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Cherryvale, Kansas Residential Soil Evaluation

Prepared for:
Kansas Department of Health and Environment

Prepared by:
Project Navigator, Ltd.
10497 Town & Country Way Suite 830
Houston, TX 77024

On behalf of United States Steel Corporation and
Citigroup Global Market Holdings, Inc., Respondents in
Consent Order Case No. 03-E-0222, as amended (the
"Respondents")

November, 2011

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1.0 Introduction

This report summarizes work performed for residential soil screening at the residential properties designated as 500, 502, 504, 506, 508 Coyle Street, 501 Martin Street, 502 and 508 Liberty Street, Cherryvale, Kansas, as described in the letter dated July 8, 2011 to KDHE outlining the work. The above-referenced residential properties are hereafter sometimes called the "Residential Site" and are generally depicted in Figure 1.

Work was performed on the initial screening areas at properties on Coyle Street and Martin Street between August 28, 2011 and September 2, 2011. Additional sampling was performed on September 28, 2011 that included the Liberty Street properties. The work was performed by Project Navigator, Ltd., under the supervision of Mark Landress, Kansas Licensed Professional Geologist No. 793 on behalf of the Respondents.

2.0 Background Information

The subject properties are adjacent to the former National Zinc Smelter facility on the northern edge of Cherryvale. The history and details of the facility are documented in various site reports which are on file at the Kansas Department of Health and Environment. Briefly summarized, the smelter operated as a primary zinc recovery facility first constructed by the Edgar Zinc company in 1898. Through the years, a smelting complex of roasters, furnaces and several thousand zinc retorts were constructed. The facility operated into the late 1920s and early 1930s when most active operations ceased. The facility permanently ceased operations in 1976 leaving various smelter residues that were contained on the smelter site in settling ponds and at the surface. The smelter site was eventually remediated in 2007 by the Respondents.

Prior to the remediation of the smelter site, various investigations and actions were conducted by KDHE which identified soil impacts to the surrounding community that were not part of the smelter property. KDHE performed extensive sampling leading to a Removal Site Evaluation (RSE) conducted in 2001 for the residential yard area south of the smelter site. This led to a EPA time-critical removal action for the residential yards and nearby rodeo grounds performed in 2001 and 2002. However, the subject Residential Site was not remediated during the 2001-2002 EPA removal action. On May 31, 2011, the Respondents were notified by KDHE that slag fragments with elevated metal values had been identified by KDHE at 504-406 Coyle St. Subsequently, a request by KDHE to the Respondents was made to investigate Residential Site and assess the nature and extent of any smelter-related impacts. The Respondents contacted and secured access agreements from the subject property landowners and field investigation plans were formulated in advance of field work conducted in August and September 2011.

2.1 Site Description

The Residential Site consists of residential parcels in the City of Cherryvale immediately south of the former National Zinc Smelter site and also located south of the City Water Plant. The status of the subject parcels is summarized below. The site features are depicted in Figure 2.

Property	Building	Occupancy	Site Description	Smelter Material
500 Coyle	Single wide trailer	Vacant	Driveway with crushed stone and exposed soil.	Observed as fill 12" thick below 4 inches with slag fragments at surface
502 Coyle	Small shed	Vacant	Driveway with crushed stone and exposed soil.	Observed as fill 12" thick below 4 inches with slag fragments at surface.
504 Coyle	Single wide trailer	Vacant	Driveway with crushed stone and exposed soil. Small plant area in front with play area	Observed as fill 12" thick below 4 inches with slag fragments at surface.
506 Coyle	Single wide trailer	Vacant	Driveway with crushed stone and exposed soil. Small plant area in front with play area	Observed as fill 12" thick below 4 inches with slag fragments at surface. Exposed in drainage.
508 Coyle	None	Vacant	Grass covered lot.	Not observed
501 Martin	Single wide trailer	Occupied	Grass covered lot with dog pen and small outbuildings. Trees on north and west.	Small slag fragments in driveway.
502 Liberty	Double wide manufactured home with outbuildings	Occupied	Crushed stone driveway, grass covered lot, with outbuilding and detached garage. Trees on west side.	Sporadic small slag fragments near west side of driveway.
508 Liberty	Double wide manufactured home with outbuildings	Occupied	Pea gravel driveway, grass covered lot with attached garage and dog pen. Trees on south and west side.	Sporadic small slag fragments.

Reconnaissance observations indicated the possible presence of fill containing slag and smelter debris along the north property line at 506 Coyle street in the location identified by the property owner and where KDHE sampling indicated elevated metal concentrations. Coarse slag fragments, retort fragments and smelter debris up to approximately 4 inches in size was observed in this location. Slag fill approximately 12 inches thick was observed at 500, 502, 504 and 506 Coyle Street as measured in auger holes. Other properties examined showed native soil or clean soil fill with only occasional small slag fragments observed at the surface.

Slag and smelter fill when encountered is characterized by black and dark brown to ashy colored and glassy fragments with coarse vesicular clinker and purple and green ceramic retort fragments. This includes varying amounts of brick, rocky fill and soil. Slag fill was observed to be dry when encountered in place and ranges in size from sand sized particles to very coarse fragments up to 6 inches in size.

3.0 Field Procedure

Utility clearances were obtained and One Call notified for major utilities in the area. Landowners identified additional phone and cable hookups from distribution points to the houses.

Soil samples were collected at numerous locations following generally guidelines in EPA OSWER 9285.7-50 Superfund Lead-Contaminated Residential Sites Handbook as amended. Sample locations were staked as per the submitted work plan with minor modifications allowing for structures, fences and access. Because buildings are manufactured homes, samples were limited to soil samples to identify smelter related material and did not include drip edge samples .

Properties were evaluated in two stages: First, properties west of Coyle Street including 500-508 Coyle and 501 Martin Street; and, second, property east of Coyle Street including 502 and 508 Liberty St.

Samples were selected to evaluate soil impacts above 400 mg/kg lead and were collected at 6-inch depth intervals using hand augers to a maximum depth of 24 inches. The sample collection process is depicted in Figure 3.

High use / play areas were evaluated at 504 and 506 Coyle Street with samples collected from the 0-1 inch depth horizon and sieved to plus 10, plus and minus 35 mesh screen to assess the impact of fine residue in the sample. There were no high use / play areas identified on the other properties.

Samples collected were individually bagged in Zip-Lock bags, labeled with the sample number, location and depth. Samples were denoted by property location and depth with each 6-inch sample horizon denoted as A, B, C, and D for the 0-6", 6-12", 12-18, and 18-24" depth respectively.

Excess soil material not recovered for the sample was placed back in the auger hole and covered. Sample equipment was then cleaned with soap and water and rinsed with distilled water before moving onto the next sample point. Samples were dry when collected and were air dried overnight before XRF analysis.

For composite samples, soil sample aliquots were removed from each sample bag and placed in a clean stainless steel mixing bowl where it was homogenized with a clean trowel. The homogenized material was then transferred to a plastic bag for field XRF analysis and splits prepared for laboratory analysis and for KDHE. Sample equipment was cleaned after compositing and the process repeated for each composite. Laboratory samples were selected based on a range of XRF values to check the instrument response and to bracket the 400 mg/kg regulatory threshold for residential lead in soil.

All samples were screened in the field for lead using an Innov-X Alpha portable X-ray fluorescence analyzer (XRF) operating in soil mode. The instrument was initially factory calibrated prior to use and it employs an external standardization plate which checks the detector resolution and peak function. The instrument standardization is performed on start-up and after 4 hours of use. The internal software will inhibit the instrument if the unit does not pass one or more internal checks during standardization. Replicate analysis on individual samples, laboratory cross-check and internal calibration using the manufacturer supplied standardization plates comprised the instrument operational check for the work. NIST standards and replicate analyses were used to check the reproducibility of the instrument readings in the field and for QA/QC checks. The instrument operators received X-ray radiation safety training prior to the use of the instrument in Kansas, and Project Navigator Ltd., holds a 2011 KDHE BEH Radiation and Asbestos Control Section Certificate of Registration No. 7192 to operate XRF analyzers in the State of Kansas.

4.0 Sample Aliquot Readings

A single 1-minute XRF reading was taken for each individual sample aliquot with duplicate readings taken periodically during the analysis work.

5.0 Composite Readings

Three, 1-minute XRF readings were made on each homogenized composite sample with readings taken at different points on the sample bag.

The data was recorded in the instrument data logger and visually checked on the instrument display to ensure proper instrument function. Data was transcribed from the data logger and extracted as tables for processing and for plotting on maps along with individual aliquot readings.

6.0 Properties West of Coyle St.

6.1 General

The properties at 500-506 Coyle street are notably elevated above the surrounding grade indicative of the fill pattern of the property. As noted previously, the slag fill is covered by a crushed limestone topping that thins on the west side of the property where dark soil is exposed. Surface soils on the west appear to be clean imported fill soil. On the south property line at 500 Coyle is the remnant of a brick sidewalk now overgrown with grass. Utility and sewer lines are in this corridor and the property falls off in elevation south towards Front Street.

At 508 Coyle and 501 Martin, the ground is characterized by native soil with trees and grass. Some slag was noted at the driveway at 501 Martin Street and along the drainage ditch surrounding the property on Martin and Coyle Street. A remnant elevated gravel road is present along the south property line at 508 Coyle Street.

6.2 Sample Numbering

The sample numbering scheme for 500-508 Coyle Street and 501 Martin Street is depicted in Figure 4.

6.3 XRF Field Screening Results

Figures 5 and 6 depict field XRF screening results for lead in soil for 0-1 inch depth surface samples and by depth below ground surface in 6-inch depth increments. Results posted are in milligrams per kilogram (mg/kg) over the investigation area for individual soil aliquots. Sample results over the screening limit of 400 mg/kg for lead are highlighted. The individual soil screening data is presented in Table 1.

Figure 6 depicts field XRF results for composites samples. Samples over the screening limit for lead are depicted on the figures.

Figure 7 depicts results for averaged XRF values for lead in composite samples. The raw data to populate Figure 7 is in Tables 2 and 3.

6.4 XRF Screening Result Discussion

Results for the 500-506 Coyle Street parcels are consistent with the observation of slag fill ranging from approximately 4 inches to 18 below ground surface which is below the

crushed limestone driveway topping. Samples that contain visible slag typically test above the 400 mg/kg screening limit.

In the high-use / play area at 504 and 506 Coyle Street depicted in Figure 2, 0-1 inch depth samples were analyzed for lead by size fraction on sieved material between minus 10 mesh (0.0787 in) and plus 35 mesh (0.0197 inches) and minus 35 mesh size. Samples collected from the 1-inch depth horizon show the limestone itself is below the screening limit for lead and sieved fractions do not materially differ in lead concentration for the size fractions tested. One sample in the high use area at sample 504-1-1 is over the screening limit for lead but slag fragments are observed in this sample location.

Samples from the ditch on the north side of 508 Coyle Street away from the slag layer show lead levels below the screening limit.

Results for 501 Martin Street indicate impacted non-slag soil primarily at the surface with higher lead values near Martin Street adjacent to the former National Zinc Smelter Site. At 508 Coyle Street, two samples above the screening limit for lead at 6-12 inches in depth is observed on the south and is possibly related to a remnant road running west along the property line. Other values in the 0-6 inch layer are consistent with surface impacts that are from the smelter site.

Impacts at 500-506 Coyle Street are associated with the slag fill and were noted down to the 18-24 inch horizon which likely includes some sloughing of material from the upper part of the auger hole. The majority of the slag fill is contained between the 0-18 inch horizon.

6.5 Laboratory Analytical Results

Laboratory analysis was performed on 10 sample composites for the 500-508 Coyle and 501 Martin Street Residential Sites. Analysis was performed by Pace Analytical Laboratories. The results are depicted in Figure 8 and include lead, arsenic and cadmium. The corresponding XRF reading for lead is shown in parentheses. Results over the screening limit are in bold type. Laboratory reports are in Attachment 1.

Lead results show values consistent with the XRF field measurements and observations of smelter related impacts. Laboratory results and comparison with XRF field results are in Table 4. Laboratory results are summarized in Table 5.

6.6 Areas with Lead in Soil Above 400 mg/kg

Areas with lead in soil above 400 mg/kg are summarized in Figure 9. Impacted soil volume is tabulated in Table 6 and broken down by property. Approximate volume is around 800 cubic yards in-place for properties west of Coyle Street.

7.0 Properties East of Coyle St.

7.1 General

The properties at 502 and 508 Liberty Street consist of double-wide manufactured homes with several outbuildings. Surrounding land is grass and tree-covered ground with drainage ditches on the west along Coyle Street and on the north property line at

508 Liberty. Residents report the soils are natural with no imported slag fill material. The property at 502 Liberty Street is elevated slightly above the surrounding grade and the owner reported some previous demolition of old structures and subsequent backfill and leveling of the ground with clean and surrounding soil. Some clean fill is draped on the east property line at 502 and 508 associated with the Liberty Street overpass.

7.2 Sample Numbering

The sample numbering scheme for 502 and 508 Liberty Street is depicted in Figure 10.

7.3 XRF Field Screening Results

Field XRF screening results for individual soil sample aliquots are presented in Figure 11. Composite sample XRF screening results are presented in Figure 12. Values above the screening limit of 400 mg/kg for lead are highlighted.

7.4 XRF Field Screening Discussion

At 502 and 508 Liberty Street, field XRF results indicate the soil is predominantly impacted by lead at the surface with a notable elevated reading in sample 502-3 in the driveway. Elevated readings 508-2 at 6-12 inches in depth appear to be covered by the embankment from the Liberty street overpass to the east. Other locations appear to have some debris or minor slag fragments possibly associated with adjacent road activity, driveways.

Samples around buildings were collected for in-situ direct reading XRF analysis on exposed soils in lieu of 6-inch depth samples. Results show elevated lead values above 400 mg/kg on the surface soils consistent with other 0-6" samples taken on the property. Small amounts of slag particles were observed on exposed soil around buildings on 502 Liberty and on the west side of the residence at 508 Liberty Street.

Observations are consistent with surface impacts and there is no indication of significant quantities of slag fill in this area.

7.5 Laboratory Results

Ten samples were collected including a blind duplicate for laboratory cross-check. Laboratory results for composite samples are presented in Figure 13. Values above the respective residential benchmark screening limits are highlighted. Results for lead, arsenic and cadmium are shown. Samples were collected over a range of concentrations to provide a cross-check on field XRF results. Laboratory cross check comparisons with the field XRF results are presented in Table 4. Laboratory results are summarized in Table 5. Laboratory reports are in Attachment 1.

7.6 Areas with Lead Above 400 mg/kg

Areas with soil lead above 400 mg/kg are depicted in Figure 14. Estimated soil volumes are summarized in Table 6 and total approximately 500 cubic yards.

8.0 Laboratory Vs. Field Analysis for Arsenic and Cadmium

Results for these constituents are compared in Table 4. Results comparing arsenic between the XRF and laboratory results show an expected interference from elevated zinc concentrations which causes the XRF to read high compared with laboratory results. This interference causes the instrument detection limit to read above the screening limit for arsenic. However, using laboratory results, elevated arsenic corresponds with elevated lead, so lead may be used as a qualitative indicator of arsenic in the absence other data.

Cadmium XRF results area mostly below the lower limit of detection. For results that did report above detection, analytical results read low compared with field results. Cadmium tracks with lead analytically. When lead is below approximately 500 mg/kg, cadmium is near or below the screening threshold. Native soil below the slag is below the cadmium screening threshold.

9.0 XRF QA/QC and Cross-Check

Regression curves were calculated comparing field XRF and laboratory results for lead to confirm the field XRF values are reasonable for soil screening. This calculation is presented in Table 4. Using all data with no outliers removed, the correlation shows a reasonably good fit between laboratory and field results with an R^2 value of 0.857. Regression curves indicate the XRF reads approximately 50 mg/kg high for lead compared with laboratory results near the threshold of 400 mg/kg.

NIST soil standards were available and the replicate XRF readings for two standards is presented in Table 7. Average percent difference for the NIST standards is below the 20% threshold.

Field duplicate soil screening results are summarized in Table 8. These represent duplicate XRF analyses on the same sample designed to test the reproducibility of the XRF. Relative standard deviation (RSD) was calculated for the duplicate analyses. One sample did not meet QA/QC objectives with a RSD > 20. Overall RSD is below 20 indicating QA/QC is within acceptable limits.

Background levels were not determined in this investigation, however soil background for arsenic reported in the 2001 KDHE RSE range from 5.7 to 8.0 mg/kg. Lead background ranges from 15.7 to 209 mg/kg.

10.0 Sample Disposition

Sample splits for all samples were retained for further analysis if needed.

11.0 References

Standard Operating Procedure 4230.19 A; Soil Sampling at Lead-Contaminated Residential Sites, July 2007.

Superfund Lead-Contaminated Residential Sites Handbook, OSWER 9285.7.50, EPA, 2003

Method 6200, Field Portable X-Ray Fluorescence Spectrometry for the determination of elemental concentrations in soil and sediment. February 2007

Generic Quality Assurance Project Plan for Region 7's Superfund Lead Contaminated Sites, 2007

Radiation Safety and Start-Up Training, Innov-X Systems, Inc., July 2011

Innov-X Alpha User Manual, Innov-X Systems P/N 100392 Rev. B

KDHE Information Notice 04-01. Reminder to Register Radiation Producing Devices According to the Radiation Protection Regulations

Removal Site Evaluation (RSE) for the Cherryvale Residential Yards Site, Cherryvale, Montgomery County, Kansas, KDHE ID C306371097. March 2001

Brownfield Targeted Assessment for the National Zinc Site, KDHE, 1999.

Expanded Site Inspection Report (ESI) for the Former National Zinc Site, Cherryvale, Montgomery County, Kansas, EPA ID KSD 98040698, KDHE ID C306371097 March 2001.

Removal Action Summary Report, National Zinc Site, Cherryvale, KS. U.S. EPA Region 7 START 2, Contract No. 68-S7-01-41, Task Order No. 0063 (Residential Removal) by TetraTech, EM, 2002.

TABLES

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
500-1-1a	08/31/11	A	0-6"	2236.2	39.8	Shot 1	-	Point	500 Coyle	Guidie
500-1-1b	08/31/11	B	6-12"	1701.2	29.6	Shot 1	-	Point	500 Coyle	Guidie
500-1-1c	08/31/11	C	12-18"	362.5	11.0	Shot 1	-	Point	500 Coyle	Guidie
500-1-2a	08/30/11	A	0-6"	190.4	9.8	Shot 1	-	Point	500 Coyle	Guidie
500-1-2b	08/30/11	B	6-12"	436.3	13.4	Shot 1	-	Point	500 Coyle	Guidie
500-1-2c	08/30/11	C	12-18"	617.2	16.1	Shot 1	-	Point	500 Coyle	Guidie
500-1-2d	08/30/11	D	18-24"	<LOD	11.0	Shot 1	-	Point	500 Coyle	Guidie
500-1-3a	08/31/11	A	0-6"	1235.3	25.3	Shot 1	-	Point	500 Coyle	Guidie
500-1-3b	08/31/11	B	6-12"	1597.1	27.9	Shot 1	-	Point	500 Coyle	Guidie
500-1-3c	08/31/11	C	12-18"	56.1	6.3	Shot 1	-	Point	500 Coyle	Guidie
500-1-3d	08/31/11	D	18-24"	<LOD	12.4	Shot 1	-	Point	500 Coyle	Guidie
500-1-4a	08/31/11	A	0-6"	568.3	14.5	Shot 1	-	Point	500 Coyle	Guidie
500-1-4b	08/31/11	B	6-12"	498.5	13.3	Shot 1	-	Point	500 Coyle	Guidie
500-1-4c	08/31/11	C	12-18"	21.0	5.2	Shot 1	-	Point	500 Coyle	Guidie
500-1-5a	08/31/11	A	0-6"	921.9	21.5	Shot 1	-	Point	500 Coyle	Guidie
500-1-5b	08/31/11	B	6-12"	1207.7	24.9	Shot 1	-	Point	500 Coyle	Guidie
500-1-5c	08/31/11	C	12-18"	126.7	7.4	Shot 1	-	Point	500 Coyle	Guidie
500-1-5d	08/31/11	D	18-24"	<LOD	11.2	Shot 1	-	Point	500 Coyle	Guidie
500-2-1a	08/31/11	A	0-6"	198.7	8.0	Shot 1	-	Point	500 Coyle	Guidie
500-2-1b	08/31/11	B	6-12"	<LOD	13.1	Shot 1	-	Point	500 Coyle	Guidie
500-2-1c	08/31/11	C	12-18"	<LOD	12.2	Shot 1	-	Point	500 Coyle	Guidie
500-2-2a	08/31/11	A	0-6"	982.8	17.7	Shot 1	-	Point	500 Coyle	Guidie
500-2-2b	08/31/11	B	6-12"	2274.3	39.8	Shot 1	-	Point	500 Coyle	Guidie
500-2-2c	08/31/11	C	12-18"	507.7	13.1	Shot 1	-	Point	500 Coyle	Guidie
500-2-3a	08/31/11	A	0-6"	1527.8	30.1	Shot 1	-	Point	500 Coyle	Guidie
500-2-3b	08/31/11	B	6-12"	1442.5	23.3	Shot 1	-	Point	500 Coyle	Guidie
500-2-3c	08/31/11	C	12-18"	36.7	5.2	Shot 1	-	Point	500 Coyle	Guidie
500-2-4a	08/31/11	A	0-6"	1784.3	32.1	Shot 1	-	Point	500 Coyle	Guidie
500-2-4b	08/31/11	B	6-12"	323.8	8.3	Shot 1	-	Point	500 Coyle	Guidie
500-2-4c	08/31/11	C	12-18"	140.6	6.2	Shot 1	-	Point	500 Coyle	Guidie
500-2-4d	08/31/11	D	18-24"	534.9	12.9	Shot 1	-	Point	500 Coyle	Guidie
500-2-4d	08/31/11	D	18-24"	226.5	9.0	Shot 2 Dupe	-	Point	500 Coyle	Guidie
500-2-4d	08/31/11	D	18-24"	333.0	10.0	Shot 3 Dupe	-	Point	500 Coyle	Guidie
500-3-1a	08/31/11	A	0-6"	321.0	10.4	Shot 1	-	Point	500 Coyle	Guidie
500-3-1b	08/31/11	B	6-12"	<LOD	14.2	Shot 1	-	Point	500 Coyle	Guidie
500-3-1c	08/31/11	C	12-18"	<LOD	12.5	Shot 1	-	Point	500 Coyle	Guidie
500-3-1d	08/31/11	D	18-24"	<LOD	11.7	Shot 1	-	Point	500 Coyle	Guidie
500-3-2a	08/31/11	A	0-6"	109.2	6.4	Shot 1	-	Point	500 Coyle	Guidie
500-3-2b	08/31/11	B	6-12"	60.7	5.7	Shot 1	-	Point	500 Coyle	Guidie
500-3-2c	08/31/11	C	12-18"	22.1	4.7	Shot 1	-	Point	500 Coyle	Guidie
500-3-2d	08/31/11	D	18-24"	<LOD	12.4	Shot 1	-	Point	500 Coyle	Guidie
500-3-3a	08/30/11	A	0-6"	705.9	13.0	Shot 1	-	Point	500 Coyle	Guidie
500-3-3b	08/30/11	B	6-12"	119.2	7.0	Shot 1	-	Point	500 Coyle	Guidie
500-3-3c	08/30/11	C	12-18"	<LOD	11.2	Shot 1	-	Point	500 Coyle	Guidie
500-3-3d	08/30/11	D	18-24"	26.4	5.3	Shot 1	-	Point	500 Coyle	Guidie
500-3-4a	08/31/11	A	0-6"	122.6	6.1	Shot 1	-	Point	500 Coyle	Guidie
500-3-4b	08/31/11	B	6-12"	120.7	6.7	Shot 1	-	Point	500 Coyle	Guidie
500-3-4c	08/31/11	C	12-18"	90.9	6.2	Shot 1	-	Point	500 Coyle	Guidie
500-3-4d	08/31/11	D	18-24"	<LOD	12.2	Shot 1	-	Point	500 Coyle	Guidie
500-3-5a	08/30/11	A	0-6"	392.2	8.9	Shot 1	-	Point	500 Coyle	Guidie
500-3-5b	08/30/11	B	6-12"	<LOD	9.3	Shot 1	-	Point	500 Coyle	Guidie
500-3-5c	08/30/11	C	12-18"	<LOD	11.7	Shot 1	-	Point	500 Coyle	Guidie

