

INFORMATION HANDOUT

For Contract No. 03-4F9804

At 03-Sac-51-4.1/4.4

Identified by

Project ID 0315000019

MATERIALS INFORMATION

Aerially Deposited Lead Report

Water Source Information



PREPARED FOR:

**CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 3
ENVIRONMENTAL ENGINEERING OFFICE
703 B STREET
MARYSVILLE, CALIFORNIA 95901**



PREPARED BY:

**GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742**



**GEOCON PROJECT NO. S9805-01-56
TASK ORDER NO. 56
E-FIS 03-1500-0019-1 (EA 03-4F9801)
CONTRACT NO. 03A2132**

NOVEMBER 2015



Project No. S9805-01-56
November 16, 2015

Alicia Beyer
California Department of Transportation - District 3
Environmental Engineering Office
703 B Street
Marysville, California 95901

Subject: AERIALY DEPOSITED LEAD REPORT
SAC 51 (BUSINESS 80) POST MILE 4.1/4.4
SACRAMENTO, CALIFORNIA
CONTRACT NO. 03A2132, TASK ORDER NO. 56
EA 03-4F9801, E-FIS: 0315000019-1

Dear Ms. Beyer:

In accordance with California Department of Transportation (Caltrans) Contract No. 03A2132, Task Order No. 56, and Expense Authorization 03-4F9801, we have performed environmental engineering services at the project site. The Site consists of ramps and median of State Route 51 east of Arden Way in Sacramento, California. The accompanying report summarizes the services performed including the excavation of 18 direct-push or hand-auger borings for the collection of soil samples for aerially deposited lead analysis.

The contents of this report reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

Please contact us if you have any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Rebecca L. Silva
Project Manager

John E. Junrend, PE, CEG
Principal/Senior Engineer



(3 + 2 CD) Addressee

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AERIALY DEPOSITED LEAD REPORT

1.0 INTRODUCTION

This Aerially Deposited Lead (ADL) Report for the State Route 51 (SR-51) Post Mile (PM) 4.1/4.4 project was prepared under California Department of Transportation (Caltrans) Contract No. 03A2132, Task Order (TO) No. 56, and Expense Authorization (EA) 03-4F9801.

1.1 Project Description and Proposed Improvements

The project location consists of Caltrans right-of-way (ROW) along the unpaved shoulder areas of eastbound and westbound SR-51 between Post Mile (PM) 4.1 and 4.4 east of Arden Way in Sacramento, California. Caltrans proposes to widen the outside lane and install a concrete barrier on SR-51. The approximate project location is depicted on the attached Vicinity Map, Figure 1, and Site Plan, Figure 2.

1.2 General Objectives

Construction of planned roadway improvements along SR-51 will require the disturbance of soil at the project location and will generate excess soil. The purpose of the scope of services outlined in TO No. 56 was to evaluate potential impacts due to ADL from motor vehicle exhaust in the surface and near-surface soils. The investigative results will be used by Caltrans to inform the construction contractor if ADL-impacted soil is present within the project boundaries for construction worker health and safety, and soil management and disposal purposes.

2.0 BACKGROUND

Caltrans requested this site investigation to provide data regarding the potential presence of ADL within the proposed roadway improvement areas.

2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as “California hazardous” for handling and disposal purposes are contained in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, § 66261.24. Criteria to classify a waste as “Resource, Conservation, and Recovery Act (RCRA) hazardous” are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), § 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the representative total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the representative soluble metal content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste may have the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value, since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the representative soluble metal content equals or exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., representative lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or corrosivity. Waste that is classified as either California-hazardous or RCRA-hazardous requires management as a hazardous waste.

2.2 California Human Health Screening Levels

The California Environmental Protection Agency (Cal/EPA) has prepared technical reports entitled *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties* (Cal/EPA, January 2005) and *Revised California Human Health Screening Levels for Beryllium* (Cal/EPA, March 2009) and *Lead* (Cal/EPA, September 2009), which present CHHSLs for soil, shallow soil gas, and indoor air to assist in evaluating sites impacted by releases of hazardous chemicals.

The CHHSLs are concentrations of 54 hazardous chemicals including Title 22 metals that Cal/EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment (OEHHA) on behalf of Cal/EPA. The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one in a million and a hazard quotient or 1.0 for noncancer effects. Under most circumstances, the presence of a chemical at a concentration less than its respective CHHSL can be assumed to not pose a significant risk. The presence of a chemical at a concentration greater

than a CHHSL does not indicate that adverse impacts to human health are occurring or will occur but suggests that further evaluation is warranted (Cal/EPA, January 2005).

The CHHSLs for residential and industrial/commercial land use were used for comparison on Table 2.

2.3 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) prepared a technical report entitled *User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final 2013* (updated December 2013), which presents Environmental Screening Levels (ESLs) for over 100 commonly found contaminants in soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. "The ESLs are considered to be protective for typical bay area sites. Under most circumstances, ...the presence of a chemical in soil, soil gas, or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant threat to human health, water resources, or the environment." (SFRWQCB, December 2013). ESLs are risk assessment tools and are "not intended to serve as a rule to determine if a waste is hazardous under the state or federal regulations."

Residential and commercial/industrial land use ESLs are commonly used by contractors, soil trucking companies, and private and commercial land owners as default acceptance criteria to evaluate suitability of import soil material. The following ESL tables were used for this characterization:

- Table A. Shallow Soil (≤ 3 m bgs), Groundwater is a Current or Potential Source of Drinking Water
- Table K-3. Direct Exposure Soil Screening Levels, Construction/Trench Worker Exposure Scenario

The respective ESLs are listed at the end of Table 2 for comparative purposes.

3.0 SCOPE OF SERVICES

The scope of services requested by Caltrans in TO No. 56 included the collection of soil samples for laboratory analysis to determine lead content, and the preparation of this report.

3.1 Pre-field Activities

- Conducted a pre-work site meeting on September 28, 2015. Caltrans representative Mark Melani and Geocon representative Julio Esquivel attended the meeting. The purpose of the site visit was to observe the project boundaries and conditions. The project limits and boring locations were further marked out in white paint for subsequent utility clearance.
- Prepared a *Health and Safety Plan* dated October 2015 to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Provided at least a 48-hour notification to Underground Service Alert (USA) prior to job site mobilization (USA Ticket Nos. 482506, 482527, 482545, and 482553).
- Retained the services of Advanced Technology Laboratories (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.

3.2 Field Activities

On October 6, 2015, 72 soil samples were collected from 17 direct-push borings and one hand-auger boring located along the unpaved shoulders of SR-51. The soil borings were advanced to a maximum sampling depth of 3 feet. Soil samples were collected at depth intervals of 0 to 0.5 foot, 0.5 to 1 foot, 1 to 2 feet, and 2 to 3 feet.

The sample locations were selected by the Caltrans Task Order Manager. Following sample collection, the borings were backfilled with the excess soil cuttings. Details of the field activities are presented in the following sections.

