-002-51-01	080301007-16	120	3.0	6.6	3.0	NM/WW
UTP01-002-51-02	080301007-17	<3.0	3.0	<3.0	3.0	NM/WW
UTP01-001-51-01	080301007-18	26	3.0	8.4	3.0	NM/WW
UTP01-001-51-02	080301007-19	<3.0	3.0	<3.0	3.0	NM/WW
SMS01-029-51-01-22	080301007-20	210	6.0	22	3.0	NM/WW
SMS01-029-51-02-22	080301007-21	88	3.0	11	3.0	NM/WW
SMS01-028-51-01-18	080301007-22	210	6.0	25	3.0	NM/WW
SMS01-028-51-02-18	080301007-23	240	12	28	3.0	NM/WW
SMS01-027-51-01-17B	080301007-24	180	6.0	23	3.0	NM/WW
SMS01-027-51-02-17B	080301007-25	57	3.0	14	3.0	NM/WW
SMS01-026-51-01-26	080301007-26	180	6.0	17	3.0	NM/WW
SMS01-026-51-02-26	080301007-27	850	30	28	3.0	NM/WW
SMS01-025-51-01-17F	080301007-28	260	15	34	3.0	NM/WW
SMS01-025-51-02-17F	080301007-29	110	3.0	15	3.0	NM/WW
SMS01-019-51-01-13&12	080301007-30	25	3.0	<3.0	3.0	NM/WW
SMS01-019-51-02-13&12	080301007-31	17	3.0	<3.0	3.0	NM/WW

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ANALYTICAL RESULTS
08/03/01

Sampling Date.........: 08-03-01 Submittal Date........: 08-03-01
Matrix...................: Soil Method.................: 6010B
Date Analyzed.........: 8/3/01-8/4/01

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyzed
SMS01-018-51-01	080301007-32	19	3.0	<3.0	3.0	NM/WW
SMS01-018-51-02	080301007-33	13	3.0	<3.0	3.0	NM/WW
SMS01-017-51-01	080301007-34	32	3.0	<5.0	5.0	NM/WW
SMS01-017-51-02	080301007-35	120	3.0	<3.0	3.0	NM/WW
SMS01-016-51-01	080301007-36	43	3.0	<3.0	3.0	NM/WW
SMS01-015-51-01	080301007-37	70	3.0	8.7	3.0	NM/WW
SMS01-014-51-01-11F	080301007-38	150	6.0	11	3.0	NM/WW
SMS01-014-51-02-11F	080301007-39	220	6.0	16	3.0	NM/WW
SMS01-013-51-01-11F	080301007-40	100	3.0	~~<3.0~~ 3.3 mb	3.0	NM/WW
SMS01-013-51-02-11F	080301007-41	170	6.0	4.9	3.0	JM/NM
SMS01-012-51-01-9F	080301007-42	45	3.0	<3.0	3.0	JM/NM
SMS01-012-51-02-9F	080301007-43	69	3.0	4.4	3.0	JM/NM
SMS01-011-51-01-Purp	080301007-44	100	3.0	12	3.0	JM/NM
SMS01-011-51-02-Purp	080301007-45	120	3.0	16	3.0	JM/NM
SMS01-010-51-01-7B	080301007-46	68	3.0	<5.0	5.0	JM/NM
SMS01-010-51-02-7B	080301007-47	34	3.0	<3.0	3.0	JM/NM
SMS01-009-51-01-7F	080301007-48	190	6.0	24	3.0	JM/NM
SMS01-009-51-02-7F	080301007-49	150	6.0	13	3.0	JM/NM
SMS01-008-51-01-6B	080301007-50	140	6.0	14	3.0	JM/NM
SMS01-007-51-01-6F	080301007-51	140	6.0	18	3.0	JM/NM
SMS01-007-51-02-6F	080301007-52	95	3.0	6.7	3.0	JM/NM
SMS01-006-51-01-4F	080301007-53	200	6.0	22	3.0	JM/NM
SMS01-006-51-02-4F	080301007-54	480	15	62	3.0	JM/NM
SMS01-005-51-01-3B	080301007-55	110	3.0	16	3.0	JM/NM
SMS01-005-51-02-3B	080301007-56	270	12	21	3.0	JM/NM
SMS01-004-51-01-3F	080301007-57	220	6.0	26	3.0	JM/NM
SMS01-004-51-02-3F	080301007-58	560	15	59	3.0	JM/NM
EPL01-011-51-01	080301007-59	350	15	9.3	3.0	JM/NM
EPL01-011-51-02	080301007-60	440	15	12	3.0	JM/NM
EPL01-010-51-01	080301007-61	330	15	<3.0	3.0	JM/NM
EPL01-010-51-02	080301007-62	470	15	13	3.0	JM/NM
EPL01-009-51-01	080301007-63	100	3.0	<3.0	3.0	JM/NM
EPL01-009-51-02	080301007-64	160	6.0	<3.0	3.0	JM/NM
EPL01-008-51-01	080301007-65	98	6.0	<3.0	3.0	JM/NM