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
502-1-1a	08/31/11	A	0-6"	431.6	12.0	-	-	Point	502 Coyle	Wood / Marler
502-1-1b	08/31/11	B	6-12"	1145.0	23.0	-	-	Point	502 Coyle	Wood / Marler
502-1-1c	08/31/11	C	12-18"	817.9	18.8	-	-	Point	502 Coyle	Wood / Marler
502-1-2a	08/30/11	A	0-6"	274.4	10.8	-	-	Point	502 Coyle	Wood / Marler
502-1-2b	08/30/11	B	6-12"	996.4	21.7	-	-	Point	502 Coyle	Wood / Marler
502-1-2c	08/30/11	C	12-18"	804.0	17.8	-	-	Point	502 Coyle	Wood / Marler
502-1-3a	08/30/11	A	0-6"	214.0	9.6	-	-	Point	502 Coyle	Wood / Marler
502-1-3b	08/30/11	B	6-12"	267.4	10.3	-	-	Point	502 Coyle	Wood / Marler

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
502-1-3c	08/30/11	C	12-18"	21.6	5.2	-	-	Point	502 Coyle	Wood / Marler
502-1-3d	08/30/11	D	18-24"	<LOD	10.7	-	-	Point	502 Coyle	Wood / Marler
502-1-4a	08/30/11	A	0-6"	2461.9	47.8	-	-	Point	502 Coyle	Wood / Marler
502-1-4b	08/30/11	B	6-12"	1449.9	29.6	-	-	Point	502 Coyle	Wood / Marler
502-1-4c	08/30/11	C	12-18"	226.8	8.4	-	-	Point	502 Coyle	Wood / Marler
502-1-5a	08/31/11	A	0-6"	1596.4	33.6	-	-	Point	502 Coyle	Wood / Marler
502-1-5b	08/31/11	B	6-12"	1726.3	36.2	-	-	Point	502 Coyle	Wood / Marler
502-2-1a	08/31/11	A	0-6"	624.1	14.4	-	-	Point	502 Coyle	Wood / Marler
502-2-1b	08/31/11	B	6-12"	96.9	6.4	-	-	Point	502 Coyle	Wood / Marler
502-2-1c	08/31/11	C	12-18"	<LOD	12.0	-	-	Point	502 Coyle	Wood / Marler
502-2-2a	08/31/11	A	0-6"	1672.2	24.0	-	-	Point	502 Coyle	Wood / Marler
502-2-2b	08/31/11	B	6-12"	934.8	14.5	-	-	Point	502 Coyle	Wood / Marler
502-2-2c	08/31/11	C	12-18"	<LOD	13.0	-	-	Point	502 Coyle	Wood / Marler
502-2-2d	08/31/11	D	18-24"	<LOD	13.4	-	-	Point	502 Coyle	Wood / Marler
502-2-3a	08/30/11	A	0-6"	2497.4	45.8	-	-	Point	502 Coyle	Wood / Marler
502-2-3b	08/30/11	B	6-12"	1117.2	22.1	-	-	Point	502 Coyle	Wood / Marler
502-2-3c	08/30/11	C	12-18"	209.4	7.6	-	-	Point	502 Coyle	Wood / Marler
502-2-3d	08/30/11	D	18-24"	28.4	5.1	-	-	Point	502 Coyle	Wood / Marler
502-2-4a	08/31/11	A	0-6"	297.1	9.2	-	-	Point	502 Coyle	Wood / Marler
502-2-4b	08/31/11	B	6-12"	45.7	5.5	-	-	Point	502 Coyle	Wood / Marler
502-2-4c	08/31/11	C	12-18"	<LOD	11.9	-	-	Point	502 Coyle	Wood / Marler
502-2-4c	08/31/11	C	12-18"	<LOD	13.0	DUP	-	Point	502 Coyle	Wood / Marler
502-2-4c	08/31/11	C	12-18"	<LOD	12.7	DUP-2	-	Point	502 Coyle	Wood / Marler
502-2-5a	08/30/11	A	0-6"	2521.2	45.9	-	-	Point	502 Coyle	Wood / Marler
502-2-5b	08/30/11	B	6-12"	1053.6	21.1	-	-	Point	502 Coyle	Wood / Marler
502-2-5c	08/30/11	C	12-18"	66.3	6.0	-	-	Point	502 Coyle	Wood / Marler
502-2-5c	08/30/11	C	12-18"	63.3	5.8	DUP	-	Point	502 Coyle	Wood / Marler
504-1-1a	08/30/11	A	0-6"	1335.0	25.3	-	-	Point	504 Coyle	Wood / Marler
504-1-1b	08/30/11	B	6-12"	2275.8	44.0	-	-	Point	504 Coyle	Wood / Marler
504-1-2a	08/30/11	A	0-6"	1670.2	33.7	-	-	Point	504 Coyle	Wood / Marler
504-1-2b	08/30/11	B	6-12"	1589.4	33.7	-	-	Point	504 Coyle	Wood / Marler
504-1-3a	08/30/11	A	0-6"	703.8	17.6	-	-	Point	504 Coyle	Wood / Marler
504-1-3b	08/30/11	B	6-12"	1933.2	39.0	-	-	Point	504 Coyle	Wood / Marler
504-1-4a	08/30/11	A	0-6"	2256.7	41.0	-	-	Point	504 Coyle	Wood / Marler
504-1-4b	08/30/11	B	6-12"	1701.5	34.8	-	-	Point	504 Coyle	Wood / Marler
504-1-4c	08/30/11	C	12-18"	1160.2	28.0	-	-	Point	504 Coyle	Wood / Marler
504-1-4d	08/31/11	D	18-24"	622.5	15.7	-	-	Point	504 Coyle	Wood / Marler
504-1-5a	08/30/11	A	0-6"	2224.7	46.7	-	-	Point	504 Coyle	Wood / Marler
504-1-5b	08/30/11	B	6-12"	1412.9	29.0	-	-	Point	504 Coyle	Wood / Marler
504-2-1a	08/30/11	A	0-6"	222.6	8.3	-	-	Point	504 Coyle	Wood / Marler
504-2-1b	08/30/11	B	6-12"	<LOD	13.3	-	-	Point	504 Coyle	Wood / Marler
504-2-1c	08/30/11	C	12-18"	<LOD	12.4	-	-	Point	504 Coyle	Wood / Marler
504-2-1d	08/30/11	D	18-24"	<LOD	14.2	-	-	Point	504 Coyle	Wood / Marler
504-2-2a	08/31/11	A	0-6"	1472.3	27.1	-	-	Point	504 Coyle	Wood / Marler
504-2-2b	08/31/11	B	6-12"	1553.1	34.9	-	-	Point	504 Coyle	Wood / Marler
504-2-2c	08/31/11	C	12-18"	518.5	14.0	-	-	Point	504 Coyle	Wood / Marler
504-2-3a	08/31/11	A	0-6"	1590.5	27.5	-	-	Point	504 Coyle	Wood / Marler
504-2-3b	08/31/11	B	6-12"	289.4	7.3	-	-	Point	504 Coyle	Wood / Marler
504-2-3c	08/31/11	C	12-18"	11.5	3.6	-	-	Point	504 Coyle	Wood / Marler
504-2-3d	08/31/11	D	18-24"	65.0	4.6	-	-	Point	504 Coyle	Wood / Marler
504-2-4a	08/30/11	A	0-6"	855.9	18.5	-	-	Point	504 Coyle	Wood / Marler
504-2-4b	08/30/11	B	6-12"	1157.0	25.0	-	-	Point	504 Coyle	Wood / Marler
504-2-4c	08/30/11	C	12-18"	580.6	14.7	-	-	Point	504 Coyle	Wood / Marler
506-1-1a	08/30/11	A	0-6"	1758.7	33.1	-	-	Point	506 Coyle	Wood / Marler
506-1-1a	08/30/11	A	0-6"	1933.2	28.0	DUP	-	Point	506 Coyle	Wood / Marler
506-1-1b	08/30/11	B	6-12"	1972.4	30.0	-	-	Point	506 Coyle	Wood / Marler
506-1-1c	08/30/11	C	12-18"	85.1	6.5	-	-	Point	506 Coyle	Wood / Marler
506-1-2a	08/30/11	A	0-6"	308.6	10.8	-	-	Point	506 Coyle	Wood / Marler
506-1-2b	08/30/11	B	6-12"	398.1	11.5	-	-	Point	506 Coyle	Wood / Marler
506-1-2c	08/30/11	C	12-18"	132.5	7.3	-	-	Point	506 Coyle	Wood / Marler
506-1-3a	08/30/11	A	0-6"	867.0	19.3	-	-	Point	506 Coyle	Wood / Marler
506-1-3b	08/30/11	B	6-12"	1321.5	25.4	-	-	Point	506 Coyle	Wood / Marler
506-1-3c	08/30/11	C	12-18"	602.3	15.6	-	-	Point	506 Coyle	Wood / Marler
506-1-3c	08/30/11	C	12-18"	724.4	12.9	DUP	-	Point	506 Coyle	Wood / Marler

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
506-1-4a	08/30/11	A	0-6"	3517.6	66.2	-	-	Point	506 Coyle	Wood / Marler
506-1-4b	08/30/11	B	6-12"	3048.2	56.7	-	-	Point	506 Coyle	Wood / Marler
506-1-4c	08/30/11	C	12-18"	345.1	10.7	-	-	Point	506 Coyle	Wood / Marler
506-1-5a	08/30/11	A	0-6"	2934.6	44.7	-	-	Point	506 Coyle	Wood / Marler
506-1-5b	08/30/11	B	6-12"	265.7	9.9	-	-	Point	506 Coyle	Wood / Marler
506-1-5c	08/30/11	C	12-18"	287.8	11.0	-	-	Point	506 Coyle	Wood / Marler
506-2-1a	08/31/11	A	0-6"	302.9	9.6	-	-	Point	506 Coyle	Wood / Marler
506-2-1b	08/31/11	B	6-12"	80.8	6.2	-	-	Point	506 Coyle	Wood / Marler
506-2-1c	08/31/11	C	12-18"	<LOD	15.3	-	-	Point	506 Coyle	Wood / Marler
506-2-2a	08/31/11	A	0-6"	4931.3	89.3	-	-	Point	506 Coyle	Wood / Marler
506-2-2a	08/31/11	A	0-6"	4247.0	74.0	DUP	-	Point	506 Coyle	Wood / Marler
506-2-2b	08/31/11	B	6-12"	702.9	17.4	-	-	Point	506 Coyle	Wood / Marler
506-2-2c	08/31/11	C	12-18"	658.3	16.5	-	-	Point	506 Coyle	Wood / Marler
506-2-3a	08/31/11	A	0-6"	2844.1	42.7	-	-	Point	506 Coyle	Wood / Marler
506-2-3b	08/31/11	B	6-12"	2513.2	46.2	-	-	Point	506 Coyle	Wood / Marler
506-2-3c	08/31/11	C	12-18"	980.9	18.6	-	-	Point	506 Coyle	Wood / Marler
506-2-3d	08/31/11	D	18-24"	190.3	8.0	-	-	Point	506 Coyle	Wood / Marler
506-2-4a	08/31/11	A	0-6"	1249.7	25.0	-	-	Point	506 Coyle	Wood / Marler
506-2-4b	08/31/11	B	6-12"	1889.2	35.5	-	-	Point	506 Coyle	Wood / Marler
506-2-4c	08/31/11	C	12-18"	702.0	16.6	-	-	Point	506 Coyle	Wood / Marler
506-2-4d	08/31/11	D	18-24"	64.2	6.2	-	-	Point	506 Coyle	Wood / Marler
506-3-1a	08/31/11	A	0-6"	<LOD	14.0	-	-	Point	506 Coyle	Wood / Marler
506-3-1b	08/31/11	B	6-12"	20.5	5.1	-	-	Point	506 Coyle	Wood / Marler
506-3-1c	08/31/11	C	12-18"	<LOD	13.1	-	-	Point	506 Coyle	Wood / Marler
506-3-1d	08/31/11	D	18-24"	<LOD	13.3	-	-	Point	506 Coyle	Wood / Marler
506-3-2a	08/31/11	A	0-6"	78.2	6.4	-	-	Point	506 Coyle	Wood / Marler
506-3-2b	08/31/11	B	6-12"	<LOD	11.8	-	-	Point	506 Coyle	Wood / Marler
506-3-2c	08/31/11	C	12-18"	<LOD	11.6	-	-	Point	506 Coyle	Wood / Marler
506-3-3a	08/31/11	A	0-6"	<LOD	11.2	-	-	Point	506 Coyle	Wood / Marler
506-3-3b	08/31/11	B	6-12"	37.9	4.9	-	-	Point	506 Coyle	Wood / Marler
506-3-3c	08/31/11	C	12-18"	26.6	5.7	-	-	Point	506 Coyle	Wood / Marler
506-3-4a	08/31/11	A	0-6"	<LOD	12.3	-	-	Point	506 Coyle	Wood / Marler
506-3-4b	08/31/11	B	6-12"	<LOD	8.8	-	-	Point	506 Coyle	Wood / Marler
506-3-4c	08/31/11	C	12-18"	98.5	6.9	-	-	Point	506 Coyle	Wood / Marler
506-3-5a	08/31/11	A	0-6"	170.6	8.2	-	-	Point	506 Coyle	Wood / Marler
506-3-5b	08/31/11	B	6-12"	104.2	6.2	-	-	Point	506 Coyle	Wood / Marler
506-3-5c	08/31/11	C	12-18"	<LOD	14.5	-	-	Point	506 Coyle	Wood / Marler

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
502-1-2-A	09/27/11	A	0-1" Bulk	119.0	6	-	-	Point	502 Coyle	Wood / Marler
502-1-2-A	09/27/11	A	" +35-10 Sieved	64	5	-	-	Point	502 Coyle	Wood / Marler
502-1-2-A	09/27/11	A	>1" -35 Sieved	47.0	4	-	-	Point	502 Coyle	Wood / Marler
504-1-1-A	09/27/11	A	" +35-10 Sieved	593.0	16	-	-	Point	504 Coyle	Wood / Marler
504-1-1-A	09/27/11	A	" +35-10 Sieved	517.0	15	DUPE	-	Point	504 Coyle	Wood / Marler
504-1-1-A	09/27/11	A	>1" -35 Sieved	519.0	14	-	-	Point	504 Coyle	Wood / Marler
504-1-1-A	09/27/11	A	>1" -35 Sieved	441.0	14	DUPE	-	Point	504 Coyle	Wood / Marler
504-1-4-A	09/27/11	A	0-1" Bulk	93.0	7	-	-	Point	504 Coyle	Wood / Marler
504-1-4-A	09/27/11	A	" +35-10 Sieved	108	7	-	-	Point	504 Coyle	Wood / Marler
504-1-4-A	09/27/11	A	>1" -35 Sieved	133.0	8	-	-	Point	504 Coyle	Wood / Marler
506-1-5-A	09/27/11	A	0-1" Bulk	223.0	9	-	-	Point	506 Coyle	Wood / Marler
506-1-5-A	09/27/11	A	" +35-10 Sieved	214.0	9	-	-	Point	506 Coyle	Wood / Marler
506-1-5-A	09/27/11	A	>1" -35 Sieved	216.0	9	-	-	Point	506 Coyle	Wood / Marler
506-1-5-A	09/27/11	A	>1" -35 Sieved	224.0	9	DUPE	-	Point	506 Coyle	Wood / Marler

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
501-1-1a	08/31/11	A	0-6"	108.9	6.4	Shot 1	-	Point	501 Martin	Paige
501-1-1b	08/31/11	B	6-12"	648.6	12.5	Shot 1	-	Point	501 Martin	Paige
501-1-1b	08/31/11	B	6-12"	581.7	14.1	Shot 2 Dupe	-	Point	501 Martin	Paige
501-1-1c	08/31/11	C	12-18"	324.9	7.6	Shot 1	-	Point	501 Martin	Paige
501-1-2a	08/31/11	A	0-6"	947.5	19.0	Shot 1	-	Point	501 Martin	Paige