4.0 INVESTIGATIVE METHODS

4.1 Soil Sampling Procedures

The following borings were advanced along the unpaved shoulder areas of SR-51. The approximate boring locations are depicted on Figure 2.

- Location 1: Borings L1-B1 through L1-B5 were advanced along the north side of SR-51 between SR-51 and the offramp from westbound SR-51 to northbound Arden Way;
- Location 2: Borings L2-B6 through L2-B9 were advanced along the south side of SR-51 between SR-51 and the offramp from eastbound SR-51 to southbound Arden Way;
- Location 3: Borings L3-B10 through L3-B13 were advanced along the south side of SR-51 between SR-51 and the onramp from Arden Way to eastbound SR-51; and
- Location 4: Borings L4-B14 through L4-B18 were advanced in the median of SR-51.

Soil samples obtained from the direct-push borings were collected in cellulose thermoplastic (acetate) liners driven by the direct-push rig. The acetate liners were cut to separate the sample by depth, then the sample from a particular interval was opened and the soil sample was transferred to a Ziploc[®] re-sealable plastic bag. Soil samples collected using a hand-auger were transferred directly into Ziploc[®] re-sealable plastic bags. The soil samples were field homogenized within the sample bags and subsequently labeled, placed in an ice chest, and delivered to ATL for analytical testing under chain-of-custody (COC) documentation. Soil types were noted on the daily field log.

The coordinates of the boring locations were determined using a differential global positioning system (GPS). The GPS was utilized during the field activities to locate the horizontal position of the boring locations with an error of no more than 3.3 feet. The latitude and longitude of the boring locations are summarized on Table 1.

4.2 Quality Assurance/Quality Control (QA/QC) Procedures

QA/QC procedures were performed during the field exploration activities. These procedures included the decontamination of sampling equipment before each sample was collected and providing COC documentation for each sample submitted to the laboratory. The soil sampling equipment was cleansed between borings by washing the equipment with an Alconox[®] solution followed by a double rinse with purified water. The decontamination water was discharged to the ground surface within the Caltrans ROW, away from the roadway and storm drain inlets.

4.3 Laboratory Analyses

The soil samples were analyzed under expedited 5-day turnaround time (TAT) for the following analyses. The laboratory was instructed to homogenize the soil samples prior to analysis in accordance with Contract 03A2132 requirements.

- Each soil sample was analyzed for total lead following Environmental Protection Agency (EPA) Test Method 6010B.
- Twenty soil samples with total lead concentrations greater than or equal to 50 milligrams per kilogram (mg/kg) (i.e., ten times the lead STLC) were further analyzed for WET soluble lead using EPA Test Method 6010B.
- Four soil samples with total lead concentrations equal to or greater than 400 mg/kg were further analyzed for TCLP soluble lead using EPA Test Method 6010B.

QA/QC procedures were performed by ATL as applicable for the method of analysis with specificity for each analyte listed in the test method's QA/QC. QA/QC measures for the lead analysis included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix, whichever was more frequent, with the spike made at ten times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratory, the COC documentation was reviewed for accuracy and completeness. Copies of the laboratory reports and COC documentation are presented in Appendix A.

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

5.1 Soil Description

Soil encountered during the excavation of borings generally consisted of clayey silt overlying silty sand to the maximum sampling depth of approximately 3 feet. Groundwater was not encountered in the soil borings.

5.2 Soil Analytical Results

5.2.1 Location 1: Borings L1-B1 through L1-B5

Total lead was detected in the 20 soil samples analyzed at concentrations ranging from 4.4 to 870 mg/kg. Five of the 20 soil samples had reported total lead concentrations equal to or greater than 50 mg/kg (ten times the STLC for lead of 5.0 milligrams per liter [mg/l]) and were further analyzed for WET soluble lead.

WET soluble lead was reported for each of the five samples analyzed at concentrations ranging from 4.7 to 42 mg/l. Four of the soil samples had WET soluble lead concentrations greater than the STLC for lead of 5.0 mg/l.

TCLP soluble lead was reported for the one soil sample analyzed at 0.19 mg/l.

5.2.2 Location 2: Borings L2-B6 through L2-B9

Total lead was detected in the 16 soil samples analyzed at concentrations ranging from 2.4 to 140 mg/kg. Three of the 16 soil samples had reported total lead concentrations equal to or greater than 50 mg/kg and were further analyzed for WET soluble lead.

WET soluble lead was reported for each of the three soil samples analyzed at concentrations ranging from 3.1 to 8.8 mg/l. Two of the soil samples had WET soluble lead concentrations greater than the STLC for lead of 5.0 mg/l.

5.2.3 Location 3: Borings L3-B10 through L3-B13

Total lead was detected in the 16 soil samples analyzed at concentrations ranging from 4.5 to 330 mg/kg. Seven of the 16 soil samples had reported total lead concentrations equal to or greater than 50 mg/kg and were further analyzed for WET soluble lead.

WET soluble lead was reported for six of the seven soil samples analyzed at concentrations ranging from 2.7 to 37 mg/l. Two of the soil samples had WET soluble lead concentrations greater than the STLC for lead of 5.0 mg/l.

5.2.4 Location 4: Borings L4-B14 through L4-B18

Total lead was detected in the 20 soil samples analyzed at concentrations ranging from 3.5 to 580 mg/kg. Five of the 20 soil samples had reported total lead concentrations equal to or greater than 50 mg/kg and were further analyzed for WET soluble lead.

WET soluble lead was reported for each of the five samples analyzed at concentrations ranging from 8.1 to 25 mg/l, greater than the STLC for lead of 5.0 mg/l.

TCLP soluble lead was reported for the three soil samples analyzed at concentrations ranging from 0.25 to 0.64 mg/l.

The analytical results for the soil samples are summarized on Table 2. Copies of the ATL laboratory reports and COC documentation are in Appendix A.

5.4 Laboratory QA/QC

We reviewed the QA/QC provided with the ATL laboratory report. The relative percent differences for some sample duplicates were outside acceptance criteria. Calculation is based on

raw values as noted in the laboratory report. Based on the laboratory QA/QC data, no qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

5.5 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and WET lead concentrations exists that would allow the prediction of WET lead concentrations based on the calculated UCLs. The total lead data were separated into four sample populations for statistical evaluation as described below.

- Location 1: Borings L1-B1 through L1-B5;
- Location 2: Borings L2-B6 through L2-B9;
- Location 3: Borings L3-B10 through L3-B13; and
- Location 4: Borings L4-B14 through L4-B18.

5.5.1 Calculating the UCLs for the Arithmetic Mean

Non-parametric bootstrap techniques were used to calculate the UCLs. The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the arithmetic mean concentration are used as mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean. UCLs could not be calculated for samples collected from Locations 2 and 3 due to the limited number of samples collected from each depth interval at each of these locations.