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ICP RUN LOG

Curve Standard ID ICP-S-132 / ICP-S-133

Date 8/4/01

QC Standard ID ICP-S-128

Analyst M. munir

IES ID ICP-S-138 / ICP-S-134

Pos #	Sample #	Matrix	Dil. Digest	Dil.	Comments
	RB#1	3050B	X25		Pb
	LCS#1				
	LCSD#1				
	T080301007-1				
	-1MS				
	-1MSD				
	-2				
	-3				
	-4				
	-5				
	-6				
	-7				
	-8				
	-9				
	-10				
	-11				
	-12				
	-13				
	-14				
	-15				
	-16				
	-17				Continued

~~080301007-41 to 86 for As~~
~~see page 43 to~~ MM 8/5

Reviewed By:____________

Sampling Date.........: 08-03-01 Submittal Date.........: 08-03-01
Matrix.....................: Soil Method..................: 6010B
Date Analyzed.........:

Sample Number	Lab ID Number	Lead mg/kg	Reporting Limit	Arsenic mg/kg	Reporting Limit	Analyzed
EPL01-008-51-02	080301007-66	37	3.0	<3.0	3.0	JM/NM
EPL01-006-51-01	080301007-67	170	6.0	<3.0	3.0	JM/NM
EPL01-006-51-02	080301007-68	45	3.0	<3.0	3.0	JM/NM
EPL01-005-51-01	080301007-69	120	12	<3.0	3.0	JM/NM
EPL01-005-51-02	080301007-70	150	12	10	3.0	JM/NM
EPL01-004-51-01	080301007-71	310	12	<3.0	3.0	JM/NM
EPL01-004-51-02	080301007-72	120	3.0	<3.0	3.0	JM/NM
EPL01-003-51-01	080301007-73	250	15	<3.0	3.0	JM/NM
EPL01-003-51-02	080301007-74	54	3.0	<3.0	3.0	JM/NM
EPL01-001-51-01	080301007-75	130	6.0	<3.0	3.0	JM/NM
EPL01-001-51-02	080301007-76	120	3.0	<3.0	3.0	JM/NM
UTP04-019-51-01	080301007-77	22	3.0	<3.0	3.0	JM/NM
UTP04-018-51-01	080301007-78	22	3.0	<3.0	3.0	JM/NM
UTP04-015-51-01	080301007-79	23	3.0	<3.0	3.0	JM/NM
UTP04-016-51-01	080301007-80	24	3.0	<3.0	3.0	JM/NM
UTP04-017-51-01	080301007-81	25	3.0	<3.0	3.0	WW/NM
UTP01-002-52-02	080301007-82	170	6.0	9.1	3.0	WW/NM
UTP02-010-52-01	080301007-83	<5.0	5.0	<3.0	3.0	WW/NM
SMS01-009-52-02-7F	080301007-84	180	6.0	10	3.0	WW/NM
SMS01-009-52-01-7F	080301007-85	240	12	23	3.0	WW/NM
EPL01-008-52-01	080301007-86	190	6.0	<3.0	3.0	WW/NM

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QUALITY CONTROL REPORT

METALS

Parameter	Blank	MS	MSD	% Recovery	LCS	LCS DUP	% Recovery	Open CCV	Close CCV	True Value
Arsenic	<3.00	21.7	20.0	86.8 80.0	22.0	24.3	88.0 97.2	2.39	2.27	2.50
Lead	<3.00	20.1	19.0	80.4 76.0	21.4	21.5	85.6 86.0	2.54	2.54	2.50
Arsenic	<3.00	11.3*	24.5	45.2 98.0	20.1	21.6	80.4 86.4	2.32	2.66	2.50
Lead	<3.00	17.3*	54.3*	69.2 217	22.0	21.5	88.0 86.0	2.41	2.55	2.50
Arsenic	<3.00	25.5	26.7	102 107	23.7	24.8	94.8 99.2	2.46	2.70	2.50
Lead	<3.00	0.00	0.00	NP NP	21.8	20.2	87.2 80.8	2.55	2.51	2.50
Arsenic	<3.00	24.1	31.6*	96.4 126	26.8	27.6	107 110	2.72	2.55	2.50
Lead	<3.00	0.00	0.00	NP NP	22.4	22.3	89.6 89.2	2.61	2.43	2.50
Arsenic	<3.00	19.6	21.7	78.4 86.8	25.5	26.4	102 106	2.55	2.67	2.50
Lead	<3.00 MB	~~5.5*~~ 19.7	~~8.3*~~ 21.0	22.0 33.2	~~19.5~~ ~~19.7~~	~~20.2~~ ~~21.6~~	~~78.0~~ 93.6 ~~80.8~~ 96.8	2.43	2.35	2.50

NP – Not practical because sample result is more than 5 times greater than the spike level.
*MS out of acceptance criteria possibly due to matrix effect.
Unless otherwise noted, all QC and True Values are in ppm. 23.4 24.2

Ruben Parra
Technical Director

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