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
501-1-2a	08/31/11	A	0-6"	1151.2	19.8	Shot 2 Dupe	-	Point	501 Martin	Paige
501-1-2b	08/31/11	B	6-12"	259.9	8.7	Shot 1	-	Point	501 Martin	Paige
501-1-2c	08/31/11	C	12-18"	68.4	6.0	Shot 1	-	Point	501 Martin	Paige
501-1-3a	08/31/11	A	0-6"	323.1	11.0	Shot 1	-	Point	501 Martin	Paige
501-1-3b	08/31/11	B	6-12"	151.2	5.5	Shot 1	-	Point	501 Martin	Paige
501-1-3c	08/31/11	C	12-18"	<LOD	16.9	Shot 1	-	Point	501 Martin	Paige
501-1-4a	08/31/11	A	0-6"	623.7	12.7	Shot 1	-	Point	501 Martin	Paige
501-1-4a	08/31/11	A	0-6"	654.8	14.3	Shot 2 Dupe	-	Point	501 Martin	Paige
501-1-4b	08/31/11	B	6-12"	16.2	4.6	Shot 1	-	Point	501 Martin	Paige
501-1-4c	08/31/11	C	12-18"	34.6	5.1	Shot 1	-	Point	501 Martin	Paige
501-1-5a	08/31/11	A	0-6"	503.0	12.3	Shot 1	-	Point	501 Martin	Paige
501-1-5a	08/31/11	A	0-6"	587.9	12.7	Shot 2 Dupe	-	Point	501 Martin	Paige
501-1-5b	08/31/11	B	6-12"	<LOD	14.0	Shot 1	-	Point	501 Martin	Paige
501-1-5c	08/31/11	C	12-18"	<LOD	14.4	Shot 1	-	Point	501 Martin	Paige
501-2-1a	08/31/11	A	0-6"	536.5	12.6	Shot 1	-	Point	501 Martin	Paige
501-2-1b	08/31/11	B	6-12"	24.2	4.9	Shot 1	-	Point	501 Martin	Paige
501-2-1c	08/31/11	C	12-18"	<LOD	14.4	Shot 1	-	Point	501 Martin	Paige
501-2-2a	08/31/11	A	0-6"	317.3	10.0	Shot 1	-	Point	501 Martin	Paige
501-2-2b	08/31/11	B	6-12"	<LOD	14.2	Shot 1	-	Point	501 Martin	Paige
501-2-2c	08/31/11	C	12-18"	<LOD	13.2	Shot 1	-	Point	501 Martin	Paige
501-2-3a	08/31/11	A	0-6"	188.0	6.0	Shot 1	-	Point	501 Martin	Paige
501-2-3b	08/31/11	B	6-12"	<LOD	11.3	Shot 1	-	Point	501 Martin	Paige
501-2-3c	08/31/11	C	12-18"	<LOD	13.0	Shot 1	-	Point	501 Martin	Paige
501-2-4a	08/31/11	A	0-6"	497.9	11.6	Shot 1	-	Point	501 Martin	Paige
501-2-4a	08/31/11	A	0-6"	425.4	11.0	Shot 2 Dupe	-	Point	501 Martin	Paige
501-2-4b	08/31/11	B	6-12"	<LOD	10.0	Shot 1	-	Point	501 Martin	Paige
501-2-4c	08/31/11	C	12-18"	<LOD	14.3	Shot 1	-	Point	501 Martin	Paige
501-2-5a	08/31/11	A	0-6"	276.4	8.6	Shot 1	-	Point	501 Martin	Paige
501-2-5b	08/31/11	B	6-12"	<LOD	13.3	Shot 1	-	Point	501 Martin	Paige
501-2-5c	08/31/11	C	12-18"	<LOD	11.3	Shot 1	-	Point	501 Martin	Paige
501-2-5d	08/31/11	D	18-24"	<LOD	12.1	Shot 1	-	Point	501 Martin	Paige
501-3-1a	08/31/11	A	0-6"	76.0	6.2	Shot 1	-	Point	501 Martin	Paige
501-3-1b	08/31/11	B	6-12"	<LOD	10.5	Shot 1	-	Point	501 Martin	Paige
501-3-1c	08/31/11	C	12-18"	<LOD	10.8	Shot 1	-	Point	501 Martin	Paige
501-3-2a	08/31/11	A	0-6"	172.6	8.2	Shot 1	-	Point	501 Martin	Paige
501-3-2b	08/31/11	B	6-12"	<LOD	12.9	Shot 1	-	Point	501 Martin	Paige
501-3-2c	08/31/11	C	12-18"	35.6	5.4	Shot 1	-	Point	501 Martin	Paige
501-3-3a	08/31/11	A	0-6"	345.3	10.4	Shot 1	-	Point	501 Martin	Paige
501-3-3b	08/31/11	B	6-12"	<LOD	14.9	Shot 1	-	Point	501 Martin	Paige
501-3-3c	08/31/11	C	12-18"	<LOD	13.9	Shot 1	-	Point	501 Martin	Paige
501-3-4a	08/31/11	A	0-6"	480.6	12.3	Shot 1	-	Point	501 Martin	Paige
501-3-4a	08/31/11	A	0-6"	481.6	12.3	Shot 2 Dupe	-	Point	501 Martin	Paige
501-3-4b	08/31/11	B	6-12"	<LOD	13.3	Shot 1	-	Point	501 Martin	Paige
501-3-4c	08/31/11	C	12-18"	<LOD	13.1	Shot 1	-	Point	501 Martin	Paige
501-3-5a	08/31/11	A	0-6"	330.1	9.7	Shot 1	-	Point	501 Martin	Paige
501-3-5b	08/31/11	B	6-12"	18.0	4.7	Shot 1	-	Point	501 Martin	Paige
501-3-5c	08/31/11	C	12-18"	<LOD	12.6	Shot 1	-	Point	501 Martin	Paige
501-4-1a	08/31/11	A	0-6"	264.1	8.7	Shot 1	-	Point	501 Martin	Paige
501-4-1b	08/31/11	B	6-12"	65.9	5.7	Shot 1	-	Point	501 Martin	Paige
501-4-1c	08/31/11	C	12-18"	<LOD	13.6	Shot 1	-	Point	501 Martin	Paige
501-4-2a	08/31/11	A	0-6"	347.1	10.4	Shot 1	-	Point	501 Martin	Paige
501-4-2b	08/31/11	B	6-12"	<LOD	14.0	Shot 1	-	Point	501 Martin	Paige
501-4-2c	08/31/11	C	12-18"	71.0	6.0	Shot 1	-	Point	501 Martin	Paige
501-4-3a	08/31/11	A	0-6"	209.8	7.7	Shot 1	-	Point	501 Martin	Paige
501-4-3b	08/31/11	B	6-12"	89.2	6.3	Shot 1	-	Point	501 Martin	Paige
501-4-3c	08/31/11	C	12-18"	<LOD	13.7	Shot 1	-	Point	501 Martin	Paige
501-4-4a	08/31/11	A	0-6"	414.1	11.1	Shot 1	-	Point	501 Martin	Paige
501-4-4b	08/31/11	B	6-12"	34.3	5.0	Shot 1	-	Point	501 Martin	Paige
501-4-4c	08/31/11	C	12-18"	<LOD	12.3	Shot 1	-	Point	501 Martin	Paige

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
508-1-1a	08/31/11	A	0-6"	530.6	12.6	-	-	Point	508 Coyle	Paige

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
508-1-1b	08/31/11	B	6-12"	<LOD	13.0	-	-	Point	508 Coyle	Paige
508-1-1c	08/31/11	C	12-18"	208.8	8.0	-	-	Point	508 Coyle	Paige
508-1-2a	08/31/11	A	0-6"	290.2	9.5	-	-	Point	508 Coyle	Paige
508-1-2b	08/31/11	B	6-12"	18.0	5.0	-	-	Point	508 Coyle	Paige
508-1-2c	08/31/11	C	12-18"	20.2	5.0	-	-	Point	508 Coyle	Paige
508-1-3a	08/31/11	A	0-6"	274.0	9.1	-	-	Point	508 Coyle	Paige
508-1-3b	08/31/11	B	6-12"	<LOD	13.3	-	-	Point	508 Coyle	Paige
508-1-3c	08/31/11	C	12-18"	<LOD	13.9	-	-	Point	508 Coyle	Paige
508-1-3d	08/31/11	D	18-24"	<LOD	11.6	-	-	Point	508 Coyle	Paige
508-1-4a	08/31/11	A	0-6"	154.0	6.6	-	-	Point	508 Coyle	Paige
508-1-4b	08/31/11	B	6-12"	<LOD	14.1	-	-	Point	508 Coyle	Paige
508-1-4c	08/31/11	C	12-18"	<LOD	14.2	-	-	Point	508 Coyle	Paige
508-1-4d	08/31/11	D	18-24"	35.3	5.5	-	-	Point	508 Coyle	Paige
508-1-5a	08/31/11	A	0-6"	363.7	10.5	-	-	Point	508 Coyle	Paige
508-1-5b	08/31/11	B	6-12"	24.0	4.8	-	-	Point	508 Coyle	Paige
508-1-5c	08/31/11	C	12-18"	<LOD	13.7	-	-	Point	508 Coyle	Paige
508-1-5d	08/31/11	D	18-24"	<LOD	22.4	-	-	Point	508 Coyle	Paige
508-2-1a	08/31/11	A	0-6"	126.7	6.3	-	-	Point	508 Coyle	Paige
508-2-1b	08/31/11	B	6-12"	<LOD	14.1	-	-	Point	508 Coyle	Paige
508-2-1c	08/31/11	C	12-18"	<LOD	16.1	-	-	Point	508 Coyle	Paige
508-2-1d	08/31/11	D	18-24"	<LOD	12.1	-	-	Point	508 Coyle	Paige
508-2-2a	08/31/11	A	0-6"	152.5	7.3	-	-	Point	508 Coyle	Paige
508-2-2b	08/31/11	B	6-12"	21.9	5.2	-	-	Point	508 Coyle	Paige
508-2-2c	08/31/11	C	12-18"	<LOD	14.7	-	-	Point	508 Coyle	Paige
508-2-2d	08/31/11	D	18-24"	<LOD	14.8	-	-	Point	508 Coyle	Paige
508-2-3a	08/31/11	A	0-6"	65.1	6.7	-	-	Point	508 Coyle	Paige
508-2-3b	08/31/11	B	6-12"	813.7	14.3	-	-	Point	508 Coyle	Paige
508-2-3c	08/31/11	C	12-18"	134.2	6.9	-	-	Point	508 Coyle	Paige
508-2-4a	08/31/11	A	0-6"	<LOD	15.8	-	-	Point	508 Coyle	Paige
508-2-4b	08/31/11	B	6-12"	1776.2	23.7	-	-	Point	508 Coyle	Paige
508-2-4b	08/31/11	B	6-12"	1450.0	21.0	DUP	-	Point	508 Coyle	Paige
508-2-4c	08/31/11	C	12-18"	317.3	7.7	-	-	Point	508 Coyle	Paige
508-2-5a	08/31/11	A	0-6"	223.3	8.5	-	-	Point	508 Coyle	Paige
508-2-5b	08/31/11	B	6-12"	<LOD	12.6	-	-	Point	508 Coyle	Paige
508-2-5c	08/31/11	C	12-18"	<LOD	10.8	-	-	Point	508 Coyle	Paige
508-2-5d	08/31/11	D	18-24"	<LOD	10.5	-	-	Point	508 Coyle	Paige

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Shot	Lab Split	Type	Address	Owner
502-1-1a	9/27/11	A	0-6"	634.0	14.0	Shot 1	-	Point	502 Liberty	Perez
502-1-1b	9/27/11	B	6-12"	81.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-1-1c	9/27/11	C	12-18"	83.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-1-2a	9/28/11	A	0-6"	363.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-1-2b	9/28/11	B	6-12"	118.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-1-2c	9/28/11	C	12-18"	41.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-1-3a	9/28/11	A	0-6"	576.0	13.0	Shot 1	-	Point	502 Liberty	Perez
502-1-3b	9/28/11	B	6-12"	244.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-1-3c	9/28/11	C	12-18"	212.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-1-4a	9/28/11	A	0-6"	843.0	17.0	Shot 1	-	Point	502 Liberty	Perez
502-1-4b	9/28/11	B	6-12"	212.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-1-4c	9/28/11	C	12-18"	188.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-1-4c	9/28/11	C	12-18"	200.0	8.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-1-5a	9/28/11	A	0-6"	322.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-1-5b	9/28/11	B	6-12"	131.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-1-5c	9/28/11	C	12-18"	74.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-2-1a	9/28/11	A	0-6"	459.0	12.0	Shot 1	-	Point	502 Liberty	Perez
502-2-1b	9/28/11	B	6-12"	185.0	7.0	Shot 1	-	Point	502 Liberty	Perez
502-2-1c	9/28/11	C	12-18"	64.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-2-2a	9/28/11	A	0-6"	476.0	13.0	Shot 1	-	Point	502 Liberty	Perez
502-2-2a	9/28/11	A	0-6"	450.0	12.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-2-2b	9/28/11	B	6-12"	85.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-2-2c	9/28/11	C	12-18"	60.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-2-3a	9/28/11	A	0-6"	589.0	13.0	Shot 1	-	Point	502 Liberty	Perez

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
502-2-3b	9/28/11	B	6-12"	121.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-2-3c	9/28/11	C	12-18"	90.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-2-4a	9/28/11	A	0-6"	278.0	9.0	Shot 1	-	Point	502 Liberty	Perez
502-2-4b	9/28/11	B	6-12"	358.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-2-4c	9/28/11	C	12-18"	194.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-2-5a	9/28/11	A	0-6"	188.0	7.0	Shot 1	-	Point	502 Liberty	Perez
502-2-5b	9/28/11	B	6-12"	187.0	8.0	Shot 1	-	Point	502 Liberty	Perez
502-2-5c	9/28/11	C	12-18"	59.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-3-1a	9/28/11	A	0-6"	5062.0	78.0	Shot 1	-	Point	502 Liberty	Perez
502-3-1a	9/28/11	A	0-6"	3805.0	61.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-3-1b	9/28/11	B	6-12"	377.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-3-1c	9/28/11	C	12-18"	919.0	18.0	Shot 1	-	Point	502 Liberty	Perez
502-3-1c	9/28/11	C	12-18"	1184.0	22.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-3-2a	9/28/11	A	0-6"	306.0	9.0	Shot 1	-	Point	502 Liberty	Perez
502-3-2b	9/28/11	B	6-12"	48.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-3-2c	9/28/11	C	12-18"	51.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-3-3a	9/28/11	A	0-6"	290.0	9.0	Shot 1	-	Point	502 Liberty	Perez
502-3-3b	9/28/11	B	6-12"	60.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-3-3c	9/28/11	C	12-18"	25.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-3-4a	9/28/11	A	0-6"	672.0	15.0	Shot 1	-	Point	502 Liberty	Perez
502-3-4b	9/28/11	B	6-12"	46.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-3-4c	9/28/11	C	12-18"	34.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-3-5a	9/28/11	A	0-6"	183.0	7.0	Shot 1	-	Point	502 Liberty	Perez
502-3-5b	9/28/11	B	6-12"	25.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-3-5c	9/28/11	C	12-18"	30.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-4-1a	9/28/11	A	0-6"	414.0	11.0	Shot 1	-	Point	502 Liberty	Perez
502-4-1a	9/28/11	A	0-6"	455.0	12.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-4-1b	9/28/11	B	6-12"	72.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-4-1c	9/28/11	C	12-18"	153.0	7.0	Shot 1	-	Point	502 Liberty	Perez
502-4-2a	9/28/11	A	0-6"	724.0	17.0	Shot 1	-	Point	502 Liberty	Perez
502-4-2b	9/28/11	B	6-12"	84.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-4-2c	9/28/11	C	12-18"	79.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-4-3a	9/28/11	A	0-6"	437.0	11.0	Shot 1	-	Point	502 Liberty	Perez
502-4-3b	9/28/11	B	6-12"	126.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-4-3c	9/28/11	C	12-18"	196.0	7.0	Shot 1	-	Point	502 Liberty	Perez
502-4-4a	9/28/11	A	0-6"	695.0	15.0	Shot 1	-	Point	502 Liberty	Perez
502-4-4a	9/28/11	A	0-6"	868.0	17.0	Shot 2 Dupe	-	Point	502 Liberty	Perez
502-4-4a	9/28/11	A	0-6"	1014.0	19.0	Shot 3 Dupe	-	Point	502 Liberty	Perez
502-4-4b	9/28/11	B	6-12"	266.0	9.0	Shot 1	-	Point	502 Liberty	Perez
502-4-4c	9/28/11	C	12-18"	105.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5a	9/27/11	A	0-6"	357.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5b	9/27/11	B	6-12"	123.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5c	9/27/11	C	12-18"	69.0	5.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5a	9/28/11	A	0-6"	381.0	10.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5b	9/28/11	B	6-12"	116.0	6.0	Shot 1	-	Point	502 Liberty	Perez
502-4-5c	9/28/11	C	12-18"	39.0	4.0	Shot 1	-	Point	502 Liberty	Perez
502-5-1	9/29/11	A	0-6"	501.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-2	9/29/11	A	0-6"	196.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-3-1	9/29/11	A	0-6"	122.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-3-2	9/29/11	A	0-6"	265.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-3-3	9/29/11	A	0-6"	252.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-4-1	9/29/11	A	0-6"	36.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-4-2	9/29/11	A	0-6"	<l0d	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-4-3	9/29/11	A	0-6"	33.0	-	Shot 1	-	Surface	502 Liberty	Perez
502-5-4-4	9/29/11	A	0-6"	564.0	-	Shot 1	-	Surface	502 Liberty	Perez

Table 1 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Shot	Lab Split	Type	Address	Owner
508-1-1a	9/28/11	A	0-6"	416.0	12.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-1b	9/28/11	B	6-12"	62.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-1c	9/28/11	C	12-18"	42.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-2a	9/28/11	A	0-6"	611.0	13.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-2b	9/28/11	B	6-12"	328.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn

Table 1 - Individual Soil Sample XRF Analysis

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Lab Split	Type	Address	Owner
508-1-2c	9/28/11	C	12-18"	170.0	7.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-3a	9/28/11	A	0-6"	527.0	12.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-3b	9/28/11	B	6-12"	92.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-3c	9/28/11	C	12-18"	81.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-4a	9/28/11	A	0-6"	212.0	8.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-4b	9/28/11	B	6-12"	85.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-4c	9/28/11	C	12-18"	31.0	4.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-5a	9/28/11	A	0-6"	511.0	12.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-5b	9/28/11	B	6-12"	79.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-1-5c	9/28/11	C	12-18"	63.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-1a	9/28/11	A	0-6"	65.0	4.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-1b	9/28/11	B	6-12"	1745.0	31.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-1c	9/28/11	C	12-18"	435.0	12.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-2a	9/28/11	A	0-6"	333.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-2b	9/28/11	B	6-12"	289.0	9.0	Shot 1	-	Point	508 Liberty	Blackburn
508-2-2c	9/28/11	C	12-18"	107.0	6.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-1a	9/28/11	A	0-6"	469.0	13.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-1b	9/28/11	B	6-12"	559.0	13.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-1c	9/28/11	C	12-18"	75.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-2a	9/28/11	A	0-6"	385.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-2b	9/28/11	B	6-12"	186.0	7.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-2c	9/28/11	C	12-18"	43.0	4.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-3a	9/28/11	A	0-6"	290.0	9.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-3b	9/28/11	B	6-12"	45.0	4.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-3c	9/28/11	C	12-18"	70.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-4a	9/28/11	A	0-6"	206.0	8.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-4b	9/28/11	B	6-12"	307.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-4c	9/28/11	C	12-18"	299.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-5a	9/28/11	A	0-6"	188.0	7.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-5b	9/28/11	B	6-12"	86.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-3-5c	9/28/11	C	12-18"	72.0	5.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-1a	9/28/11	A	0-6"	480.0	12.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-1b	9/28/11	B	6-12"	259.0	9.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-1c	9/28/11	C	12-18"	105.0	6.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-1c	9/28/11	C	12-18"	122.0	6.0	Shot 2 dupe	-	Point	508 Liberty	Blackburn
508-4-2a	9/28/11	A	0-6"	398.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-2b	9/28/11	B	6-12"	115.0	6.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-2c	9/28/11	C	12-18"	49.0	4.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-3a	9/28/11	A	0-6"	745.0	15.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-3b	9/28/11	B	6-12"	219.0	8.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-3c	9/28/11	C	12-18"	115.0	6.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-4a	9/28/11	A	0-6"	<LOD	13.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-4b	9/28/11	B	6-12"	1150.0	22.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-4c	9/28/11	C	12-18"	304.0	9.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-5a	9/28/11	A	0-6"	233.0	9.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-5b	9/28/11	B	6-12"	579.0	13.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-5c	9/28/11	C	12-18"	385.0	10.0	Shot 1	-	Point	508 Liberty	Blackburn
508-4-5c	9/28/11	C	12-18"	354.0	10.0	Shot 2 dupe	-	Point	508 Liberty	Blackburn
508-5-1	9/29/11	A	0-6"	666.0		Shot 1	-	Surface	508 Liberty	Blackburn
508-5-2-1	9/29/11	A	0-6"	655.0		Shot 1	-	Surface	508 Liberty	Blackburn
508-5-2-2	9/29/11	A	0-6"	380.0		Shot 1	-	Surface	508 Liberty	Blackburn
508-5-2-3	9/29/11	A	0-6"	245.0		Shot 1	-	Surface	508 Liberty	Blackburn

Table 2 - Soil Composite Sample XRF Analyses

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
500-1a	09/01/11	A	0-6"	1119.2	23.1	Shot 1	PNL	Composite	500 Coyle	Guidie
500-1a	09/01/11	A	0-6"	1255.7	24.9	Shot 2	PNL	Composite	500 Coyle	Guidie
500-1a	09/01/11	A	0-6"	1250.5	25.3	Shot 3	PNL	Composite	500 Coyle	Guidie
500-1b	09/01/11	B	6-12"	1023.2	20.1	Shot 1	-	Composite	500 Coyle	Guidie
500-1b	09/01/11	B	6-12"	922.9	20.8	Shot 2	-	Composite	500 Coyle	Guidie
500-1b	09/01/11	B	6-12"	1209.8	23.7	Shot 3	-	Composite	500 Coyle	Guidie
500-1c	09/01/11	C	12-18"	255.4	9.0	Shot 1	-	Composite	500 Coyle	Guidie
500-1c	09/01/11	C	12-18"	329.3	10.1	Shot 2	-	Composite	500 Coyle	Guidie
500-1c	09/01/11	C	12-18"	238.9	9.5	Shot 3	-	Composite	500 Coyle	Guidie
500-2a	09/01/11	A	0-6"	1013.4	21.6	Shot 1	-	Composite	500 Coyle	Guidie
500-2a	09/01/11	A	0-6"	1137.7	22.7	Shot 2	-	Composite	500 Coyle	Guidie
500-2a	09/01/11	A	0-6"	1150.2	21.1	Shot 3	-	Composite	500 Coyle	Guidie
500-2b	09/01/11	B	6-12"	812.4	18.5	Shot 1	PNL	Composite	500 Coyle	Guidie
500-2b	09/01/11	B	6-12"	1052.8	19.2	Shot 2	PNL	Composite	500 Coyle	Guidie
500-2b	09/01/11	B	6-12"	935.8	18.6	Shot 3	PNL	Composite	500 Coyle	Guidie
500-2c	09/01/11	C	12-18"	186.4	6.5	Shot 1	-	Composite	500 Coyle	Guidie
500-2c	09/01/11	C	12-18"	142.3	7.6	Shot 2	-	Composite	500 Coyle	Guidie
500-2c	09/01/11	C	12-18"	177.7	7.6	Shot 3	-	Composite	500 Coyle	Guidie
500-3a	09/01/11	A	0-6"	364.6	10.6	Shot 1	-	Composite	500 Coyle	Guidie
500-3a	09/01/11	A	0-6"	541.6	13.1	Shot 2	-	Composite	500 Coyle	Guidie
500-3a	09/01/11	A	0-6"	294.3	9.6	Shot 3	-	Composite	500 Coyle	Guidie
500-3b	09/01/11	B	6-12"	99.4	6.7	Shot 1	-	Composite	500 Coyle	Guidie
500-3b	09/01/11	B	6-12"	118.6	5.1	Shot 2	-	Composite	500 Coyle	Guidie
500-3b	09/01/11	B	6-12"	88.2	4.6	Shot 3	-	Composite	500 Coyle	Guidie
500-3c	09/01/11	C	12-18"	46.7	4.2	Shot 1	-	Composite	500 Coyle	Guidie
500-3c	09/01/11	C	12-18"	18.6	3.6	Shot 2	-	Composite	500 Coyle	Guidie
500-3c	09/01/11	C	12-18"	30.7	5.0	Shot 3	-	Composite	500 Coyle	Guidie