The bootstrap results are in Appendix B. The calculated UCLs and statistical results for each sample population are summarized in the following tables:

Location 1: Borings L1-B1 through L1-B5

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	508	560	331.6	38	870
0.5 to 1	165	186	82.38	5.3	360
1 to 2	23.6	26.7	14.02	4.4	48
2 to 3	7.65	7.88	6.9	5.0	8.5

Location 2: Borings L2-B6 through L2-B9

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	NA	NA	86	33	140
0.5 to 1	NA	NA	12.5	4	27
1 to 2	NA	NA	5.625	2.4	9.7
2 to 3	NA	NA	4.175	2.6	4.8

Location 3: Borings L3-B10 through L3-B13

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	NA	NA	156.3	73	330
0.5 to 1	NA	NA	56	28	85
1 to 2	NA	NA	19.5	4.8	61
2 to 3	NA	NA	7.4	4.5	15

Location 4: Borings L4-B14 through L4-B18

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	432	454	344	150	580
0.5 to 1	22.3	24.3	15.98	5.4	31
1 to 2	17.1	19.1	10.34	3.5	34
2 to 3	8.54	9.16	6.32	4.0	14

5.5.2 Correlation of Total and Soluble Lead

Total and corresponding WET soluble lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET soluble lead concentrations based on the UCLs calculated above in Section 5.5.1.

To estimate the degree of interrelation between total and corresponding WET soluble lead values (x and y , respectively), the *correlation coefficient* [r] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all.

The *correlation coefficient* calculated for SR-51 for the 20 (x , y) data points (i.e., soil samples analyzed for both total lead [x] and WET soluble lead [y]) was 0.93. A *correlation coefficient* greater than or equal to 0.8 is an acceptable indicator that a correlation exists. Consequently, an acceptable correlation between total and soluble lead concentrations was established for the data points since the *correlation coefficient* is greater than 0.8. In order to obtain an acceptable *correlation coefficient*, we eliminated one data point from the calculation.

For the *correlation coefficient* that indicates a linear relationship between total and WET soluble lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y -intercept equal to zero since that is a known point. The equation of the regression line for SR-51 was determined to be $y = 0.0449(x)$, where x represents total lead concentrations and y represents predicted WET soluble lead concentrations.

This equation was used to estimate the expected WET lead concentrations for the total lead UCLs or maximum concentrations for the four SR-51 data sets. Regression analysis results and a scatter plot depicting the (x, y) data points along with the regression line are in Appendix B. The 90% and 95% UCLs and the predicted WET soluble lead concentrations are presented in Section 6.0.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Hazardous waste classification based on the 90% UCL is considered sufficient to satisfy a good faith effort as discussed in SW-846. Risk assessment characterization is typically based on the 95% UCL in accordance with the *Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment*. Per Caltrans, 90% UCLs are to be used to evaluate onsite reuse, and 95% UCLs are to be used to evaluate offsite reuse or disposal.

6.1 Location 1: Borings L1-B1 through L1-B5

Total lead concentrations ranged from 4.4 to 870 mg/kg with an average total lead concentration of 108.7 mg/kg. The table below summarizes the excavation scenarios, the weighted average based on the calculated total lead UCLs, and the waste classification for excavated soil within the project limits as represented by borings L1-B1 through L1-B5.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	95% UCL Predicted WET Lead (mg/l)	Waste Classification
0 to 0.5 foot	508	23	560	25	Hazardous
Underlying soil (0.5 to 2 feet)	71	3.2	80	3.6	Non-hazardous
Underlying soil (0.5 to 3 feet)	46	2.0	51	2.3	Non-hazardous
0 to 1 foot	337	15.1	373	16.7	Hazardous
Underlying soil (1 to 2 feet)	23.6	1.1	26.7	1.2	Non-hazardous
Underlying soil (1 to 3 feet)	16	0.7	17	0.8	Non-hazardous
0 to 2 feet	180	8.1	200	9.0	Hazardous
Underlying soil (2 to 3 feet)	7.7	0.3	7.9	0.4	Non-hazardous
0 to 3 feet	123	5.5	136	6.1	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal. Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0449x$.

Based on the above table, soil excavated from the surface to a depth of 3 feet or shallower would be classified as a California hazardous waste since the 90% UCL-predicted WET soluble lead concentration is greater than the STLC value for lead of 5.0 mg/l. Soil excavated from the top 3 feet or shallower cannot be reused and should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Based on the TCLP soluble lead result of less than 5.0 mg/l for the sample collected from Location 1, soil generated within this area will not be classified as RCRA hazardous waste.

The 95% UCL lead concentrations for the samples collected from depths up to 1 foot from Location 1 are greater than the residential and commercial land use CHHSLs, ESLs, and the construction exposure ESL. The 95% UCL lead concentrations for the samples collected from depths of 2 to 3 feet are greater than the residential land use CHHSLs and ESLs, but are less than the commercial land use CHHSLs, ESLs, and the construction exposure ESL.

6.2 Location 2: Borings L2-B6 through L2-B9

Total lead concentrations ranged from 2.4 to 140 mg/kg with an average total lead concentration of 27.1 mg/kg. The table below summarizes the excavation scenarios, the weighted average based on maximum total lead concentrations, and the waste classification for excavated soil within the project limits as represented by borings L2-B6 through L2-B9. UCLs were not calculated at this location due to the limited number of samples.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 0.5 foot	140	6.3	Hazardous
Underlying soil (0.5 to 2 feet)	15	0.7	Non-hazardous
Underlying soil (0.5 to 3 feet)	11	0.5	Non-hazardous
0 to 1 foot	84	3.7	Non-hazardous
Underlying soil (1 to 2 feet)	9.7	0.4	Non-hazardous
Underlying soil (1 to 3 feet)	7.3	0.3	Non-hazardous
0 to 2 feet	47	2.1	Non-hazardous
Underlying soil (2 to 3 feet)	4.8	0.2	Non-hazardous
0 to 3 feet	33	1.5	Non-hazardous

Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0449x$.

Based on the above table, soil excavated from the surface to a depth of 0.5 foot or shallower would be classified as a California hazardous waste since the predicted WET soluble lead concentration is greater than the STLC value for lead of 5.0 mg/l. Soil excavated from the top 0.5 foot or shallower cannot be reused and should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

If the top 1 to 3 feet of soil is excavated and managed as a whole, then soil generated from the top 1 to 3 feet would not be classified as a California-hazardous waste since the predicted WET soluble lead concentrations are less than the STLC value for lead of 5.0 mg/l. Consequently, the top 1 to 3 feet of excavated soil could be reused or disposed of as non-hazardous soil with respect to lead content.

The maximum concentrations for the samples collected from depths up to 1 foot from Location 2 are greater than the residential land use CHHSLs and ESLs, but are less than the commercial land use CHHSLs, ESLs, and the construction exposure ESL.