Table 2 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
502-1a	09/01/11	A	0-6"	1204.5	25.0	Shot 1	-	Composite	502 Coyle	Wood/Marler
502-1a	09/01/11	A	0-6"	885.3	20.4	Shot 2	-	Composite	502 Coyle	Wood/Marler
502-1a	09/01/11	A	0-6"	1165.9	24.5	Shot 3	-	Composite	502 Coyle	Wood/Marler
502-1b	09/01/11	B	6-12"	1171.9	23.8	Shot 1	-	Composite	502 Coyle	Wood/Marler
502-1b	09/01/11	B	6-12"	1119.9	23.2	Shot 2	-	Composite	502 Coyle	Wood/Marler
502-1b	09/01/11	B	6-12"	872.0	19.2	Shot 3	-	Composite	502 Coyle	Wood/Marler
502-1c	09/01/11	C	12-18"	230.0	9.1	Shot 1	PNL/KDHE	Composite	502 Coyle	Wood/Marler
502-1c	09/01/11	C	12-18"	317.9	9.9	Shot 2	PNL/KDHE	Composite	502 Coyle	Wood/Marler
502-1c	09/01/11	C	12-18"	317.4	9.8	Shot 3	PNL/KDHE	Composite	502 Coyle	Wood/Marler
502-2a	09/01/11	A	0-6"	1290.8	25.3	Shot 1	-	Composite	502 Coyle	Wood/Marler
502-2a	09/01/11	A	0-6"	1567.4	29.7	Shot 2	-	Composite	502 Coyle	Wood/Marler
502-2a	09/01/11	A	0-6"	1229.8	23.4	Shot 3	-	Composite	502 Coyle	Wood/Marler
502-2b	09/01/11	B	6-12"	920.9	19.0	Shot 1	-	Composite	502 Coyle	Wood/Marler
502-2b	09/01/11	B	6-12"	779.4	16.6	Shot 2	-	Composite	502 Coyle	Wood/Marler
502-2b	09/01/11	B	6-12"	876.7	18.1	Shot 3	-	Composite	502 Coyle	Wood/Marler
502-2c	09/01/11	C	12-18"	46.7	5.4	Shot 1	-	Composite	502 Coyle	Wood/Marler
502-2c	09/01/11	C	12-18"	46.5	5.3	Shot 2	-	Composite	502 Coyle	Wood/Marler
502-2c	09/01/11	C	12-18"	<LOD	14.4	Shot 3	-	Composite	502 Coyle	Wood/Marler
504-1a	09/01/11	A	0-6"	2956.0	52.3	Shot 1	-	Composite	502 Coyle	Wood/Marler
504-1a	09/01/11	A	0-6"	1849.5	35.0	Shot 2	-	Composite	502 Coyle	Wood/Marler
504-1a	09/01/11	A	0-6"	1789.2	34.6	Shot 3	-	Composite	502 Coyle	Wood/Marler
504-1b	09/01/11	B	6-12"	1573.0	33.6	Shot 1	PNL	Composite	502 Coyle	Wood/Marler
504-1b	09/01/11	B	6-12"	1858.5	38.3	Shot 2	PNL	Composite	502 Coyle	Wood/Marler
504-1b	09/01/11	B	6-12"	1804.2	34.0	Shot 3	PNL	Composite	502 Coyle	Wood/Marler
504-2a	09/01/11	A	0-6"	703.3	16.4	Shot 1	-	Composite	502 Coyle	Wood/Marler
504-2a	09/01/11	A	0-6"	789.4	17.4	Shot 2	-	Composite	502 Coyle	Wood/Marler
504-2a	09/01/11	A	0-6"	919.3	18.6	Shot 3	-	Composite	502 Coyle	Wood/Marler
504-2b	09/01/11	B	6-12"	767.9	21.2	Shot 1	PNL	Composite	502 Coyle	Wood/Marler
504-2b	09/01/11	B	6-12"	682.2	16.4	Shot 2	PNL	Composite	502 Coyle	Wood/Marler
504-2b	09/01/11	B	6-12"	774.6	17.0	Shot 3	PNL	Composite	502 Coyle	Wood/Marler
504-2c	09/01/11	C	12-18"	260.2	9.3	Shot 1	-	Composite	502 Coyle	Wood/Marler
504-2c	09/01/11	C	12-18"	290.4	7.4	Shot 2	-	Composite	502 Coyle	Wood/Marler
504-2c	09/01/11	C	12-18"	304.5	10.4	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-1a	09/01/11	A	0-6"	1513.0	28.7	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-1a	09/01/11	A	0-6"	1652.7	31.1	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-1a	09/01/11	A	0-6"	1870.9	34.5	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-1b	09/01/11	B	6-12"	1666.9	30.6	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-1b	09/01/11	B	6-12"	1423.3	24.7	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-1b	09/01/11	B	6-12"	1120.3	20.9	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-1c	09/01/11	C	12-18"	230.7	9.1	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-1c	09/01/11	C	12-18"	68.5	6.2	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-1c	09/01/11	C	12-18"	201.0	8.3	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-2a	09/01/11	A	0-6"	1902.6	33.7	Shot 1	PNL/KDHE	Composite	502 Coyle	Wood/Marler
506-2a	09/01/11	A	0-6"	1247.9	23.6	Shot 2	PNL/KDHE	Composite	502 Coyle	Wood/Marler
506-2a	09/01/11	A	0-6"	1956.5	34.2	Shot 3	PNL/KDHE	Composite	502 Coyle	Wood/Marler
506-2b	09/01/11	B	6-12"	1685.8	31.2	Shot 1	-	Composite	502 Coyle	Wood/Marler

Table 2 - Soil Composite Sample XRF Analyses

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
506-2b	09/01/11	B	6-12"	1843.0	34.4	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-2b	09/01/11	B	6-12"	1402.1	25.1	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-2c	09/01/11	C	12-18"	663.6	15.5	Shot 1	PNL	Composite	502 Coyle	Wood/Marler
506-2c	09/01/11	C	12-18"	453.7	11.9	Shot 2	PNL	Composite	502 Coyle	Wood/Marler
506-2c	09/01/11	C	12-18"	430.2	12.0	Shot 3	PNL	Composite	502 Coyle	Wood/Marler
506-3a	09/01/11	A	0-6"	49.2	5.3	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-3a	09/01/11	A	0-6"	59.7	5.4	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-3a	09/01/11	A	0-6"	37.4	5.3	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-3b	09/01/11	B	6-12"	<LOD	13.0	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-3b	09/01/11	B	6-12"	26.3	4.9	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-3b	09/01/11	B	6-12"	25.0	4.8	Shot 3	-	Composite	502 Coyle	Wood/Marler
506-3c	09/01/11	C	12-18"	<LOD	13.4	Shot 1	-	Composite	502 Coyle	Wood/Marler
506-3c	09/01/11	C	12-18"	<LOD	12.8	Shot 2	-	Composite	502 Coyle	Wood/Marler
506-3c	09/01/11	C	12-18"	25.2	5.0	Shot 3	-	Composite	502 Coyle	Wood/Marler

Table 2 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
501-1a	09/01/11	A	0-6"	635.3	11.9	Shot 1	-	Composite	501 Martin	Paige
501-1a	09/01/11	A	0-6"	588.7	10.2	Shot 2	-	Composite	501 Martin	Paige
501-1a	09/01/11	A	0-6"	601.1	10.5	Shot 3	-	Composite	501 Martin	Paige
501-1b	09/01/11	B	6-12"	216.1	7.0	Shot 1	-	Composite	501 Martin	Paige
501-1b	09/01/11	B	6-12"	255.0	8.7	Shot 2	-	Composite	501 Martin	Paige
501-1b	09/01/11	B	6-12"	259.4	8.7	Shot 3	-	Composite	501 Martin	Paige
501-1c	09/01/11	C	12-18"	30.0	5.4	Shot 1	-	Composite	501 Martin	Paige
501-1c	09/01/11	C	12-18"	14.7	4.7	Shot 2	-	Composite	501 Martin	Paige
501-1c	09/01/11	C	12-18"	<LOD	16.1	Shot 3	-	Composite	501 Martin	Paige
501-2a	09/01/11	A	0-6"	274.9	8.8	Shot 1	PNL/KDHE	Composite	501 Martin	Paige
501-2a	09/01/11	A	0-6"	326.8	10.0	Shot 2	PNL/KDHE	Composite	501 Martin	Paige
501-2a	09/01/11	A	0-6"	394.4	7.8	Shot 3	PNL/KDHE	Composite	501 Martin	Paige
501-2b	09/01/11	B	6-12"	16.5	4.7	Shot 1	PNL	Composite	501 Martin	Paige
501-2b	09/01/11	B	6-12"	40.2	4.2	Shot 2	PNL	Composite	501 Martin	Paige
501-2b	09/01/11	B	6-12"	31.0	4.9	Shot 3	PNL	Composite	501 Martin	Paige
501-2c	09/01/11	C	12-18"	<LOD	14.6	Shot 1	-	Composite	501 Martin	Paige
501-2c	09/01/11	C	12-18"	<LOD	14.8	Shot 2	-	Composite	501 Martin	Paige
501-2c	09/01/11	C	12-18"	<LOD	13.4	Shot 3	-	Composite	501 Martin	Paige
501-3a	09/01/11	A	0-6"	395.5	11.2	Shot 1	-	Composite	501 Martin	Paige
501-3a	09/01/11	A	0-6"	274.0	9.2	Shot 2	-	Composite	501 Martin	Paige
501-3a	09/01/11	A	0-6"	281.8	9.3	Shot 3	-	Composite	501 Martin	Paige
501-3b	09/01/11	B	6-12"	28.9	4.8	Shot 1	-	Composite	501 Martin	Paige
501-3b	09/01/11	B	6-12"	<LOD	12.6	Shot 2	-	Composite	501 Martin	Paige
501-3b	09/01/11	B	6-12"	<LOD	12.6	Shot 3	-	Composite	501 Martin	Paige
501-3c	09/01/11	C	12-18"	<LOD	13.2	Shot 1	-	Composite	501 Martin	Paige
501-3c	09/01/11	C	12-18"	<LOD	13.8	Shot 2	-	Composite	501 Martin	Paige
501-3c	09/01/11	C	12-18"	<LOD	13.2	Shot 3	-	Composite	501 Martin	Paige
501-4a	09/01/11	A	0-6"	285.0	8.1	Shot 1	-	Composite	501 Martin	Paige
501-4a	09/01/11	A	0-6"	255.4	8.7	Shot 2	-	Composite	501 Martin	Paige
501-4a	09/01/11	A	0-6"	283.8	9.4	Shot 3	-	Composite	501 Martin	Paige
501-4b	09/01/11	B	6-12"	24.9	4.8	Shot 1	-	Composite	501 Martin	Paige
501-4b	09/01/11	B	6-12"	17.4	4.8	Shot 2	-	Composite	501 Martin	Paige
501-4b	09/01/11	B	6-12"	<LOD	14.3	Shot 3	-	Composite	501 Martin	Paige
501-4c	09/01/11	C	12-18"	<LOD	13.8	Shot 1	-	Composite	501 Martin	Paige
501-4c	09/01/11	C	12-18"	<LOD	13.9	Shot 2	-	Composite	501 Martin	Paige
501-4c	09/01/11	C	12-18"	<LOD	14.1	Shot 3	-	Composite	501 Martin	Paige

Table 2 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
508-1a	09/01/11	A	0-6"	342.1	10.2	Shot 1	-	Composite	508 Coyle	Paige
508-1a	09/01/11	A	0-6"	318.7	10.0	Shot 2	-	Composite	508 Coyle	Paige
508-1a	09/01/11	A	0-6"	223.4	8.2	Shot 3	-	Composite	508 Coyle	Paige
508-1b	09/01/11	B	6-12"	43.0	5.1	Shot 1	-	Composite	508 Coyle	Paige
508-1b	09/01/11	B	6-12"	25.2	4.9	Shot 2	-	Composite	508 Coyle	Paige
508-1b	09/01/11	B	6-12"	21.4	4.9	Shot 3	-	Composite	508 Coyle	Paige
508-1c	09/01/11	C	12-18"	52.8	5.7	Shot 1	-	Composite	508 Coyle	Paige
508-1c	09/01/11	C	12-18"	<LOD	11.3	Shot 2	-	Composite	508 Coyle	Paige
508-1c	09/01/11	C	12-18"	<LOD	13.8	Shot 3	-	Composite	508 Coyle	Paige
508-2a	09/01/11	A	0-6"	143.7	7.5	Shot 1	PNL	Composite	508 Coyle	Paige
508-2a	09/01/11	A	0-6"	117.5	7.2	Shot 2	PNL	Composite	508 Coyle	Paige
508-2a	09/01/11	A	0-6"	129.3	7.5	Shot 3	PNL	Composite	508 Coyle	Paige
508-2b	09/01/11	B	6-12"	710.2	15.6	Shot 1	-	Composite	508 Coyle	Paige
508-2b	09/01/11	B	6-12"	330.7	10.2	Shot 2	-	Composite	508 Coyle	Paige
508-2b	09/01/11	B	6-12"	467.4	13.9	Shot 3	-	Composite	508 Coyle	Paige
508-2b	09/01/11	B	6-12"	637.8	13.3	Shot 4	-	Composite	508 Coyle	Paige
508-2b	09/01/11	B	6-12"	526.7	12.8	Shot 5	-	Composite	508 Coyle	Paige
508-2c	09/01/11	C	12-18"	108.5	6.5	Shot 1	-	Composite	508 Coyle	Paige
508-2c	09/01/11	C	12-18"	67.6	5.9	Shot 2	-	Composite	508 Coyle	Paige

Table 2 - Soil Composite Sample XRF Analyses

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
508-2c	09/01/11	C	12-18"	56.9	5.9	Shot 3	-	Composite	508 Coyle	Paige

Table 2 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dupe	Lab Split	Type	Address	Owner
508-1a	9/28/11	A	0-6"	536.0	12.0	Shot 1		Composite	508 Liberty	Blackburn
508-1a	9/28/11	A	0-6"	491.0	12.0	Shot 2		Composite	508 Liberty	Blackburn
508-1a	9/28/11	A	0-6"	496.0	12.0	Shot 3		Composite	508 Liberty	Blackburn
508-1b	9/28/11	B	6-12"	64.0	5.0	Shot 1		Composite	508 Liberty	Blackburn
508-1b	9/28/11	B	6-12"	143.0	7.0	Shot 2		Composite	508 Liberty	Blackburn
508-1b	9/28/11	B	6-12"	138.0	6.0	Shot 3		Composite	508 Liberty	Blackburn
508-1c	9/28/11	C	12-18"	57.0	5.0	Shot 1	LAB	Composite	508 Liberty	Blackburn
508-1c	9/28/11	C	12-18"	79.0	5.0	Shot 2	LAB	Composite	508 Liberty	Blackburn
508-1c	9/28/11	C	12-18"	85.0	6.0	Shot 3	LAB	Composite	508 Liberty	Blackburn
508-2a	9/28/11	A	0-6"	264.0	8.0	Shot 1	LAB	Composite	508 Liberty	Blackburn
508-2a	9/28/11	A	0-6"	282.0	9.0	Shot 2	LAB	Composite	508 Liberty	Blackburn
508-2a	9/28/11	A	0-6"	167.0	7.0	Shot 3	LAB	Composite	508 Liberty	Blackburn
508-2b	9/28/11	B	6-12"	736.0	16.0	Shot 1	LAB / KDHE	Composite	508 Liberty	Blackburn
508-2b	9/28/11	B	6-12"	1239.0	23.0	Shot 2	LAB / KDHE	Composite	508 Liberty	Blackburn
508-2b	9/28/11	B	6-12"	1805.0	33.0	Shot 3	LAB / KDHE	Composite	508 Liberty	Blackburn
508-2c	9/28/11	C	12-18"	381.0	11.0	Shot 1		Composite	508 Liberty	Blackburn
508-2c	9/28/11	C	12-18"	495.0	13.0	Shot 2		Composite	508 Liberty	Blackburn
508-2c	9/28/11	C	12-18"	442.0	12.0	Shot 3		Composite	508 Liberty	Blackburn
508-3a	9/28/11	A	0-6"	224.0	8.0	Shot 1	LAB	Composite	508 Liberty	Blackburn
508-3a	9/28/11	A	0-6"	286.0	10.0	Shot 2	LAB	Composite	508 Liberty	Blackburn
508-3a	9/28/11	A	0-6"	367.0	11.0	Shot 3	LAB	Composite	508 Liberty	Blackburn
508-3b	9/28/11	B	6-12"	176.0	7.0	Shot 1		Composite	508 Liberty	Blackburn
508-3b	9/28/11	B	6-12"	361.0	10.0	Shot 2		Composite	508 Liberty	Blackburn
508-3b	9/28/11	B	6-12"	151.0	7.0	Shot 3		Composite	508 Liberty	Blackburn
508-3c	9/28/11	C	12-18"	62.0	5.0	Shot 1		Composite	508 Liberty	Blackburn
508-3c	9/28/11	C	12-18"	58.0	4.0	Shot 2		Composite	508 Liberty	Blackburn
508-3c	9/28/11	C	12-18"	63.0	5.0	Shot 3		Composite	508 Liberty	Blackburn
508-4a	9/28/11	A	0-6"	361.0	10.0	Shot 1	LAB	Composite	508 Liberty	Blackburn
508-4a	9/28/11	A	0-6"	476.0	12.0	Shot 2	LAB	Composite	508 Liberty	Blackburn
508-4a	9/28/11	A	0-6"	291.0	10.0	Shot 3	LAB	Composite	508 Liberty	Blackburn
508-4b	9/28/11	B	6-12"	750.0	17.0	Shot 1		Composite	508 Liberty	Blackburn
508-4b	9/28/11	B	6-12"	439.0	11.0	Shot 2		Composite	508 Liberty	Blackburn
508-4b	9/28/11	B	6-12"	376.0	10.0	Shot 3		Composite	508 Liberty	Blackburn
508-4c	9/28/11	C	12-18"	270.0	9.0	Shot 1		Composite	508 Liberty	Blackburn
508-4c	9/28/11	C	12-18"	240.0	8.0	Shot 2		Composite	508 Liberty	Blackburn
508-4c	9/28/11	C	12-18"	264.0	9.0	Shot 3		Composite	508 Liberty	Blackburn

Table 2 Continued

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Shot	Lab Split	Type	Address	Owner
502-1a	9/27/11	A	0-6"	500.0	13.0	Shot 1	LAB	Composite	502 Liberty	Perez
502-1a	9/27/11	A	0-6"	452.0	11.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-1a	9/27/11	A	0-6"	517.0	12.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-1a	9/28/11	A	0-6"	793.0	17.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-1a	9/28/11	A	0-6"	703.0	15.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-1a	9/28/11	A	0-6"	581.0	13.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-1a	9/28/11	A	0-6"	491.0	13.0	Shot 7 Dupe		Composite	502 Liberty	Perez
502-1b	9/27/11	B	6-12"	147.0	7.0	Shot 1		Composite	502 Liberty	Perez
502-1b	9/28/11	B	6-12"	186.0	8.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-1b	9/28/11	B	6-12"	165.0	7.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-1b	9/28/11	B	6-12"	175.0	7.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-1b	9/28/11	B	6-12"	121.0	6.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-1c	9/27/11	C	12-18"	168.0	7.0	Shot 1		Composite	502 Liberty	Perez
502-1c	9/28/11	C	12-18"	191.0	8.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-1c	9/28/11	C	12-18"	123.0	6.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-1c	9/28/11	C	12-18"	154.0	7.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-1c	9/28/11	C	12-18"	143.0	7.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-2a	9/27/11	A	0-6"	361.0	10.0	Shot 1		Composite	502 Liberty	Perez
502-2a	9/27/11	A	0-6"	402.0	11.0	Shot 2 Dupe	LAB / KDHE	Composite	502 Liberty	Perez
502-2a	9/27/11	A	0-6"	382.0	11.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-2a	9/28/11	A	0-6"	317.0	9.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-2a	9/28/11	A	0-6"	400.0	10.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-2a	9/28/11	A	0-6"	397.0	10.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-2b	9/27/11	B	6-12"	185.0	7.0	Shot 1		Composite	502 Liberty	Perez
502-2b	9/27/11	B	6-12"	225.0	8.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-2b	9/27/11	B	6-12"	226.0	8.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-2b	9/28/11	B	6-12"	229.0	8.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-2b	9/28/11	B	6-12"	206.0	8.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-2b	9/28/11	B	6-12"	273.0	9.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-2c	9/27/11	C	12-18"	92.0	5.0	Shot 1		Composite	502 Liberty	Perez
502-2c	9/27/11	C	12-18"	83.0	5.0	Shot 2 Dupe		Composite	502 Liberty	Perez

Table 2 - Soil Composite Sample XRF Analyses

Sample ID	Date	Horizon	Depth	Pb	Pb +/-	Dup	Split	Type	Address	Owner
502-2c	9/27/11	C	12-18"	124.0	6.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-2c	9/28/11	C	12-18"	117.0	6.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-2c	9/28/11	C	12-18"	125.0	6.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-2c	9/28/11	C	12-18"	94.0	5.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-3a	9/27/11	A	0-6"	867.0	18.0	Shot 1	LAB	Composite	502 Liberty	Perez
502-3a	9/27/11	A	0-6"	1392.0	24.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-3a	9/27/11	A	0-6"	561.0	13.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-3a	9/27/11	A	0-6"	711.0	15.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-3a	9/28/11	A	0-6"	581.0	13.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-3a	9/28/11	A	0-6"	592.0	13.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-3a	9/28/11	A	0-6"	835.0	17.0	Shot 7 Dupe		Composite	502 Liberty	Perez
502-3a	9/28/11	A	0-6"	583.0	13.0	Shot 8 Dupe		Composite	502 Liberty	Perez
502-3b	9/27/11	B	6-12"	62.0	5.0	Shot 1		Composite	502 Liberty	Perez
502-3b	9/27/11	B	6-12"	145.0	7.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-3b	9/27/11	B	6-12"	71.0	5.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-3b	9/28/11	B	6-12"	106.0	6.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-3b	9/28/11	B	6-12"	78.0	5.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-3b	9/28/11	B	6-12"	150.0	6.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-3c	9/27/11	C	12-18"	242.0	9.0	Shot 1		Composite	502 Liberty	Perez
502-3c	9/27/11	C	12-18"	369.0	10.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-3c	9/27/11	C	12-18"	320.0	10.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-3c	9/28/11	C	12-18"	228.0	8.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-3c	9/28/11	C	12-18"	404.0	11.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-3c	9/28/11	C	12-18"	218.0	8.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-4a	9/27/11	A	0-6"	537.0	15.0	Shot 1	LAB / KDHE	Composite	502 Liberty	Perez
502-4a	9/27/11	A	0-6"	502.0	12.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-4a	9/27/11	A	0-6"	605.0	15.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-4a	9/28/11	A	0-6"	531.0	13.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-4a	9/28/11	A	0-6"	622.0	15.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-4a	9/28/11	A	0-6"	534.0	13.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-4b	9/27/11	B	6-12"	112.0	6.0	Shot 1	LAB	Composite	502 Liberty	Perez
502-4b	9/27/11	B	6-12"	79.0	5.0	Shot 2 Dupe		Composite	502 Liberty	Perez
502-4b	9/27/11	B	6-12"	87.0	5.0	Shot 3 Dupe		Composite	502 Liberty	Perez
502-4b	9/28/11	B	6-12"	93.0	5.0	Shot 4 Dupe		Composite	502 Liberty	Perez
502-4b	9/28/11	B	6-12"	92.0	5.0	Shot 5 Dupe		Composite	502 Liberty	Perez
502-4b	9/28/11	B	6-12"	78.0	5.0	Shot 6 Dupe		Composite	502 Liberty	Perez
502-4c	9/27/11	C	12-18"	69.0	5.0	Shot 1		Composite	502 Liberty	Perez
502-4c	9/27/11	C	12-18"	55.0	5.0	Shot 2		Composite	502 Liberty	Perez
502-4c	9/28/11	C	12-18"	122.0	6.0	Shot 1		Composite	502 Liberty	Perez
502-4c	9/28/11	C	12-18"	95.0	6.0	Shot 2		Composite	502 Liberty	Perez
502-4c	9/28/11	C	12-18"	72.0	5.0	Shot 3		Composite	502 Liberty	Perez

Table 3 - Averaged XRF Lead Results for Composite Samples (mg/kg)

Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
500-1a	A	0-6"	1208.3	PNL	500 Coyle	Guide
500-1b	B	6-12"	1052.0	-	500 Coyle	Guide
500-1c	C	12-18"	274.3	-	500 Coyle	Guide
500-2a	A	0-6"	1100.3	-	500 Coyle	Guide
500-2b	B	6-12"	933.7	PNL	500 Coyle	Guide
500-2c	C	12-18"	168.7	-	500 Coyle	Guide
500-3a	A	0-6"	400.3	-	500 Coyle	Guide
500-3b	B	6-12"	102.0	-	500 Coyle	Guide
500-3c	C	12-18"	32.3	-	500 Coyle	Guide
Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
501-1a	A	0-6"	608.3	-	501 Martin	Paige
501-1b	B	6-12"	243.3	-	501 Martin	Paige
501-1c	C	12-18"	20.3	-	501 Martin	Paige
501-2a	A	0-6"	332.0	PNL / KDHE	501 Martin	Paige
501-2b	B	6-12"	29.0	PNL	501 Martin	Paige
501-2c	C	12-18"	14.3	-	501 Martin	Paige
501-3a	A	0-6"	317.3	-	501 Martin	Paige
501-3b	B	6-12"	18.3	-	501 Martin	Paige
501-3c	C	12-18"	13.3	-	501 Martin	Paige
501-4a	A	0-6"	264.7	-	501 Martin	Paige
501-4b	B	6-12"	18.7	-	501 Martin	Paige
501-4c	C	12-18"	14.0	-	501 Martin	Paige
508-1a	A	0-6"	294.7	-	508 Coyle	Paige
508-1b	B	6-12"	29.7	-	508 Coyle	Paige
508-1c	C	12-18"	26.0	-	508 Coyle	Paige
508-2a	A	0-6"	130.0	PNL	508 Coyle	Paige
508-2b	B	6-12"	534.6	-	508 Coyle	Paige
508-2c	C	12-18"	78.0	-	508 Coyle	Paige
Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
502-1a	A	0-6"	1085.3	-	502 Coyle	Wood/Marler
502-1b	B	6-12"	1054.7	-	502 Coyle	Wood/Marler
502-1c	C	12-18"	288.3	PNL / KDHE	502 Coyle	Wood/Marler
502-2a	A	0-6"	1362.7	-	502 Coyle	Wood/Marler
502-2b	B	6-12"	859.0	-	502 Coyle	Wood/Marler
502-2c	C	12-18"	35.7	-	502 Coyle	Wood/Marler
504-1a	A	0-6"	2198.3	-	502 Coyle	Wood/Marler
504-1b	B	6-12"	1745.0	PNL	502 Coyle	Wood/Marler
504-1c	C	12-18"	NS	PNL	502 Coyle	Wood/Marler
504-2a	A	0-6"	803.7	-	502 Coyle	Wood/Marler
504-2b	B	6-12"	741.7	-	502 Coyle	Wood/Marler
504-2c	C	12-18"	285.0	-	502 Coyle	Wood/Marler
506-1a	A	0-6"	1679.0	-	502 Coyle	Wood/Marler
506-1b	B	6-12"	1403.3	-	502 Coyle	Wood/Marler
506-1c	C	12-18"	167.0	-	502 Coyle	Wood/Marler

Table 3 - Averaged XRF Lead Results for Composite Samples (mg/kg)

Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
506-2a	A	0-6"	1702.3	PNL / KDHE	502 Coyle	Wood/Marler
506-2b	B	6-12"	1643.7	-	502 Coyle	Wood/Marler
506-2c	C	12-18"	516.0	PNL	502 Coyle	Wood/Marler
506-3a	A	0-6"	48.7	-	502 Coyle	Wood/Marler
506-3b	B	6-12"	21.3	-	502 Coyle	Wood/Marler
506-3c	C	12-18"	17.0	-	502 Coyle	Wood/Marler
Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
502-1a	A	0-6"	576.7	PNL	502 Liberty	Perez
502-1b	B	6-12"	158.8	-	502 Liberty	Perez
502-1c	C	12-18"	155.8	-	502 Liberty	Perez
502-2a	A	0-6"	376.5	PNL / KDHE	502 Liberty	Perez
502-2b	B	6-12"	224.0	-	502 Liberty	Perez
502-2c	C	12-18"	105.8	-	502 Liberty	Perez
502-3a	A	0-6"	765.3	PNL	502 Liberty	Perez
502-3b	B	6-12"	102.0	-	502 Liberty	Perez
502-3c	C	12-18"	296.8	-	502 Liberty	Perez
502-4a	A	0-6"	555.2	PNL / KDHE	502 Liberty	Perez
502-4b	B	6-12"	90.2	PNL	502 Liberty	Perez
502-4c	C	12-18"	82.6	-	502 Liberty	Perez
Sample ID	Horizon	Depth	Composite Avg Pb	Lab Split	Address	Owner
508-1a	A	0-6"	507.7	-	508 Liberty	Blackburn
508-1b	B	6-12"	115.0	-	508 Liberty	Blackburn
508-1c	C	12-18"	73.7	PNL	508 Liberty	Blackburn
508-2a	A	0-6"	237.7	PNL	508 Liberty	Blackburn
508-2b	B	6-12"	1,260.0	PNL / KDHE	508 Liberty	Blackburn
508-2c	C	12-18"	439.3	-	508 Liberty	Blackburn
508-3a	A	0-6"	292.3	PNL	508 Liberty	Blackburn
508-3b	B	6-12"	229.3	-	508 Liberty	Blackburn
508-3c	C	12-18"	61.0	-	508 Liberty	Blackburn
508-4a	A	0-6"	376.0	PNL	508 Liberty	Blackburn
508-4b	B	6-12"	521.7	-	508 Liberty	Blackburn
508-4c	C	12-18"	258.0	-	508 Liberty	Blackburn

TABLE 4. Field and Laboratory Result Comparison

Sample ID	Horizon	Depth	Pb (XRF)	Pb mg/kg	As (XRF)	As mg/kg	Cd (XRF)	Cd mg/kg	% Moisture	Property
500-1 (0-6)	A	0-6	1208.5	738.0	57.7	20.0	55.9	41.3	2.7	500 Coyle
500-2 (6-12)	B	6-12	933.7	645.0	70.8	24.0	54.8	25.2	10.2	500 Coyle
501-2 (0-6)	A	0-6	332.0	408.0		17.4		17.7	10.8	501 Martin
501-2 (6-12)	B	6-12	29.2	79.0		13.4		8.2	11.0	502 Coyle
502-1 (12-18)	C	12-18	288.4	273.0		15.4	44.8	18.6	14.7	502 Coyle
502-1A-COMP-LIB	A	0-6	576.7	561.0	48.0	18.0		20.5	17.7	502 Liberty
502-1A COMP LIB DUP 1	A	0-6	576.7	609.0	48.0	18.1		19.2	17.3	502 Liberty
502-2A-COMP-LIB	A	0-6	379.6	417.0	29.0	15.2		20.0	15.8	502 Liberty
502-3A-COMP-LIB	A	0-6	765.3	499.0	60.0	13.6		16.9	20.0	502 Liberty
502-4A-COMP-LIB	A	0-6	555.2	472.0	48.5	22.5		19.2	18.7	502 Liberty
502-4B-COMP-LIB	B	6-12	90.2	163.0	14.2	13.8		12.3	17.9	502 Liberty
504-1 (6-12)	B	6-12	1745.2	1990.0	84.7	27.5	161.1	123.0	5.5	504 Coyle
504-2 (6-12)	B	6-12	741.6	562.0	45.9	21.9	67.7	44.7	13.8	504 Coyle
506-2 (0-6)	A	0-6	1702.3	1690.0	79.1	29.7	81.8	55.5	9.6	506 Coyle
506-2 (12-18)	C	12-18	515.8	644.0	41.6	15.5	52.0	43.2	16.6	506 Coyle
508-2 (0-6)	A	0-6	130.2	181.0		14.1		12.7	8.9	508 Coyle
508-1C-COMP-LIB	C	12-18	73.7	52.2	18.3	15.8		7.9	19.0	508 Liberty
508-2A-COMP-LIB	A	0-6	237.7	155.0	28.5	9.4		7.2	17.5	508 Liberty
508-2B-COMP-LIB	B	6-12	1260.0	714.0	82.5	13.5		16.3	15.8	508 Liberty
508-3A-COMP-LIB	A	0-6	292.3	265.0	50.0	40.6		11.5	12.6	508 Liberty
508-4A-COMP-LIB	A	0-6	376.0	294.0	26.0	13.0		13.7	12.2	508 Liberty

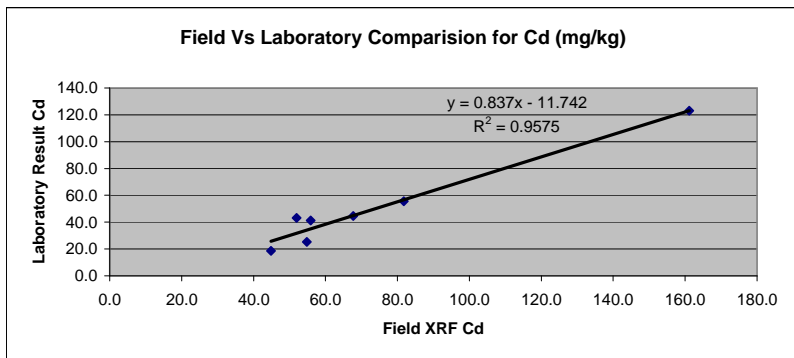
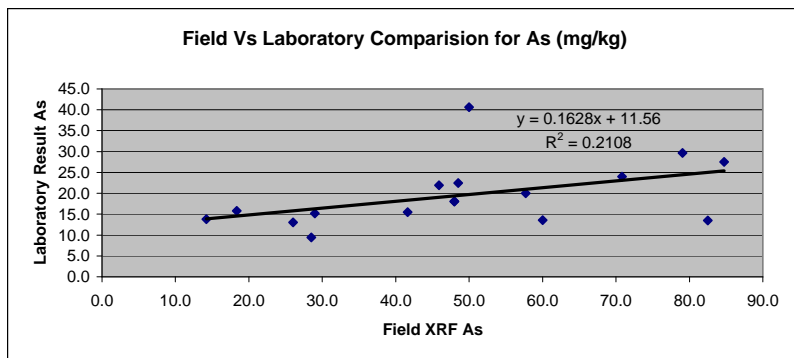
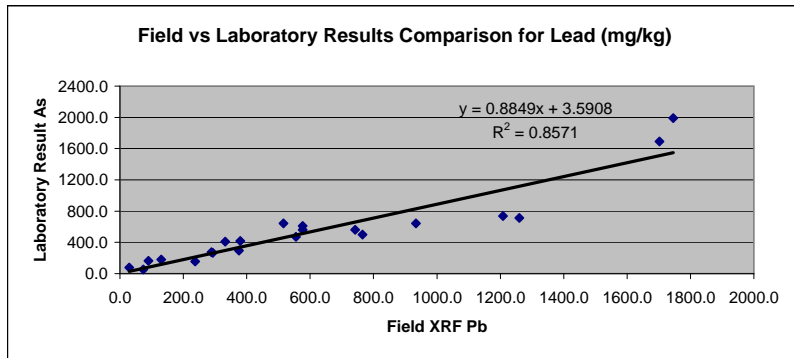


Table 5 - Laboratory Sample Results

Date	Sample ID	Pb mg/kg	As mg/kg	Cd mg/kg	% Moisture	Property
9/1/2011	500-1 (0-6)	738.0	20.0	41.3	2.7	500 Coyle
9/1/2011	500-2 (6-12)	645.0	24.0	25.2	10.2	500 Coyle
9/1/2011	501-2 (0-6)	408.0	17.4	17.7	10.8	501 Martin
9/1/2011	501-2 (6-12)	79.0	13.4	8.2	11.0	502 Coyle
9/1/2011	502-1 (12-18)	273.0	15.4	18.6	14.7	502 Coyle
9/27/2011	502-1A-COMP-LIB	561.0	18.0	20.5	17.7	502 Liberty
9/27/2011	502-1A COMP LIB DUP 1	609.0	18.1	19.2	17.3	502 Liberty
9/27/2011	502-2A-COMP-LIB	417.0	15.2	20.0	15.8	502 Liberty
9/27/2011	502-3A-COMP-LIB	499.0	13.6	16.9	20.0	502 Liberty
9/27/2011	502-4A-COMP-LIB	472.0	22.5	19.2	18.7	502 Liberty
9/27/2011	502-4B-COMP-LIB	163.0	13.8	12.3	17.9	502 Liberty
9/1/2011	504-1 (6-12)	1990.0	27.5	123.0	5.5	504 Coyle
9/1/2011	504-2 (6-12)	562.0	21.9	44.7	13.8	504 Coyle
9/1/2011	506-2 (0-6)	1690.0	29.7	55.5	9.6	506 Coyle
9/1/2011	506-2 (12-18)	644.0	15.5	43.2	16.6	506 Coyle
9/1/2011	508-2 (0-6)	181.0	14.1	12.7	8.9	508 Coyle
9/27/2011	508-1C-COMP-LIB	52.2	15.8	7.9	19.0	508 Liberty
9/27/2011	508-2A-COMP-LIB	155.0	9.4	7.2	17.5	508 Liberty
9/27/2011	508-2B-COMP-LIB	714.0	13.5	16.3	15.8	508 Liberty
9/27/2011	508-3A-COMP-LIB	265.0	40.6	11.5	12.6	508 Liberty
9/27/2011	508-4A-COMP-LIB	294.0	13.0	13.7	12.2	508 Liberty

Table 6 - In-place Impacted Soil Volume Estimate > 400 mg/kg Pb

(West of Coyle St)

Acres	Horizon	Depth	Area (sf)	Thick (ft)	Vol (cy)	Property
0.112	A	0-6"	4878.72	0.5	90	508 Coyle, 501 Martin
0.0183	A	0-6"	797.148	0.5	15	508 Coyle, 501 Martin
0.0093	B	6-12"	405.108	0.5	8	508 Coyle, 501 Martin
0.0186	B	6-12"	810.216	0.5	15	508 Coyle, 501 Martin
0.2234	A	0-6"	9731.304	0.5	180	502-508 Coyle
0.2028	B	6-12"	8833.968	0.5	164	502-508 Coyle
0.1544	C	12-18"	6725.664	0.5	125	502-508 Coyle
0.0093	D	18-24"	405.108	0.5	8	502-508 Coyle
0.0894	A	0-6"	3894.264	0.5	72	500 Coyle
0.0666	B	6-12"	2901.096	0.5	54	500 Coyle
0.0192	C	12-18"	836.352	0.5	15	500 Coyle
0.0129	C	12-18"	561.924	0.5	10	500 Coyle
0.0093	D	18-24"	405.108	0.5	8	500 Coyle
Total cy					763	

(East of Coyle St)

Acres	Horizon	Depth	Area (sf)	Thick (ft)	Vol (cy)	Property
0.183	A	0-6"	7971.48	0.5	148	502 Liberty
0.0464	A	0-6"	2021.184	0.5	37	502 Liberty
0.0105	A	0-6"	457.38	0.5	8	502 Liberty
0.0253	A	0-6"	1102.068	0.5	20	502 Liberty
0.0145	B	6-12"	631.62	0.5	12	502 Liberty
0.0145	C	12-18"	631.62	0.5	12	502 Liberty
0.238	A	0-6"	10367.28	0.5	192	508 Liberty
0.0145	A	0-6"	631.62	0.5	12	508 Liberty
0.04434	B	6-12"	1931.45	0.5	36	508 Liberty
0.0145	B	6-12"	631.62	0.5	12	508 Liberty
0.0145	B	6-12"	631.62	0.5	12	508 Liberty
0.0145	C	12-18"	631.62	0.5	12	508 Liberty
Total cy					512	

Table 7 - XRF Quality Control Summary / NIST Standard

Date	XRF Pb mg/kg	Pb +/-	NIST 2702 Pb	
			mg/kg	Percent Diff (PD)
09/27/11	139	8	132.8	4.7
09/28/11	125	8	132.8	5.9
09/28/11	123	8	132.8	7.4
09/28/11	113	8	132.8	14.9
09/28/11	130	8	132.8	2.1
09/28/11	116	7	132.8	12.7
09/28/11	117	7	132.8	11.9
09/28/11	115	7	132.8	13.4
09/28/11	129	8	132.8	2.9
09/28/11	118	7	132.8	11.1
09/28/11	122	8	132.8	8.1
09/28/11	124	8	132.8	6.6
09/28/11	121	7	132.8	8.9
09/28/11	118	7	132.8	11.1
09/27/11	127	8	132.8	4.4
09/27/11	118	8	132.8	11.1
09/27/11	112	7	132.8	15.7
Average PD				9.0

Date	XRF Pb mg/kg	Pb +/-	NIST 2781 Pb	
			mg/kg	Percent Diff (PD)
09/27/11	194	7	202.1	4.0
09/28/11	188	7	202.1	7.0
09/28/11	186	7	202.1	8.0
09/28/11	187	7	202.1	7.5
09/28/11	194	7	202.1	4.0
09/28/11	189	7	202.1	6.5
09/28/11	188	7	202.1	7.0
09/28/11	188	7	202.1	7.0
09/28/11	193	7	202.1	4.5
09/28/11	197	7	202.1	2.5
09/28/11	176	7	202.1	12.9
09/28/11	199	7	202.1	1.5
09/28/11	189	7	202.1	6.5
09/28/11	195	7	202.1	3.5
09/27/11	190	7	202.1	6.0
09/27/11	185	7	202.1	8.5
09/27/11	191	7	202.1	5.5
09/27/11	180	7	202.1	10.9
Average PD =				6.3