6.3 Location 3: Borings L3-B10 through L3-B13

Total lead concentrations ranged from 4.5 to 330 mg/kg with an average total lead concentration of 59.8 mg/kg. The table below summarizes the excavation scenarios, the weighted average based on maximum total lead concentrations, and the waste classification for excavated soil within the project limits as represented by borings L3-B10 through L3-B13. UCLs were not calculated at this location due to the limited number of samples.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 0.5 foot	330	14.8	Hazardous
Underlying soil (0.5 to 2 feet)	69	3.1	Non-hazardous
Underlying soil (0.5 to 3 feet)	47	2.1	Non-hazardous
0 to 1 foot	208	9.3	Hazardous
Underlying soil (1 to 2 feet)	61	2.7	Non-hazardous
Underlying soil (1 to 3 feet)	38	1.7	Non-hazardous
0 to 2 feet	134	6.0	Hazardous
Underlying soil (2 to 3 feet)	15	0.7	Non-hazardous
0 to 3 feet	95	4.2	Non-hazardous

Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0449x$.

Based on the above table, soil excavated from the surface to a depth of 2 feet or shallower would be classified as a California hazardous waste since the predicted WET soluble lead concentrations are greater than the STLC value for lead of 5.0 mg/l. Soil excavated from the top 2 feet or shallower cannot be reused and should be either (1) managed and disposed of as a

California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

If the top 3 feet of soil is excavated and managed as a whole, then soil generated from the top 3 feet would not be classified as a California-hazardous waste since the predicted WET soluble lead concentration is less than the STLC value for lead of 5.0 mg/l. Consequently, the top 3 feet of excavated soil could be reused or disposed of as non-hazardous soil with respect to lead content.

The maximum concentrations for the samples collected from depths up to 0.5 foot from Location 3 are greater than the residential and commercial land use CHHSLs, ESLs, and the construction exposure ESL. The maximum concentrations for the samples collected from depths of 1 to 3 feet are greater than the residential land use CHHSLs and ESLs, but are less than the commercial land use CHHSLs, ESLs, and the construction exposure ESL.

6.4 Location 4: Borings L4-B14 through L4-B18

Total lead concentrations ranged from 3.5 to 580 mg/kg with an average total lead concentration of 94.2 mg/kg. The table below summarizes the excavation scenarios, the weighted average based on the calculated total lead UCLs, and the waste classification for excavated soil within the project limits as represented by borings L4-B14 through L4-B18.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	95% UCL Predicted WET Lead (mg/l)	Waste Classification
0 to 0.5 foot	432	19	454	20	Hazardous
Underlying soil (0.5 to 2 feet)	19	0.8	21	0.9	Non-hazardous
Underlying soil (0.5 to 3 feet)	15	0.7	16	0.7	Non-hazardous
0 to 1 foot	227	10.2	239	11	Hazardous
Underlying soil (1 to 2 feet)	17.1	0.8	19.1	0.9	Non-hazardous
Underlying soil (1 to 3 feet)	13	0.6	14	0.6	Non-hazardous
0 to 2 feet	122	5.5	129	5.8	Hazardous
Underlying soil (2 to 3 feet)	8.5	0.4	9.2	0.4	Non-hazardous
0 to 3 feet	84	3.8	89	4.0	Non-hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal. Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0449x$.

Based on the above table, soil excavated from the surface to a depth of 2 feet or shallower would be classified as a California hazardous waste since the 90% UCL-predicted WET soluble lead concentration is greater than the STLC value for lead of 5.0 mg/l. Soil excavated from the top 2 feet or shallower cannot be reused and should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

If the top 3 feet of soil is excavated and managed as a whole, then soil generated from the top 3 feet would not be classified as a California-hazardous waste since the predicted WET soluble lead concentration is less than the STLC value for lead of 5.0 mg/l. Consequently, the top 3 feet of excavated soil could be reused or disposed of as non-hazardous soil with respect to lead content.

Based on the TCLP soluble lead results of less than 5.0 mg/l for the samples collected from Location 3, soil generated within this area will not be classified as RCRA hazardous waste.

The maximum concentrations for the samples collected from depths up to 0.5 foot from Location 4 are greater than the residential and commercial land use CHHSLs, ESLs, and the construction exposure ESL. The maximum concentrations for the samples collected from depths of 1 to 3 feet are greater than the residential land use CHHSLs and ESLs, but are less than the commercial land use CHHSLs, ESLs, and the construction exposure ESL.

For each of the four locations, if the top 0.5 foot of soil were to be removed, the underlying soil, where excavated and managed separately, would not be classified as a California-hazardous waste since the predicted WET soluble lead concentrations are less than the STLC value for lead of 5.0 mg/l.