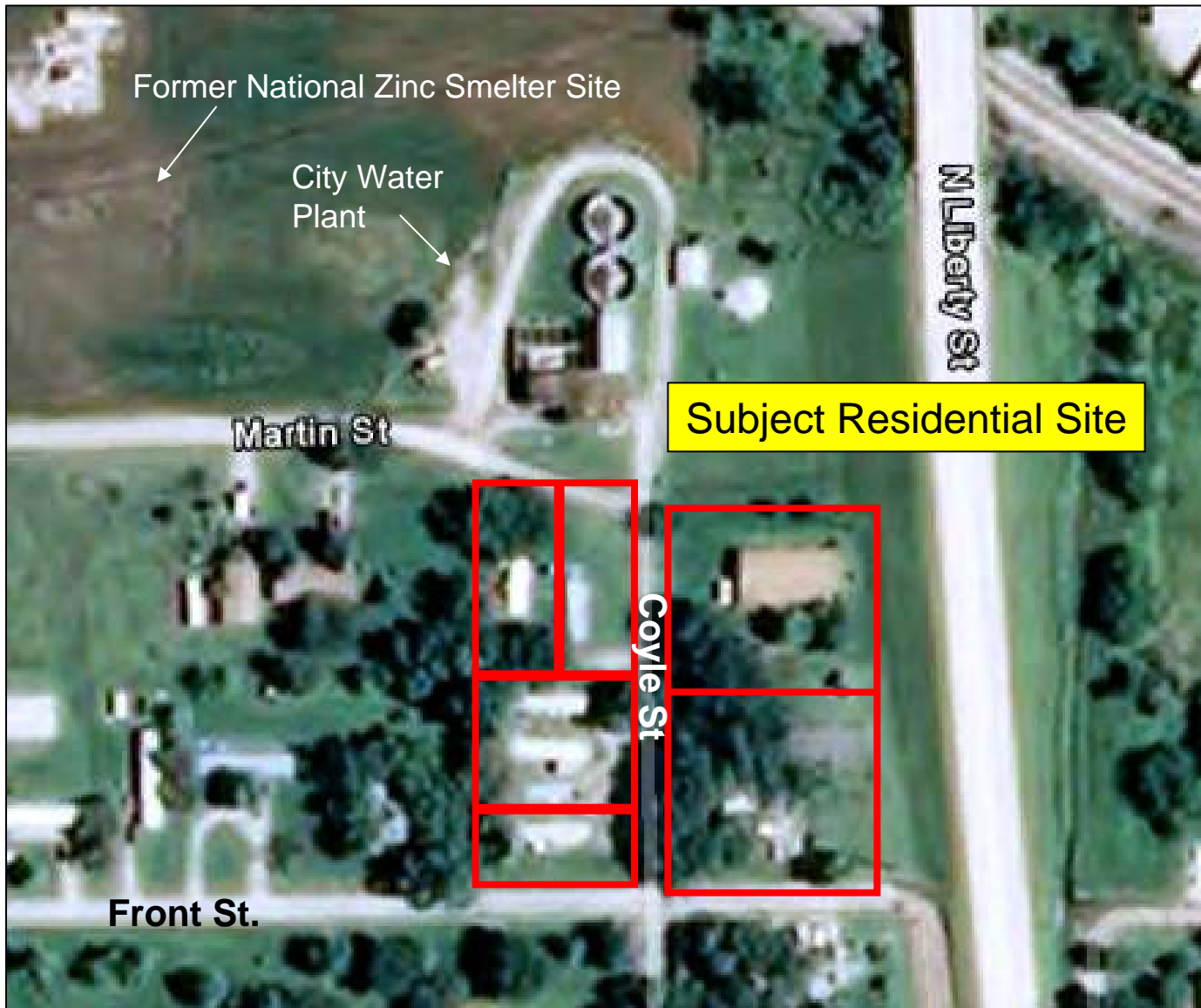
Target Average PD = 20% Pass

Table 8 - Field Duplicate Relative Standard Deviation

Sample	First Value mg/kg	Second Value mg/kg	Standard Dev.	Relative Std. Dev.	Location
502-2-2a	476.0	450.0	13.0	2.8	Liberty
502-3-1	919.0	1184.0	132.5	12.6	Liberty
502-4-5c	69.0	39.0	15.0	27.8	Liberty
508-4-1	105.0	122.0	8.5	7.5	Liberty
508-4-5	385.0	354.0	15.5	4.2	Liberty
NIST 2701	189.0	195.0	3.0	1.6	
NIST 2802	122.0	124.0	1.0	0.8	
500-2-4d	226.0	333.0	53.5	19.1	Coyle
501-1-1b	649.0	582.0	33.5	5.4	Martin
502-4-5c	66.2	63.3	1.4	2.2	Coyle
506-1-3c	602.0	724.0	61.0	9.2	Coyle
506-2-2a	4272.0	4931.0	329.5	7.2	Coyle
508-2-4b	1776.0	1450.0	163.0	10.1	Coyle
Average RSD =				8.5	

Target Average RSD = 20 Pass

FIGURES



N



Site Center Coordinate
 37.273267 N
 95.557329 W

150 Feet



Site Location

Site Location Map

Figure 1



Physical Features Map

Figure 2



HAND AUGER SAMPLING OF 504-506 COYLE ST.



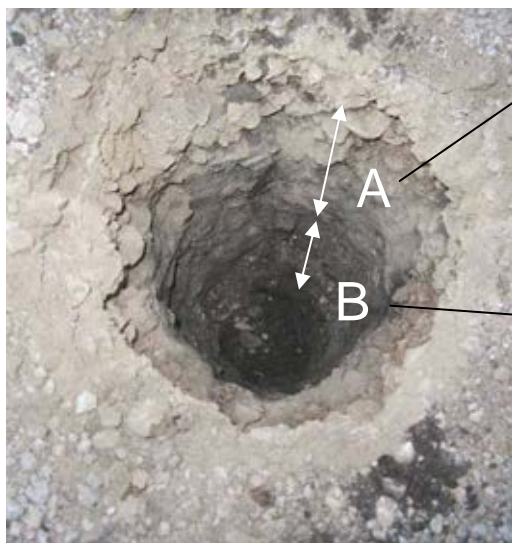
0-6" (A)

CRUSHED STONE

6-12" (B)

SOIL & SLAG

COARSE SLAG FRAGMENTS

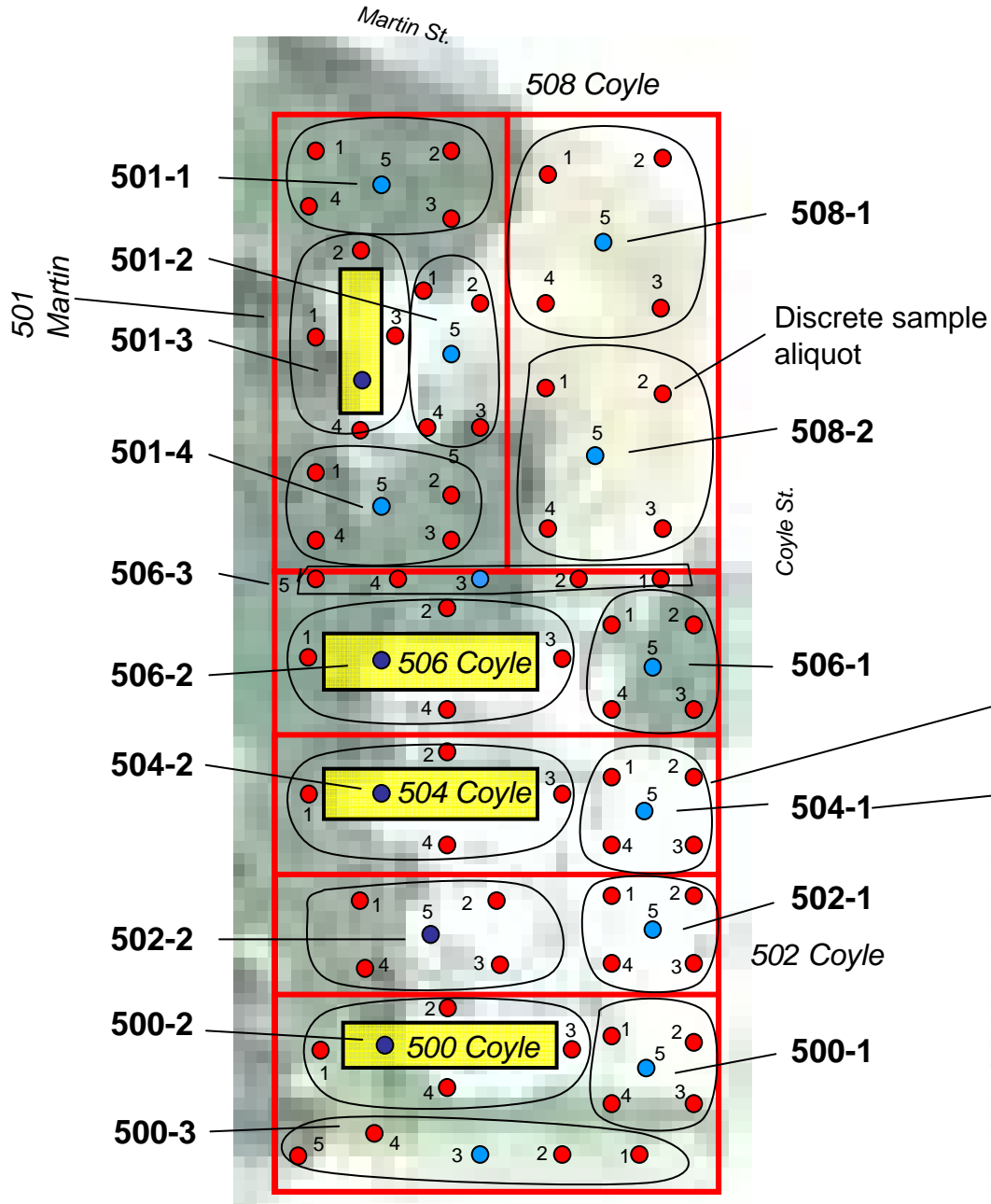


4-6" HARD
COMPACTED
CRUSHED
LIMESTONE ROCK
SURFACE (CLEAN)

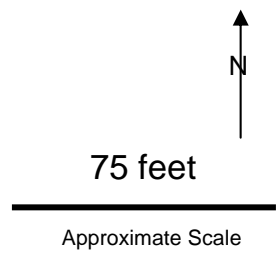
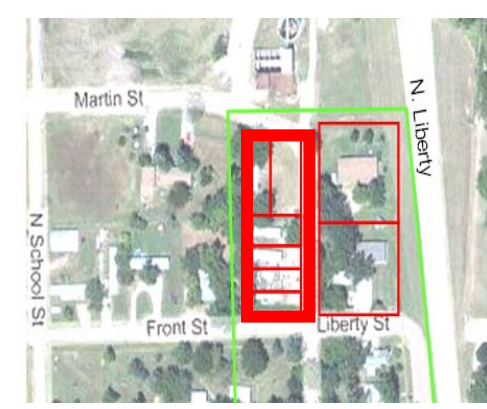
4-6" COARSE AND
FINE SLAG WITH SOIL
EXPOSED BELOW
LIMESTONE

Typical Auger Sampling for Cherryvale Residential Assessment

Figure 3



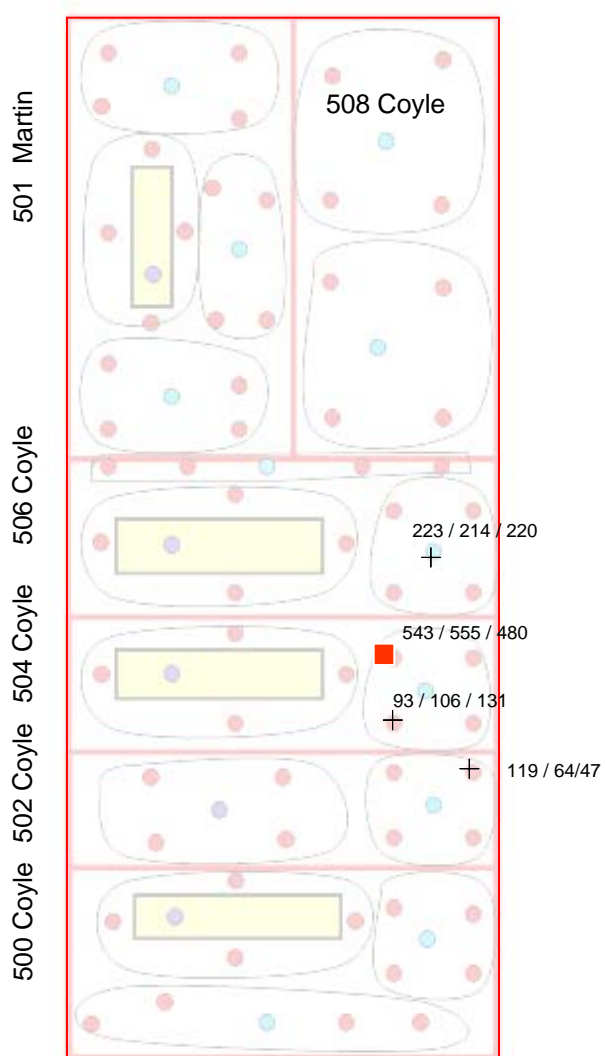
- ### Explanation
- Soil screening sample with point number.
 - 5- Point Composite Point
 - 4-Point Composite Point
 - 504 Building w/ Address
 - Approximate Parcel Boundary



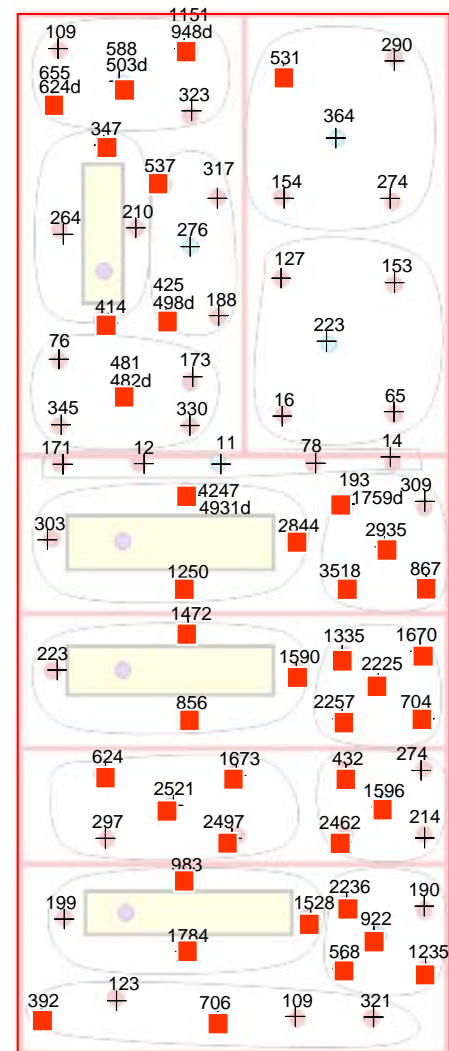
ALL LOCATIONS APPROXIMATE

Parcel Location

Field Sample Numbering and Location Map 500-508 Coyle, 501 Martin St.		Figure 4
Residential Assessment Cherryvale, Kansas	9-21-11	



Surface 1-Inch Sample (Sample Bulk / -10+35 mesh / -35 mesh)



A - 0-6 Inch Sample

+ Analysis Point with Result

■ Analysis Point > 400 mg/kg, d=duplicate

Results below detection shown at detection limit.

**Field XRF Results for Lead in Soil (mg/kg)
500-508 Coyle, 501 Martin St.**

Figure 5

Residential Assessment
Cherryvale, Kansas

9-28-11



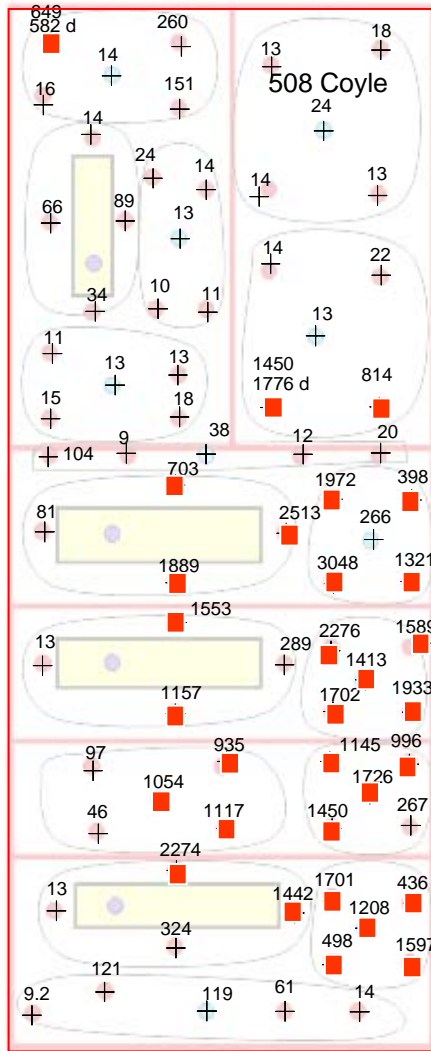
501 Martin

506 Coyle

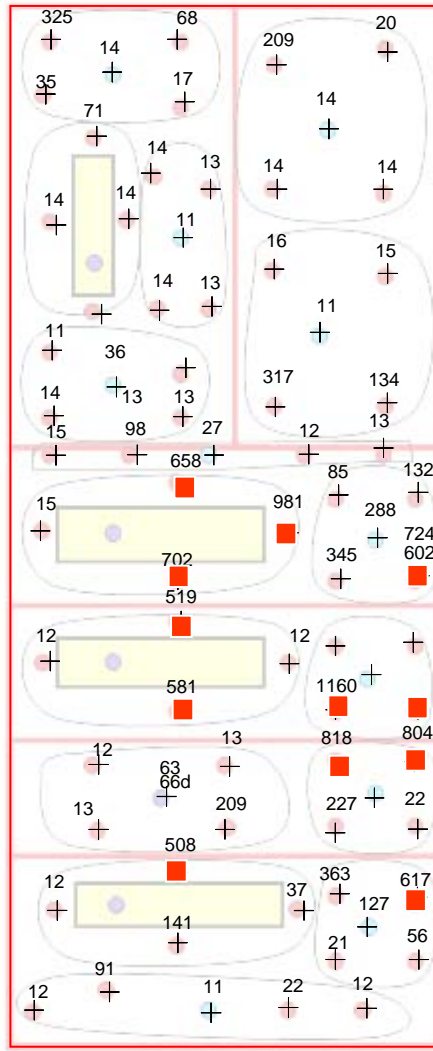
504 Coyle

502 Coyle

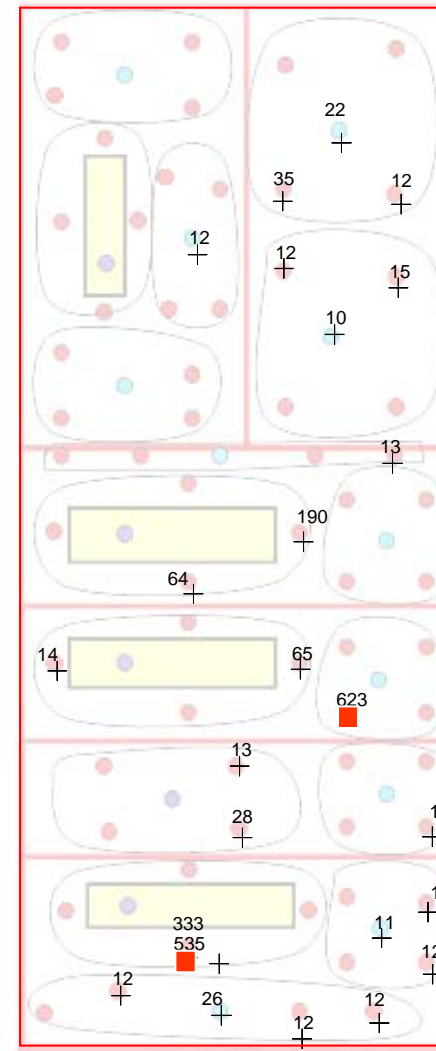
500 Coyle



B - 6-12 Inch Sample



C - 12-18 Inch Sample



D - 18-24 Inch Sample

+ Analysis Point with Result



Analysis Point > 400 mg/kg (d = duplicate)

Results below detection shown at detection limit.

Field XRF Results for Lead in Soil (mg/kg) (Continued)
500-508 Coyle, 501 Martin St.