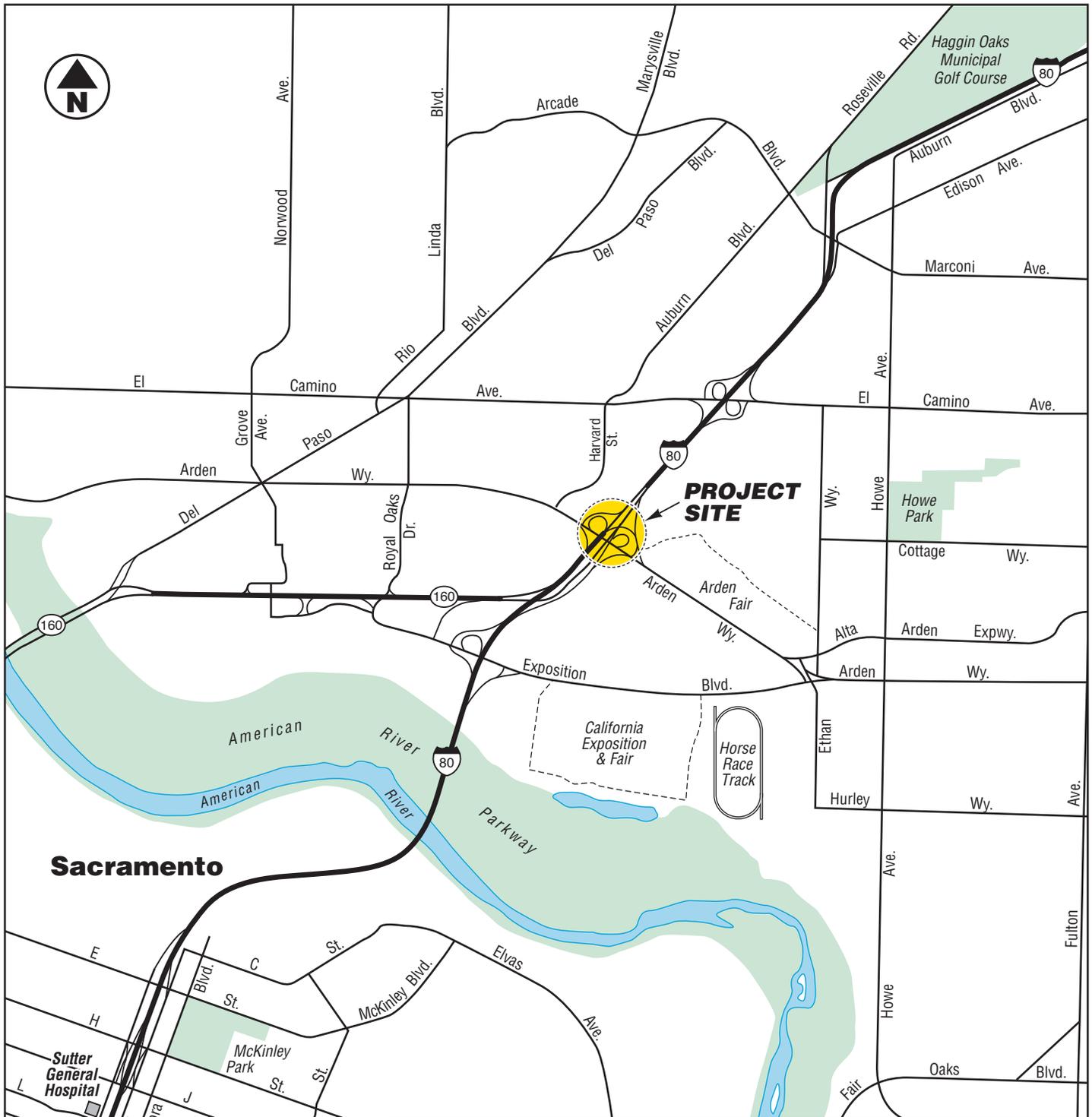
6.5 Worker Protection

Per Caltrans' requirements, the contractor(s) should prepare a project-specific Lead Compliance Plan (CCR Title 8, § 1532.1, the "Lead in Construction" standard) to minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

7.0 REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. We strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



Sacramento



GEOCON
CONSULTANTS, INC.

3160 GOLD VALLEY DR - SUITE 800 - RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 - FAX 916.852.9132

SAC-51 PM 4.1/4.4

Sacramento County,
California

VICINITY MAP

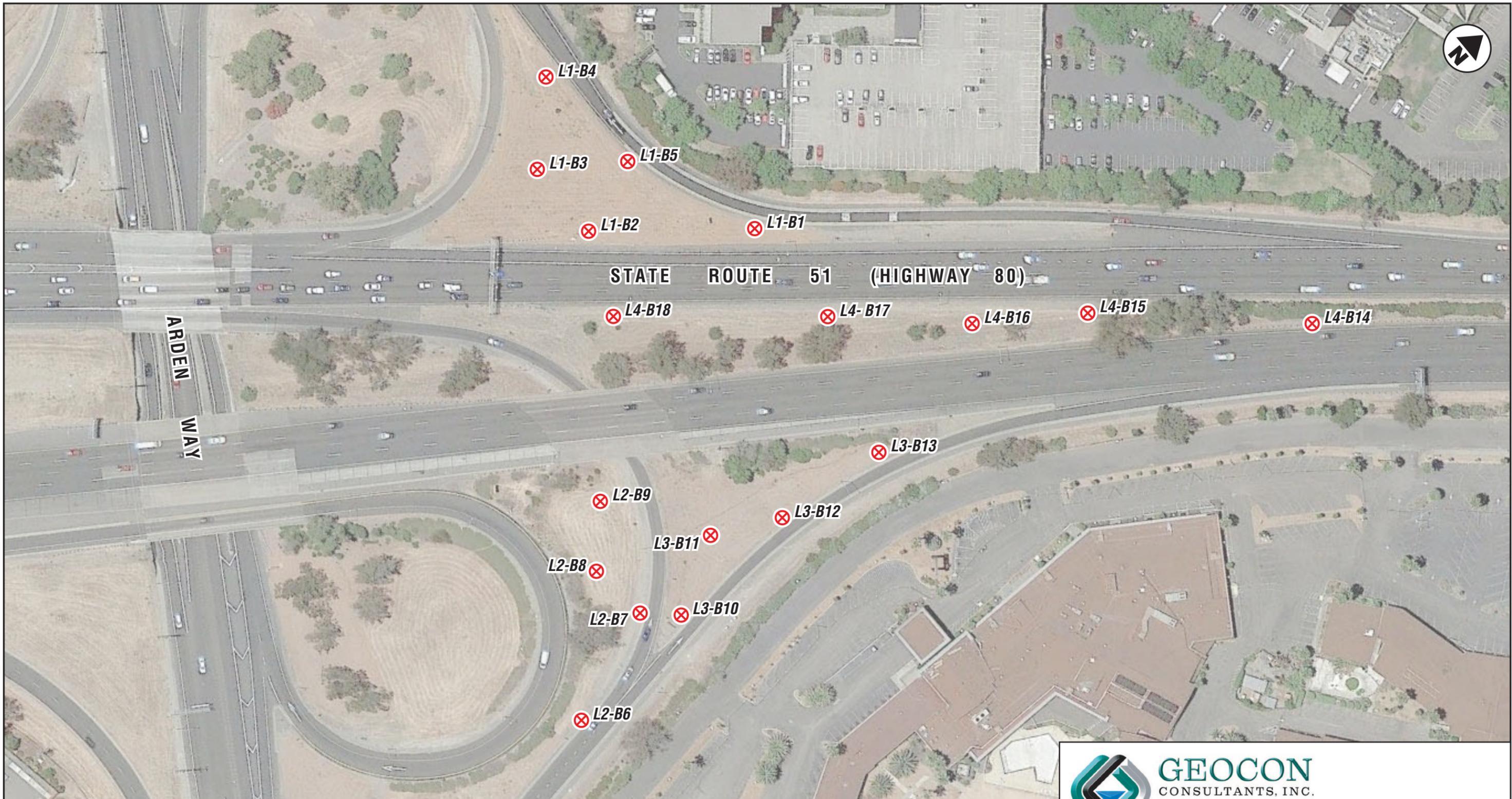
GEOCON Proj. No. S9805-01-56

Task Order No. 56, EA 03-4F9801

November 2015

Figure 1

Note: Font increased per client request



Note: Font increased per client request


GEOCON
 CONSULTANTS, INC.
 3160 GOLD VALLEY DR - SUITE 800 - RANCHO CORDOVA, CA 95742
 PHONE 916.852.9118 - FAX 916.852.9132

SAC-51 PM 4.1/4.4		
Sacramento County, California		SITE PLAN
GEOCON Proj. No. S9805-01-56		November 2015
Task Order No. 56, EA 03-4F9801	Figure 2	

LEGEND:

L4-B18 ⊗ Approximate Boring Location



TABLE 1
SUMMARY OF SOIL BORING COORDINATES
EA 03-4F9801
STATE ROUTE 51 PM 4.1/4.4
SACRAMENTO, CALIFORNIA

BORING ID	SAMPLE DATE	LATITUDE	LONGITUDE
Location 1			
L1-B1	10/6/2015	38.60503747	-121.4338843
L1-B2	10/6/2015	38.60466716	-121.4342687
L1-B3	10/6/2015	38.60466325	-121.4345624
L1-B4	10/6/2015	38.60485273	-121.4348088
L1-B5	10/6/2015	38.60487941	-121.4343739
Location 2			
L2-B6	10/6/2015	38.60374320	-121.4329031
L2-B7	10/6/2015	38.60406808	-121.4330706
L2-B8	10/6/2015	38.60404983	-121.4332931
L2-B9	10/6/2015	38.60418917	-121.4334828
Location 3			
L3-B10	10/6/2015	38.60416071	-121.4329691
L3-B11	10/6/2015	38.60437058	-121.4331235
L3-B12	10/6/2015	38.60456382	-121.4330028
L3-B13	10/6/2015	38.60489825	-121.4329580
Location 4			
L4-B14	10/6/2015	38.60609839	-121.4323001
L4-B15	10/6/2015	38.60561913	-121.4328604
L4-B16	10/6/2015	38.60534020	-121.4331013
L4-B17	10/6/2015	38.60503624	-121.4334617
L4-B18	10/6/2015	38.60456238	-121.4339700

Note: Font increased per client request.