Figure 6



+ Analysis Point with Result

■ Analysis Point > 400 mg/kg

Average Field XRF Soil Sample Composite Results for Lead by Depth (mg/kg) 500-508 Coyle, 501 Martin St.		Figure 7
Residential Assessment Cherryvale, Kansas	9-21-11	

501-2 (0-6 INCHES)		
Pb	As	Cd
408 (332)	17.4	17.7

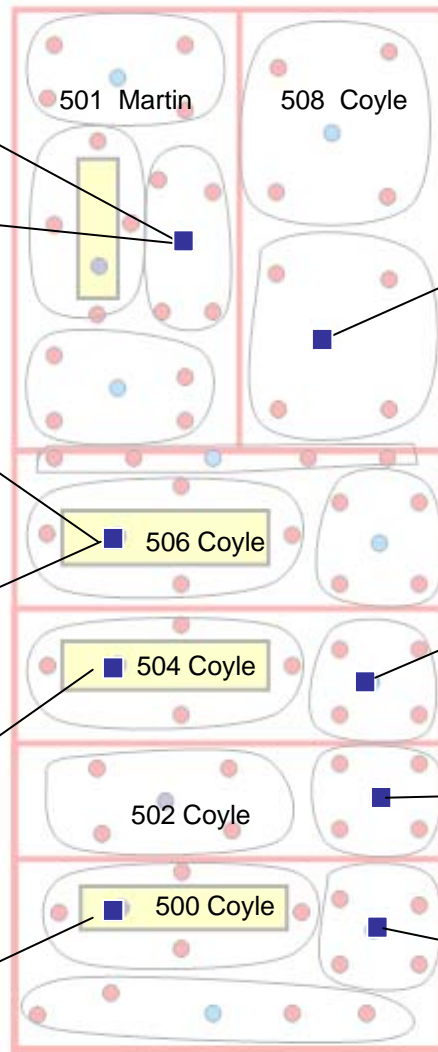
501-2 (6-12 INCHES)		
Pb	As	Cd
79 (29)	13.4	8.2

506-2 (0-6 INCHES)		
Pb	As	Cd
1690 (1702)	29.7	55.5

506-2 (12-18 INCHES)		
Pb	As	Cd
644 (516)	15.5	43.2

504-2 (6-12 INCHES)		
Pb	As	Cd
562 (741)	21.9	44.7

500-2 (6-12 INCHES)		
Pb	As	Cd
645 (933)	24	25.2



508-2 (0-6 INCHES)		
Pb	As	Cd
181 (535)	14.1	12.7

504-1 (6-12 INCHES)		
Pb	As	Cd
1990 (741)	27.5	123

502-1 (12-18 INCHES)		
Pb	As	Cd
273 (288)	15.4	18.6

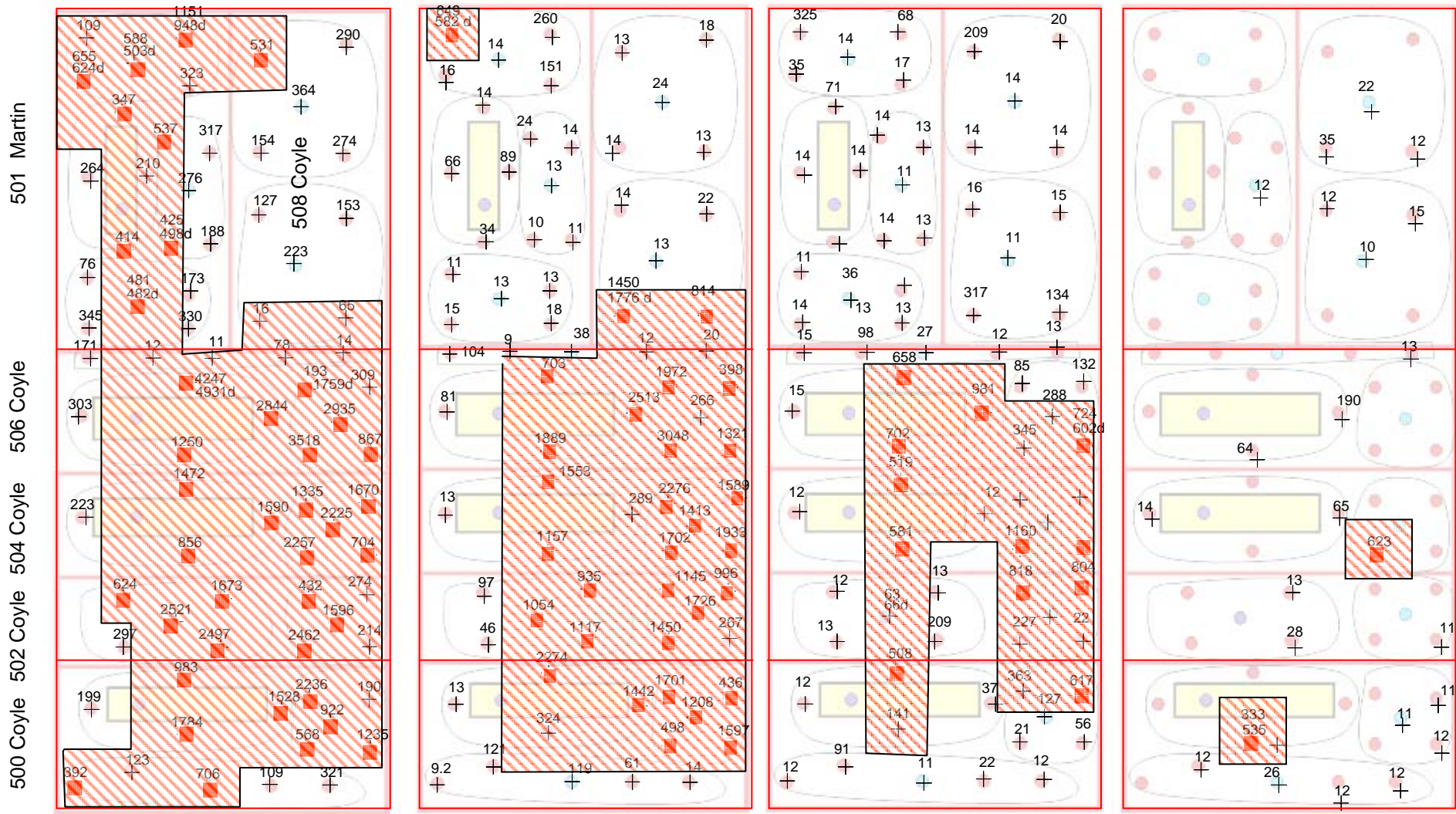
500-1 (0-6 INCHES)		
Pb	As	Cd
738 (1208)	20	41.3

Residential Benchmark		
Pb	As	Cd
400	11.3	39

■ Analysis Point with Value (XRF Average in Parenthesis)

Laboratory Result XRF Average

Soil Composite Sample Laboratory Results for Lead, Arsenic and Cadmium (mg/kg) 500-508 Coyle, 501 Martin St.		Figure 8
Residential Assessment Cherryvale, Kansas	9-21-11	



A - 0-6 Inch Sample

B - 6-12 Inch Sample

C - 12-18 Inch Sample

D - 18-24 Inch Sample

+ Analysis Point with Result

■ Analysis Point > 400 mg/kg

▨ Potential Remedial Target

**Areas with Lead in Soil Above 400 mg/kg
500-508 Coyle St, 501 Martin St.**

Figure 9

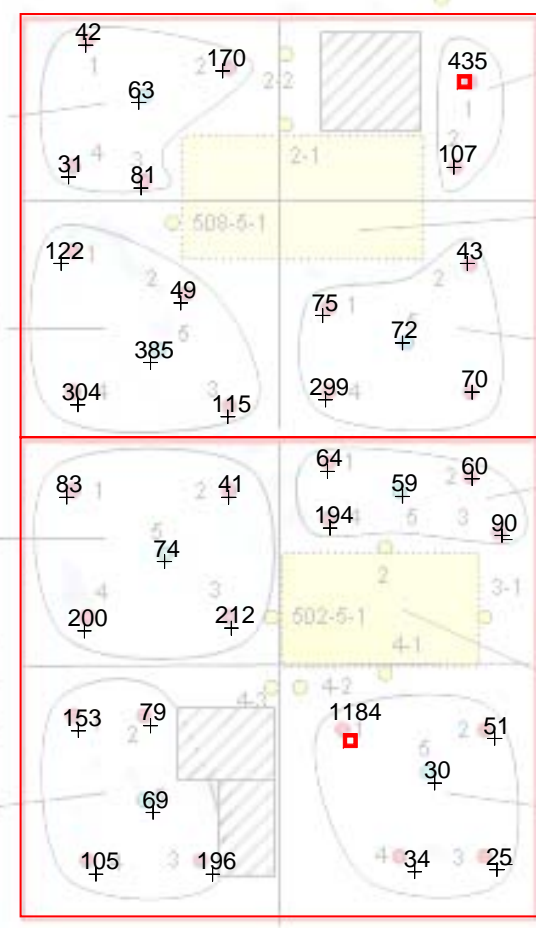
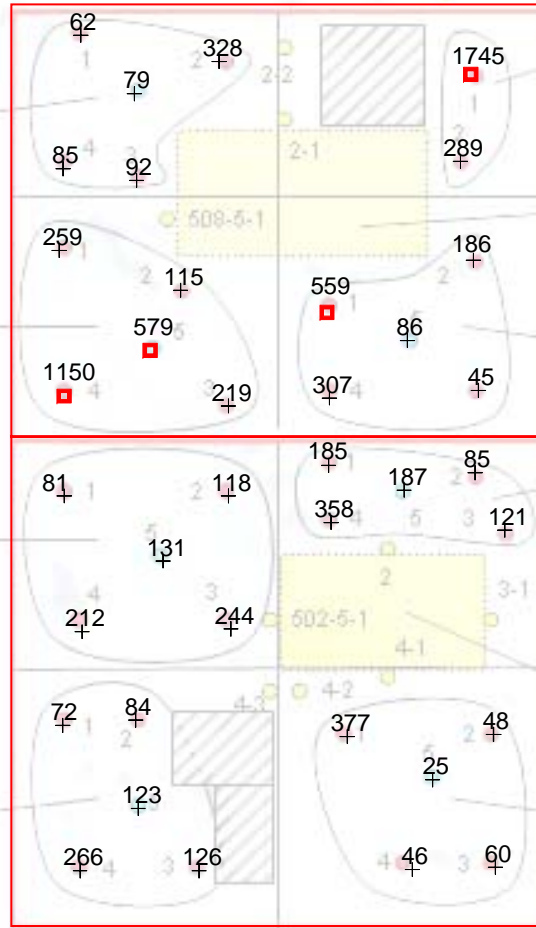
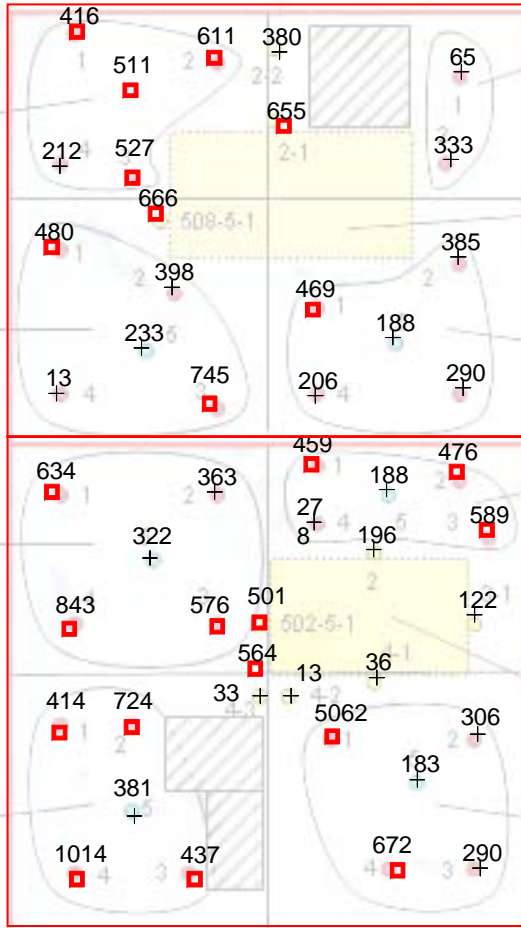


Field Sample Number and Location Map 502 – 508 Liberty Street		Figure 10
Residential Assessment Cherryvale, Kansas	10-20-11	

508 Liberty

245

+ 2-3



502 Liberty

A - 0-6 Inch Sample

B - 6-12 Inch Sample

C - 12-18 Inch Sample

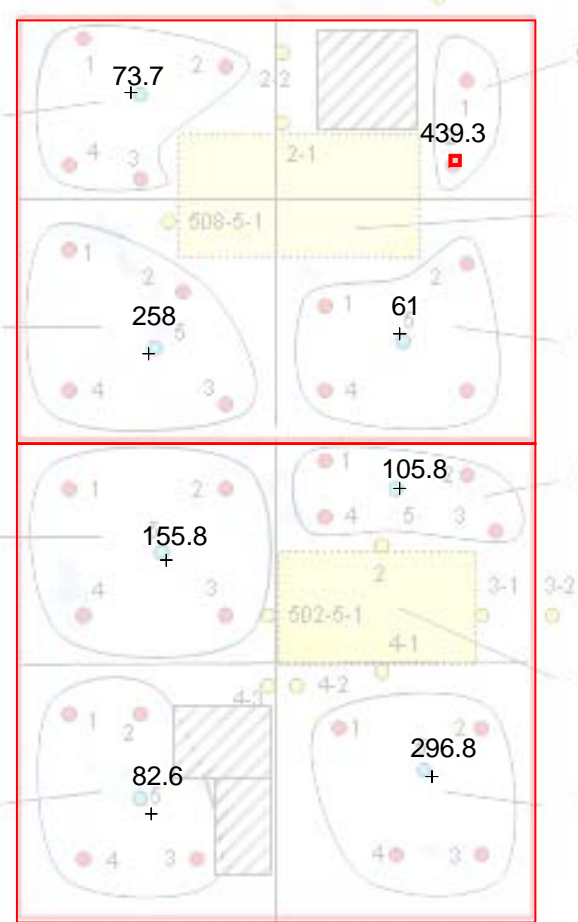
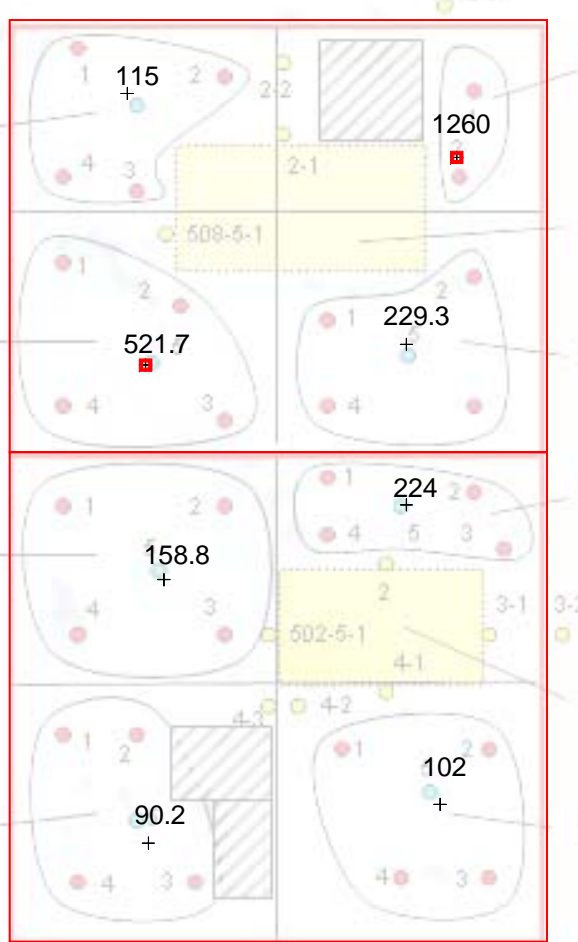
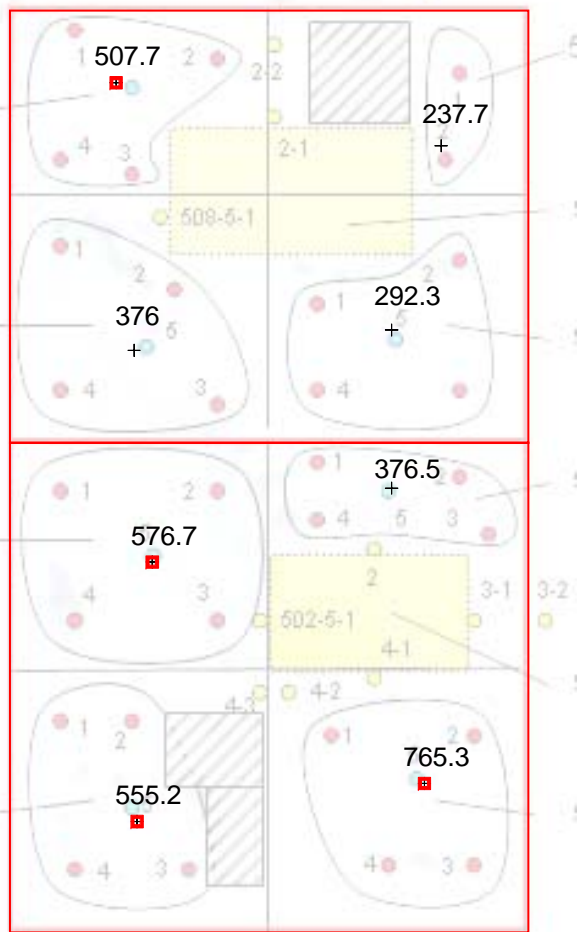
+ Analysis Point with Result

■ Analysis Point > 400 mg/kg

**Lead in Soil Field XRF Results by Depth (mg/kg)
502 – 508 Liberty Street**

Figure 11

508 Liberty



502 Liberty

A - 0-6 Inch Composite

B - 6-12 Inch Composite

C - 12-18 Inch Composite

+ Analysis Point with Result

■ Analysis Point > 400 mg/kg

Average Field XRF Composite Results for Lead in Soil by Depth (mg/kg) 502 – 508 Liberty Street		Figure 12
Residential Assessment Cherryvale, Kansas	10-19-11	

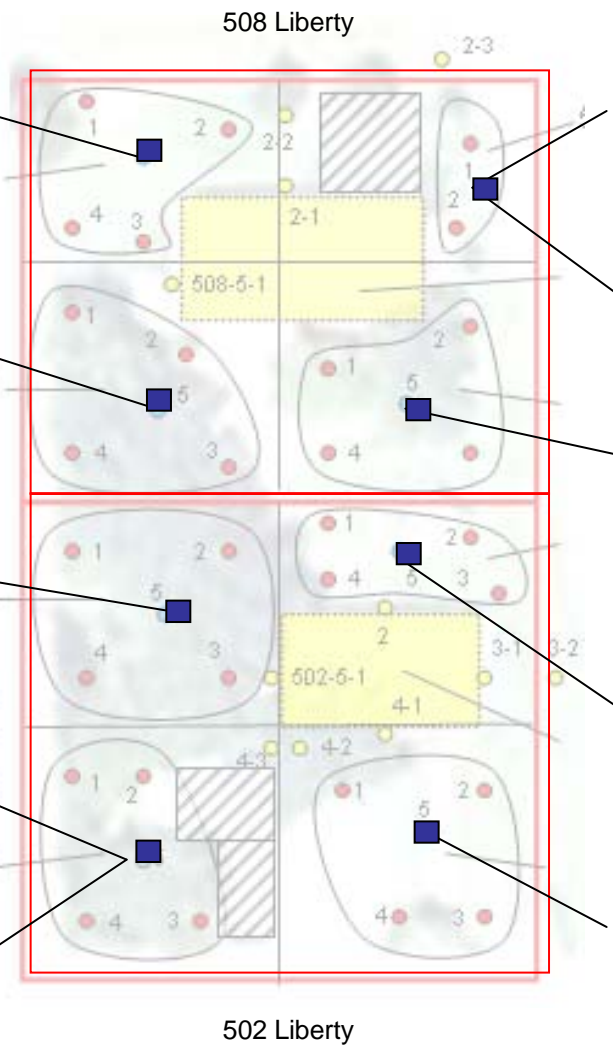
508-1 (18-24 INCHES)		
Pb	As	Cd
52.2 (73.7)	15.8	7.9