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
EA 03-4F9801
STATE ROUTE 51 PM 4.1/4.4
SACRAMENTO, CALIFORNIA

SAMPLE ID	DEPTH INTERVAL (feet)	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	TCLP LEAD (mg/l)
Location 1				
L1-B1-0	0-0.5	870	42	---
L1-B1-0.5	0.5-1	360	11	---
L1-B1-1	1-2	48	---	---
L1-B1-2	2-3	5.8	---	---
L1-B2-0	0-0.5	160	4.7	---
L1-B2-0.5	0.5-1	5.3	---	---
L1-B2-1	1-2	7.3	---	---
L1-B2-2	2-3	7.2	---	---
L1-B3-0	0-0.5	38	---	---
L1-B3-0.5	0.5-1	6.6	---	---
L1-B3-1	1-2	4.8	---	---
L1-B3-2	2-3	8.5	---	---
L1-B4-0	0-0.5	100	6.2	---
L1-B4-0.5	0.5-1	12	---	---
L1-B4-1	1-2	5.6	---	---
L1-B4-2	2-3	5.0	---	---
L1-B5-0	0-0.5	490	18	0.19
L1-B5-0.5	0.5-1	28	---	---
L1-B5-1	1-2	4.4	---	---
L1-B5-2	2-3	8.0	---	---
Location 2				
L2-B6-0	0-0.5	140	8.8	---
L2-B6-0.5	0.5-1	11	---	---
L2-B6-1	1-2	4.7	---	---
L2-B6-2	2-3	4.6	---	---
L2-B7-0	0-0.5	33	---	---
L2-B7-0.5	0.5-1	4.0	---	---
L2-B7-1	1-2	2.4	---	---
L2-B7-2	2-3	2.6	---	---

TABLE 2
 SUMMARY OF SOIL ANALYTICAL RESULTS
 EA 03-4F9801
 STATE ROUTE 51 PM 4.1/4.4
 SACRAMENTO, CALIFORNIA

SAMPLE ID	DEPTH INTERVAL (feet)	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	TCLP LEAD (mg/l)
L2-B8-0	0-0.5	84	3.1	---
L2-B8-0.5	0.5-1	27	---	---
L2-B8-1	1-2	9.7	---	---
L2-B8-2	2-3	4.8	---	---
L2-B9-0	0-0.5	87	7.3	---
L2-B9-0.5	0.5-1	8.0	---	---
L2-B9-1	1-2	5.7	---	---
L2-B9-2	2-3	4.7	---	---
Location 3				
L3-B10-0	0-0.5	140	37	---
L3-B10-0.5	0.5-1	48	---	---
L3-B10-1	1-2	6.0	---	---
L3-B10-2	2-3	5.4	---	---
L3-B11-0	0-0.5	73	3.6	---
L3-B11-0.5	0.5-1	28	---	---
L3-B11-1	1-2	4.8	---	---
L3-B11-2	2-3	4.7	---	---
L3-B12-0	0-0.5	82	3.6	---
L3-B12-0.5	0.5-1	63	<1.0	---
L3-B12-1	1-2	61	2.7	---
L3-B12-2	2-3	15	---	---
L3-B13-0	0-0.5	330	21	---
L3-B13-0.5	0.5-1	85	4.7	---
L3-B13-1	1-2	6.2	---	---
L3-B13-2	2-3	4.5	---	---
Location 4				
L4-B14-0	0-0.5	400	24	0.64
L4-B14-0.5	0.5-1	31	---	---
L4-B14-1	1-2	3.5	---	---
L4-B14-2	2-3	14	---	---

TABLE 2
 SUMMARY OF SOIL ANALYTICAL RESULTS
 EA 03-4F9801
 STATE ROUTE 51 PM 4.1/4.4
 SACRAMENTO, CALIFORNIA

SAMPLE ID	DEPTH INTERVAL (feet)	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	TCLP LEAD (mg/l)
L4-B15-0	0-0.5	150	9.4	---
L4-B15-0.5	0.5-1	28	---	---
L4-B15-1	1-2	34	---	---
L4-B15-2	2-3	4.1	---	---
L4-B16-0	0-0.5	200	11	---
L4-B16-0.5	0.5-1	7.8	---	---
L4-B16-1	1-2	5.3	---	---
L4-B16-2	2-3	4.0	---	---
L4-B17-0	0-0.5	580	25	0.25
L4-B17-0.5	0.5-1	7.7	---	---
L4-B17-1	1-2	4.9	---	---
L4-B17-2	2-3	4.5	---	---
L4-B18-0	0-0.5	390	8.1	0.27
L4-B18-0.5	0.5-1	5.4	---	---
L4-B18-1	1-2	4.0	---	---
L4-B18-2	2-3	5.0	---	---

Hazardous Waste Criteria

TTLC (mg/kg)	1,000
STLC (mg/l)	5.0
TCLP (mg/l)	5.0

CHHSLs

Residential Land Use	80
Commercial/Industrial Land Use	320

ESLs

Residential Land Use	80
Commercial/Industrial Land Use	320
Construction Worker Exposure	320

Background Concentrations ⁽¹⁾

Minimum	12.4
Mean	23.9
Maximum	97.1

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
EA 03-4F9801
STATE ROUTE 51 PM 4.1/4.4
SACRAMENTO, CALIFORNIA

SAMPLE ID	DEPTH INTERVAL (feet)	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	TCLP LEAD (mg/l)
-----------	--------------------------	-----------------------	--------------------	---------------------

Notes:

Font increased per client request.

WET = Waste Extraction Test

TCLP = Toxicity Characteristic Leaching Procedure

mg/kg = Milligrams per kilogram

mg/l = Milligrams per liter

< = Less than the laboratory test method reporting limit

--- = Not analyzed

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

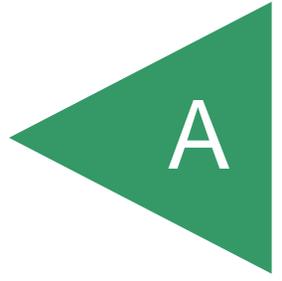
CHHSLs = California Human Health Screening Levels, Table 1, California EPA, January 2005

ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, December 2013.