508-4 (0-6 INCHES)		
Pb	As	Cd
294 (376.0)	13	13.7

502-1 (0-6 INCHES)		
Pb	As	Cd
561 (576.7)	18	20.5

502-4 (0-6 INCHES)		
Pb	As	Cd
472 (555.2)	22.5	19.2

502-4 (6-12 INCHES)		
Pb	As	Cd
163 (90.2)	13.8	12.3



508-2 (0-6 INCHES)		
Pb	As	Cd
155 (237.7)	9.4	7.2

508-2 (6-12 INCHES)		
Pb	As	Cd
714 (1260)	13.5	16.3

508-3 (0-6 INCHES)		
Pb	As	Cd
265 (292.3)	40.6	11.5

502-2 (0-6 INCHES)		
Pb	As	Cd
417 (376.5)	15.2	20

502-3 (0-6 INCHES)		
Pb	As	Cd
499 (765.3)	13.6	16.9

Residential Benchmark		
Pb	As	Cd
400	11.3	39

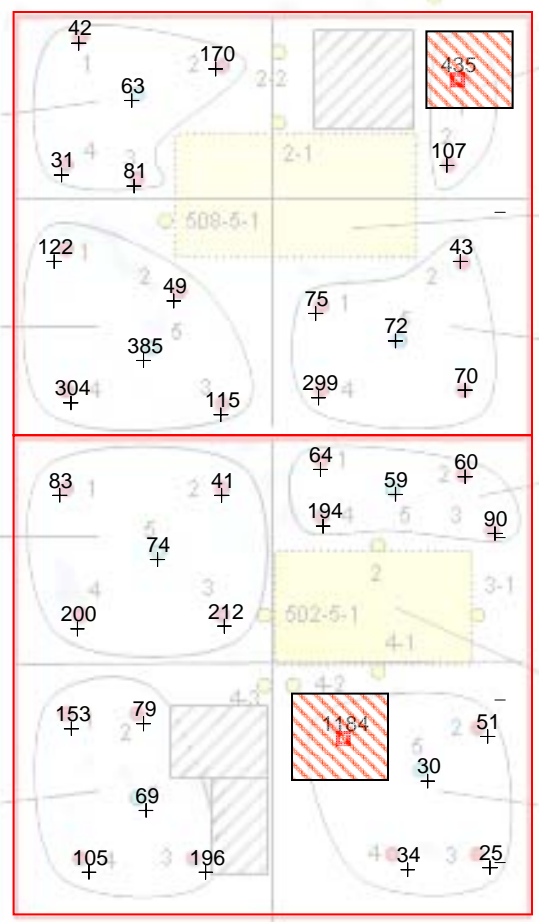
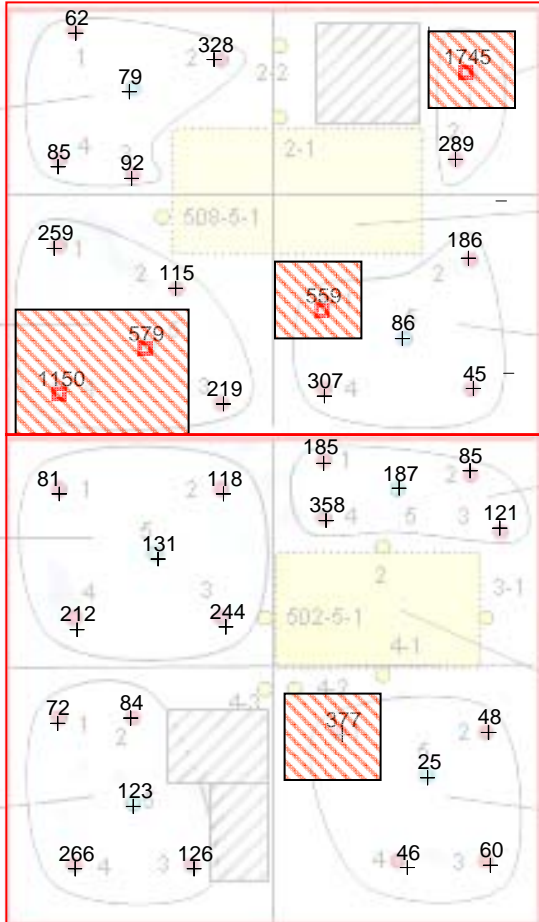
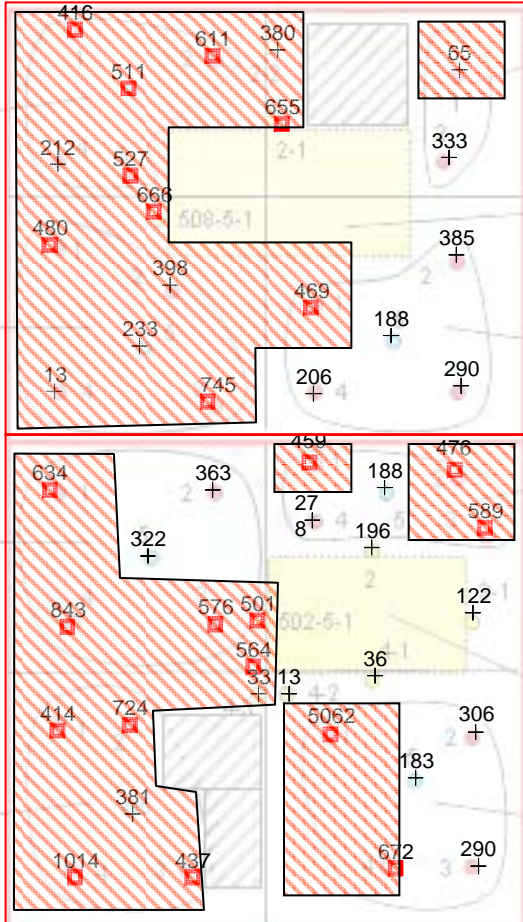
■ Analysis point with result value mg/kg

Laboratory Result XRF Average

Soil Sample Composite Laboratory Results for Lead, Arsenic and Cadmium 502 – 508 Liberty Street		Figure 13
Residential Assessment Cherryvale, Kansas	10-19-11	

508 Liberty

245
+ 2-3



502 Liberty

A - 0-6 Inch Composite

B - 6-12 Inch Composite

C - 12-18 Inch Composite

+ Analysis Point with Result

■ Analysis Point > 400 mg/kg

▨ Potential Remedial Target

**Areas with Lead in Soil Above 400 mg/kg
502 – 508 Liberty Street**

Figure 14

ATTACHMENT 1



Sample Condition Upon Receipt

Client Name: Project Navigator Project # 60105570

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 4861 4657 0550 Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Optional	
Proj. Due Date:	<u>2/15</u>
Proj. Name:	<u>Natural Zinc</u>

Packing Material: Bubble Wrap Bubble Bags Foam None Other notebook paper Soil Sampling

Thermometer Used: T-191 / T-194 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature: 20.3
Temperature should be above freezing to 6°C

Date and Initials of person examining contents: <u>[Signature] 2/6/14</u>

	Comments:
Chain of Custody present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace containers used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
-Includes date/time/ID/analyses Matrix: <u>SL</u>	
All containers needing preservation have been checked. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
All containers needing preservation are found to be in compliance with EPA recommendation. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed _____ Lot # of added preservative _____
Trip Blank present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Pace Trip Blank lot # (if purchased): _____	
Headspace in VOA vials (>6mm): <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State: _____

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

September 13, 2011

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: National Zinc Soil Sampling
Pace Project No.: 60105570

Dear Mark Landress:

Enclosed are the analytical results for sample(s) received by the laboratory on September 06, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,



Jamie Slade

jamie.slade@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



CERTIFICATIONS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

A2LA Certification #: 2456.01

Arkansas Certification #: 05-008-0

Illinois Certification #: 001191

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-08-TX

Utah Certification #: 9135995665

REPORT OF LABORATORY ANALYSIS

SAMPLE SUMMARY

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60105570001	506-2 (0-6)	Solid	09/01/11 17:00	09/06/11 11:30
60105570002	501-2 (0-6)	Solid	09/01/11 17:03	09/06/11 11:30
60105570003	502-1 (12-18)	Solid	09/01/11 17:09	09/06/11 11:30
60105570004	506-2 (12-18)	Solid	09/01/11 18:45	09/06/11 11:30
60105570005	508-2 (0-6)	Solid	09/01/11 18:47	09/06/11 11:30
60105570006	501-2 (6-12)	Solid	09/01/11 18:49	09/06/11 11:30
60105570007	504-2 (6-12)	Solid	09/01/11 18:52	09/06/11 11:30
60105570008	504-1 (6-12)	Solid	09/01/11 18:55	09/06/11 11:30
60105570009	500-1 (0-6)	Solid	09/01/11 18:57	09/06/11 11:30
60105570010	500-2 (6-12)	Solid	09/01/11 19:00	09/06/11 11:30

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: National Zinc Soil Sampling
Pace Project No.: 60105570

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60105570001	506-2 (0-6)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570002	501-2 (0-6)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570003	502-1 (12-18)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570004	506-2 (12-18)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570005	508-2 (0-6)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570006	501-2 (6-12)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570007	504-2 (6-12)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570008	504-1 (6-12)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570009	500-1 (0-6)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60105570010	500-2 (6-12)	EPA 6010	SMW	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 506-2 (0-6) **Lab ID: 60105570001** Collected: 09/01/11 17:00 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	29.7	mg/kg	0.91	1	09/09/11 08:47	09/13/11 14:01	7440-38-2	
Cadmium	55.5	mg/kg	0.45	1	09/09/11 08:47	09/13/11 14:01	7440-43-9	
Lead	1690	mg/kg	0.45	1	09/09/11 08:47	09/13/11 14:01	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.6	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 501-2 (0-6) **Lab ID: 60105570002** Collected: 09/01/11 17:03 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	17.4	mg/kg	0.98	1	09/09/11 08:47	09/13/11 14:03	7440-38-2	
Cadmium	17.7	mg/kg	0.49	1	09/09/11 08:47	09/13/11 14:03	7440-43-9	
Lead	408	mg/kg	0.49	1	09/09/11 08:47	09/13/11 14:03	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	10.8	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 502-1 (12-18) **Lab ID: 60105570003** Collected: 09/01/11 17:09 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	15.4	mg/kg	1.1	1	09/09/11 08:47	09/13/11 14:05	7440-38-2	
Cadmium	18.6	mg/kg	0.54	1	09/09/11 08:47	09/13/11 14:05	7440-43-9	
Lead	273	mg/kg	0.54	1	09/09/11 08:47	09/13/11 14:05	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	14.7	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 506-2 (12-18) **Lab ID: 60105570004** Collected: 09/01/11 18:45 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	15.5	mg/kg	1.0	1	09/09/11 08:47	09/13/11 14:07	7440-38-2	
Cadmium	43.2	mg/kg	0.51	1	09/09/11 08:47	09/13/11 14:07	7440-43-9	
Lead	644	mg/kg	0.51	1	09/09/11 08:47	09/13/11 14:07	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	16.6	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 508-2 (0-6) **Lab ID: 60105570005** Collected: 09/01/11 18:47 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	14.1	mg/kg	0.89	1	09/09/11 08:47	09/13/11 14:10	7440-38-2	
Cadmium	12.7	mg/kg	0.45	1	09/09/11 08:47	09/13/11 14:10	7440-43-9	
Lead	181	mg/kg	0.45	1	09/09/11 08:47	09/13/11 14:10	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	8.9	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 501-2 (6-12) **Lab ID: 60105570006** Collected: 09/01/11 18:49 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	13.4	mg/kg	1.0	1	09/09/11 08:47	09/13/11 14:12	7440-38-2	
Cadmium	8.2	mg/kg	0.52	1	09/09/11 08:47	09/13/11 14:12	7440-43-9	
Lead	79.0	mg/kg	0.52	1	09/09/11 08:47	09/13/11 14:12	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	11.0	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 504-2 (6-12) **Lab ID: 60105570007** Collected: 09/01/11 18:52 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	21.9	mg/kg	1.1	1	09/09/11 08:47	09/13/11 14:14	7440-38-2	
Cadmium	44.7	mg/kg	0.55	1	09/09/11 08:47	09/13/11 14:14	7440-43-9	
Lead	562	mg/kg	1.1	2	09/09/11 08:47	09/13/11 14:55	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	13.8	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 504-1 (6-12) **Lab ID: 60105570008** Collected: 09/01/11 18:55 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	27.5	mg/kg	0.91	1	09/09/11 08:47	09/13/11 14:16	7440-38-2	
Cadmium	123	mg/kg	0.46	1	09/09/11 08:47	09/13/11 14:16	7440-43-9	
Lead	1990	mg/kg	0.91	2	09/09/11 08:47	09/13/11 14:57	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	5.5	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 500-1 (0-6) **Lab ID: 60105570009** Collected: 09/01/11 18:57 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	20.0	mg/kg	0.77	1	09/09/11 08:47	09/13/11 14:19	7440-38-2	
Cadmium	41.3	mg/kg	0.39	1	09/09/11 08:47	09/13/11 14:19	7440-43-9	
Lead	738	mg/kg	0.39	1	09/09/11 08:47	09/13/11 14:19	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	2.7	%	0.50	1		09/12/11 00:00		

ANALYTICAL RESULTS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Sample: 500-2 (6-12) **Lab ID: 60105570010** Collected: 09/01/11 19:00 Received: 09/06/11 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	24.0	mg/kg	0.78	1	09/09/11 08:47	09/13/11 14:25	7440-38-2	
Cadmium	25.2	mg/kg	0.39	1	09/09/11 08:47	09/13/11 14:25	7440-43-9	
Lead	645	mg/kg	0.39	1	09/09/11 08:47	09/13/11 14:25	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	10.2	%	0.50	1		09/12/11 00:00		

QUALIFIERS

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: National Zinc Soil Sampling

Pace Project No.: 60105570

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60105570001	506-2 (0-6)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570002	501-2 (0-6)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570003	502-1 (12-18)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570004	506-2 (12-18)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570005	508-2 (0-6)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570006	501-2 (6-12)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570007	504-2 (6-12)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570008	504-1 (6-12)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570009	500-1 (0-6)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570010	500-2 (6-12)	EPA 3050	MPRP/15240	EPA 6010	ICP/13267
60105570001	506-2 (0-6)	ASTM D2974-87	PMST/6494		
60105570002	501-2 (0-6)	ASTM D2974-87	PMST/6494		
60105570003	502-1 (12-18)	ASTM D2974-87	PMST/6494		
60105570004	506-2 (12-18)	ASTM D2974-87	PMST/6494		
60105570005	508-2 (0-6)	ASTM D2974-87	PMST/6494		
60105570006	501-2 (6-12)	ASTM D2974-87	PMST/6494		
60105570007	504-2 (6-12)	ASTM D2974-87	PMST/6494		
60105570008	504-1 (6-12)	ASTM D2974-87	PMST/6494		
60105570009	500-1 (0-6)	ASTM D2974-87	PMST/6494		
60105570010	500-2 (6-12)	ASTM D2974-87	PMST/6494		



Sample Condition Upon Receipt

Client Name: Project Navigator Project # 000107279

Courier: [X] Fed Ex [] UPS [] USPS [] Client [] Commercial [] Pace [] Other
Tracking #: 85956965748 Pace Shipping Label Used? [] Yes [X] No
Custody Seal on Cooler/Box Present: [X] Yes [] No Seals intact: [X] Yes [] No
Packing Material: [] Bubble Wrap [X] Bubble Bags [] Foam [] None [] Other

Optional
Proj. Due Date: 10/11
Proj. Name:

Thermometer Used: (T-191) / T-194 Type of Ice: (Wet) Blue None [] Samples on ice, cooling process has begun

Cooler Temperature: 4.2
Temperature should be above freezing to 6°C

Date and Initials of person examining contents: PV 9-30-11

Table with 17 rows and 2 columns. Row 1: Chain of Custody present: [X] Yes [] No [] N/A 1. Row 2: Chain of Custody filled out: [X] Yes [] No [] N/A 2. Row 3: Chain of Custody relinquished: [X] Yes [] No [] N/A 3. Row 4: Sampler name & signature on COC: [X] Yes [] No [] N/A 4. Row 5: Samples arrived within holding time: [X] Yes [] No [] N/A 5. Row 6: Short Hold Time analyses (<72hr): [] Yes [X] No [] N/A 6. Row 7: Rush Turn Around Time requested: [] Yes [X] No [] N/A 7. Row 8: Sufficient volume: [X] Yes [] No [] N/A 8. Row 9: Correct containers used: [X] Yes [] No [] N/A 9. Row 10: Containers intact: [X] Yes [] No [] N/A 10. Row 11: Unpreserved 5035A soils frozen w/in 48hrs? [] Yes [] No [X] N/A 11. Row 12: Filtered volume received for dissolved tests [] Yes [] No [X] N/A 12. Row 13: Sample labels match COC: [X] Yes [] No [] N/A 13. Row 14: All containers needing preservation have been checked. [] Yes [] No [X] N/A 14. Row 15: Trip Blank present: [] Yes [] No [X] N/A 15. Row 16: Headspace in VOA vials (>6mm): [] Yes [] No [X] N/A 16. Row 17: Project sampled in USDA Regulated Area: [] Yes [] No [X] N/A 17. List State: []

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

October 10, 2011

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: NAT ZINC
Pace Project No.: 60107279

Dear Mark Landress:

Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,



Jamie Slade

jamie.slade@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



CERTIFICATIONS

Project: NAT ZINC

Pace Project No.: 60107279

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

A2LA Certification #: 2456.01

Arkansas Certification #: 05-008-0

Illinois Certification #: 001191

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-08-TX

Utah Certification #: 9135995665

REPORT OF LABORATORY ANALYSIS

SAMPLE SUMMARY

Project: NAT ZINC

Pace Project No.: 60107279

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60107279001	508-2A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279002	508-4A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279003	502-3A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279004	502-1A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279005	502-2A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279006	508-1C-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279007	508-2B-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279008	508-3A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279009	502-4A-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279010	502-4B-COMP-LIB	Solid	09/27/11 17:00	09/30/11 09:05
60107279011	DUP-1	Solid	09/27/11 17:00	09/30/11 09:05

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: NAT ZINC

Pace Project No.: 60107279

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60107279001	508-2A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279002	508-4A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279003	502-3A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279004	502-1A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279005	502-2A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279006	508-1C-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279007	508-2B-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279008	508-3A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279009	502-4A-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279010	502-4B-COMP-LIB	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60107279011	DUP-1	EPA 6010	JDH	3	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 508-2A-COMP-LIB **Lab ID: 60107279001** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	9.4	mg/kg	2.2	2	10/04/11 11:59	10/05/11 18:56	7440-38-2	
Cadmium	7.2	mg/kg	1.1	2	10/04/11 11:59	10/05/11 18:56	7440-43-9	
Lead	155	mg/kg	1.1	2	10/04/11 11:59	10/05/11 18:56	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	17.5	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 508-4A-COMP-LIB **Lab ID: 60107279002** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	13.0	mg/kg	1.8	2	10/04/11 11:59	10/05/11 19:02	7440-38-2	
Cadmium	13.7	mg/kg	0.89	2	10/04/11 11:59	10/05/11 19:02	7440-43-9	
Lead	294	mg/kg	0.89	2	10/04/11 11:59	10/05/11 19:02	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	12.2	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 502-3A-COMP-LIB **Lab ID: 60107279003** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	13.6	mg/kg	2.5	2	10/04/11 11:59	10/05/11 19:04	7440-38-2	
Cadmium	16.9	mg/kg	1.3	2	10/04/11 11:59	10/05/11 19:04	7440-43-9	
Lead	499	mg/kg	1.3	2	10/04/11 11:59	10/05/11 19:04	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	20.0	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 502-1A-COMP-LIB **Lab ID: 60107279004** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	18.0	mg/kg	2.3	2	10/04/11 11:59	10/05/11 19:07	7440-38-2	
Cadmium	20.5	mg/kg	1.1	2	10/04/11 11:59	10/05/11 19:07	7440-43-9	
Lead	561	mg/kg	1.1	2	10/04/11 11:59	10/05/11 19:07	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	17.7	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 502-2A-COMP-LIB **Lab ID: 60107279005** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	15.2	mg/kg	1.9	2	10/04/11 11:59	10/05/11 19:09	7440-38-2	
Cadmium	20.0	mg/kg	0.93	2	10/04/11 11:59	10/05/11 19:09	7440-43-9	
Lead	417	mg/kg	0.93	2	10/04/11 11:59	10/05/11 19:09	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	15.8	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 508-1C-COMP-LIB **Lab ID: 60107279006** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	15.8	mg/kg	1.6	2	10/04/11 11:59	10/05/11 19:15	7440-38-2	
Cadmium	7.9	mg/kg	0.82	2	10/04/11 11:59	10/05/11 19:15	7440-43-9	
Lead	52.2	mg/kg	0.82	2	10/04/11 11:59	10/05/11 19:15	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	19.0	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 508-2B-COMP-LIB **Lab ID: 60107279007** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	13.5	mg/kg	1.6	2	10/04/11 11:59	10/05/11 19:18	7440-38-2	
Cadmium	16.3	mg/kg	0.79	2	10/04/11 11:59	10/05/11 19:18	7440-43-9	
Lead	714	mg/kg	0.79	2	10/04/11 11:59	10/05/11 19:18	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	15.8	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 508-3A-COMP-LIB **Lab ID: 60107279008** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	40.6	mg/kg	1.9	2	10/04/11 11:59	10/05/11 19:20	7440-38-2	
Cadmium	11.5	mg/kg	0.95	2	10/04/11 11:59	10/05/11 19:20	7440-43-9	
Lead	265	mg/kg	0.95	2	10/04/11 11:59	10/05/11 19:20	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	12.6	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 502-4A-COMP-LIB **Lab ID: 60107279009** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	22.5	mg/kg	2.2	2	10/04/11 11:59	10/05/11 19:22	7440-38-2	
Cadmium	19.2	mg/kg	1.1	2	10/04/11 11:59	10/05/11 19:22	7440-43-9	
Lead	472	mg/kg	1.1	2	10/04/11 11:59	10/05/11 19:22	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	18.7	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: 502-4B-COMP-LIB **Lab ID: 60107279010** Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	13.8	mg/kg	2.0	2	10/04/11 11:59	10/05/11 19:24	7440-38-2	
Cadmium	12.3	mg/kg	1.0	2	10/04/11 11:59	10/05/11 19:24	7440-43-9	
Lead	163	mg/kg	1.0	2	10/04/11 11:59	10/05/11 19:24	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	17.9	%	0.50	1		10/04/11 00:00		

ANALYTICAL RESULTS

Project: NAT ZINC

Pace Project No.: 60107279

Sample: DUP-1 **Lab ID:** 60107279011 Collected: 09/27/11 17:00 Received: 09/30/11 09:05 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3050						
Arsenic	18.1	mg/kg	2.4	2	10/04/11 11:59	10/05/11 19:26	7440-38-2	
Cadmium	19.2	mg/kg	1.2	2	10/04/11 11:59	10/05/11 19:26	7440-43-9	
Lead	609	mg/kg	1.2	2	10/04/11 11:59	10/05/11 19:26	7439-92-1	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	17.3	%	0.50	1		10/04/11 00:00		

QUALIFIERS

Project: NAT ZINC

Pace Project No.: 60107279

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NAT ZINC
Pace Project No.: 60107279

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60107279001	508-2A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279002	508-4A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279003	502-3A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279004	502-1A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279005	502-2A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279006	508-1C-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279007	508-2B-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279008	508-3A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279009	502-4A-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279010	502-4B-COMP-LIB	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279011	DUP-1	EPA 3050	MPRP/15532	EPA 6010	ICP/13497
60107279001	508-2A-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279002	508-4A-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279003	502-3A-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279004	502-1A-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279005	502-2A-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279006	508-1C-COMP-LIB	ASTM D2974-87	PMST/6566		
60107279007	508-2B-COMP-LIB	ASTM D2974-87	PMST/6567		
60107279008	508-3A-COMP-LIB	ASTM D2974-87	PMST/6567		
60107279009	502-4A-COMP-LIB	ASTM D2974-87	PMST/6567		
60107279010	502-4B-COMP-LIB	ASTM D2974-87	PMST/6567		
60107279011	DUP-1	ASTM D2974-87	PMST/6567		