⁽¹⁾ = Background Concentrations of Trace and Major Elements in California Soils (Kearney Foundation of Soil Science, Division of Agricultural and Natural Resources, University of California, March 1996)

APPENDIX

A





October 14, 2015

Rebecca Silva
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1503439
Client Reference : Sac 51/Arden Way, S9805-01-56

Enclosed are the results for sample(s) received on October 07, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Rodriguez', written in a cursive style.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Geocon Consultants, Inc.

Project Number : Sac 51/Arden Way, S9805-01-56

3160 Gold Valley Drive, Suite 800

Report To : Rebecca Silva

Rancho Cordova , CA 95742

Reported : 10/14/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
L1-B1-0	1503439-01	Soil	10/06/15 7:21	10/07/15 9:00
L1-B1-0.5	1503439-02	Soil	10/06/15 7:22	10/07/15 9:00
L1-B1-1	1503439-03	Soil	10/06/15 7:23	10/07/15 9:00
L1-B1-2	1503439-04	Soil	10/06/15 7:24	10/07/15 9:00
L1-B2-0	1503439-05	Soil	10/06/15 7:28	10/07/15 9:00
L1-B2-0.5	1503439-06	Soil	10/06/15 7:29	10/07/15 9:00
L1-B2-1	1503439-07	Soil	10/06/15 7:30	10/07/15 9:00
L1-B2-2	1503439-08	Soil	10/06/15 7:31	10/07/15 9:00
L1-B3-0	1503439-09	Soil	10/06/15 7:37	10/07/15 9:00
L1-B3-0.5	1503439-10	Soil	10/06/15 7:38	10/07/15 9:00
L1-B3-1	1503439-11	Soil	10/06/15 7:39	10/07/15 9:00
L1-B3-2	1503439-12	Soil	10/06/15 7:40	10/07/15 9:00
L1-B4-0	1503439-13	Soil	10/06/15 7:43	10/07/15 9:00
L1-B4-0.5	1503439-14	Soil	10/06/15 7:44	10/07/15 9:00
L1-B4-1	1503439-15	Soil	10/06/15 7:45	10/07/15 9:00
L1-B4-2	1503439-16	Soil	10/06/15 7:46	10/07/15 9:00
L1-B5-0	1503439-17	Soil	10/06/15 7:58	10/07/15 9:00
L1-B5-0.5	1503439-18	Soil	10/06/15 7:59	10/07/15 9:00
L1-B5-1	1503439-19	Soil	10/06/15 8:00	10/07/15 9:00
L1-B5-2	1503439-20	Soil	10/06/15 8:01	10/07/15 9:00
L2-B6-0	1503439-21	Soil	10/06/15 8:30	10/07/15 9:00
L2-B6-0.5	1503439-22	Soil	10/06/15 8:31	10/07/15 9:00
L2-B6-1	1503439-23	Soil	10/06/15 8:32	10/07/15 9:00
L2-B6-2	1503439-24	Soil	10/06/15 8:33	10/07/15 9:00
L2-B7-0	1503439-25	Soil	10/06/15 8:40	10/07/15 9:00
L2-B7-0.5	1503439-26	Soil	10/06/15 8:41	10/07/15 9:00
L2-B7-1	1503439-27	Soil	10/06/15 8:42	10/07/15 9:00
L2-B7-2	1503439-28	Soil	10/06/15 8:43	10/07/15 9:00
L2-B8-0	1503439-29	Soil	10/06/15 8:46	10/07/15 9:00
L2-B8-0.5	1503439-30	Soil	10/06/15 8:47	10/07/15 9:00
L2-B8-1	1503439-31	Soil	10/06/15 8:48	10/07/15 9:00
L2-B8-2	1503439-32	Soil	10/06/15 8:49	10/07/15 9:00
L2-B9-0	1503439-33	Soil	10/06/15 8:53	10/07/15 9:00
L2-B9-0.5	1503439-34	Soil	10/06/15 8:54	10/07/15 9:00



Certificate of Analysis

Geocon Consultants, Inc.

Project Number : Sac 51/Arden Way, S9805-01-56

3160 Gold Valley Drive, Suite 800

Report To : Rebecca Silva

Rancho Cordova , CA 95742

Reported : 10/14/2015

L2-B9-1	1503439-35	Soil	10/06/15 8:55	10/07/15 9:00
L2-B9-2	1503439-36	Soil	10/06/15 8:56	10/07/15 9:00
L3-B10-0	1503439-37	Soil	10/06/15 9:02	10/07/15 9:00
L3-B10-0.5	1503439-38	Soil	10/06/15 9:03	10/07/15 9:00
L3-B10-1	1503439-39	Soil	10/06/15 9:04	10/07/15 9:00
L3-B10-2	1503439-40	Soil	10/06/15 9:05	10/07/15 9:00
L3-B11-0	1503439-41	Soil	10/06/15 9:09	10/07/15 9:00
L3-B11-0.5	1503439-42	Soil	10/06/15 9:10	10/07/15 9:00
L3-B11-1	1503439-43	Soil	10/06/15 9:11	10/07/15 9:00
L3-B11-2	1503439-44	Soil	10/06/15 9:12	10/07/15 9:00
L3-B12-0	1503439-45	Soil	10/06/15 9:28	10/07/15 9:00
L3-B12-0.5	1503439-46	Soil	10/06/15 9:29	10/07/15 9:00
L3-B12-1	1503439-47	Soil	10/06/15 9:30	10/07/15 9:00
L3-B12-2	1503439-48	Soil	10/06/15 9:31	10/07/15 9:00
L3-B13-0	1503439-49	Soil	10/06/15 9:34	10/07/15 9:00
L3-B13-0.5	1503439-50	Soil	10/06/15 9:35	10/07/15 9:00
L3-B13-1	1503439-51	Soil	10/06/15 9:36	10/07/15 9:00
L3-B13-2	1503439-52	Soil	10/06/15 9:37	10/07/15 9:00
L4-B14-0	1503439-53	Soil	10/06/15 10:06	10/07/15 9:00
L4-B14-0.5	1503439-54	Soil	10/06/15 10:08	10/07/15 9:00
L4-B14-1	1503439-55	Soil	10/06/15 10:10	10/07/15 9:00
L4-B14-2	1503439-56	Soil	10/06/15 10:11	10/07/15 9:00
L4-B15-0	1503439-57	Soil	10/06/15 10:20	10/07/15 9:00
L4-B15-0.5	1503439-58	Soil	10/06/15 10:21	10/07/15 9:00
L4-B15-1	1503439-59	Soil	10/06/15 10:22	10/07/15 9:00
L4-B15-2	1503439-60	Soil	10/06/15 10:23	10/07/15 9:00
L4-B16-0	1503439-61	Soil	10/06/15 10:27	10/07/15 9:00
L4-B16-0.5	1503439-62	Soil	10/06/15 10:28	10/07/15 9:00
L4-B16-1	1503439-63	Soil	10/06/15 10:29	10/07/15 9:00
L4-B16-2	1503439-64	Soil	10/06/15 10:30	10/07/15 9:00
L4-B17-0	1503439-65	Soil	10/06/15 10:34	10/07/15 9:00
L4-B17-0.5	1503439-66	Soil	10/06/15 10:35	10/07/15 9:00
L4-B17-1	1503439-67	Soil	10/06/15 10:36	10/07/15 9:00
L4-B17-2	1503439-68	Soil	10/06/15 10:37	10/07/15 9:00
L4-B18-0	1503439-69	Soil	10/06/15 10:42	10/07/15 9:00
L4-B18-0.5	1503439-70	Soil	10/06/15 10:43	10/07/15 9:00
L4-B18-1	1503439-71	Soil	10/06/15 10:44	10/07/15 9:00
L4-B18-2	1503439-72	Soil	10/06/15 10:45	10/07/15 9:00



Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova, CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56

Report To : Rebecca Silva

Reported : 10/14/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1503439-01	L1-B1-0	870	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:10	
1503439-02	L1-B1-0.5	360	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:12	
1503439-03	L1-B1-1	48	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:13	
1503439-04	L1-B1-2	5.8	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:14	
1503439-05	L1-B2-0	160	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:15	
1503439-06	L1-B2-0.5	5.3	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:15	
1503439-07	L1-B2-1	7.3	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:17	
1503439-08	L1-B2-2	7.2	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:19	
1503439-09	L1-B3-0	38	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:20	
1503439-10	L1-B3-0.5	6.6	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:23	
1503439-11	L1-B3-1	4.8	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:24	
1503439-12	L1-B3-2	8.5	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:25	
1503439-13	L1-B4-0	100	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:25	
1503439-14	L1-B4-0.5	12	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:26	
1503439-15	L1-B4-1	5.6	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:27	
1503439-16	L1-B4-2	5.0	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:28	
1503439-17	L1-B5-0	490	mg/kg	1.0	1	B5J0259	10/09/2015	10/12/15 14:28	
1503439-18	L1-B5-0.5	28	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:37	
1503439-19	L1-B5-1	4.4	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:38	
1503439-20	L1-B5-2	8.0	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:39	
1503439-21	L2-B6-0	140	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:39	
1503439-22	L2-B6-0.5	11	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:40	
1503439-23	L2-B6-1	4.7	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:41	
1503439-24	L2-B6-2	4.6	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 15:55	
1503439-25	L2-B7-0	33	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:45	
1503439-26	L2-B7-0.5	4.0	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:46	
1503439-27	L2-B7-1	2.4	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:46	
1503439-28	L2-B7-2	2.6	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:49	
1503439-29	L2-B8-0	84	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:49	
1503439-30	L2-B8-0.5	27	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:50	



Certificate of Analysis

Geocon Consultants, Inc.
 3160 Gold Valley Drive, Suite 800
 Rancho Cordova , CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56
 Report To : Rebecca Silva
 Reported : 10/14/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1503439-31	L2-B8-1	9.7	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:51	
1503439-32	L2-B8-2	4.8	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:54	
1503439-33	L2-B9-0	87	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:55	
1503439-34	L2-B9-0.5	8.0	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:55	
1503439-35	L2-B9-1	5.7	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:56	
1503439-36	L2-B9-2	4.7	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:57	
1503439-37	L3-B10-0	140	mg/kg	1.0	1	B5J0260	10/09/2015	10/12/15 14:58	
1503439-38	L3-B10-0.5	48	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:06	
1503439-39	L3-B10-1	6.0	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:07	
1503439-40	L3-B10-2	5.4	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:07	
1503439-41	L3-B11-0	73	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:08	
1503439-42	L3-B11-0.5	28	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:09	
1503439-43	L3-B11-1	4.8	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:10	
1503439-44	L3-B11-2	4.7	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:10	
1503439-45	L3-B12-0	82	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:11	
1503439-46	L3-B12-0.5	63	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:14	
1503439-47	L3-B12-1	61	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:15	
1503439-48	L3-B12-2	15	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:17	
1503439-49	L3-B13-0	330	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:18	
1503439-50	L3-B13-0.5	85	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:18	
1503439-51	L3-B13-1	6.2	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:19	
1503439-52	L3-B13-2	4.5	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:20	
1503439-53	L4-B14-0	400	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:21	
1503439-54	L4-B14-0.5	31	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:23	
1503439-55	L4-B14-1	3.5	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:24	
1503439-56	L4-B14-2	14	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:25	
1503439-57	L4-B15-0	150	mg/kg	1.0	1	B5J0261	10/09/2015	10/12/15 15:26	
1503439-58	L4-B15-0.5	28	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:35	
1503439-59	L4-B15-1	34	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:35	
1503439-60	L4-B15-2	4.1	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:36	



Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova, CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56

Report To : Rebecca Silva

Reported : 10/14/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1503439-61	L4-B16-0	200	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:37	
1503439-62	L4-B16-0.5	7.8	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:38	
1503439-63	L4-B16-1	5.3	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:38	
1503439-64	L4-B16-2	4.0	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:39	
1503439-65	L4-B17-0	580	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:40	
1503439-66	L4-B17-0.5	7.7	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:41	
1503439-67	L4-B17-1	4.9	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:41	
1503439-68	L4-B17-2	4.5	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:46	
1503439-69	L4-B18-0	390	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:47	
1503439-70	L4-B18-0.5	5.4	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:48	
1503439-71	L4-B18-1	4.0	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:48	
1503439-72	L4-B18-2	5.0	mg/kg	1.0	1	B5J0262	10/09/2015	10/12/15 15:49	



Certificate of Analysis

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 Rancho Cordova , CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56
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 Reported : 10/14/2015

QUALITY CONTROL SECTION

Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0259 - EPA 3050 Modified_S									
Blank (B5J0259-BLK1)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	ND	1.0					NR		
Blank (B5J0259-BLK2)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	ND	1.0					NR		
LCS (B5J0259-BS1)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	48.3884	1.0	50.0000		96.8	80 - 120			
Duplicate (B5J0259-DUP1)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	484.530	1.0		487.050	NR		0.519	20	
Duplicate (B5J0259-DUP2)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	5.89752	1.0		7.31680	NR		21.5	20	R
Matrix Spike (B5J0259-MS1)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	769.541	1.0	250.000	487.050	113	35 - 129			
Matrix Spike (B5J0259-MS2)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	211.147	1.0	250.000	7.31680	81.5	35 - 129			
Matrix Spike Dup (B5J0259-MSD1)					Prepared: 10/9/2015 Analyzed: 10/12/2015				
Lead	725.198	1.0	250.000	487.050	95.3	35 - 129	5.93	20	



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Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0260 - EPA 3050 Modified_S									
Blank (B5J0260-BLK1)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
Blank (B5J0260-BLK2)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
LCS (B5J0260-BS1)									
Lead	48.8687	1.0	50.0000		97.7	80 - 120			Prepared: 10/9/2015 Analyzed: 10/12/2015
Duplicate (B5J0260-DUP1)									
									Source: 1503439-37 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	129.823	1.0		136.161	NR		4.77	20	
Duplicate (B5J0260-DUP2)									
									Source: 1503439-27 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	3.85750	1.0		2.43434	NR		45.2	20	R
Matrix Spike (B5J0260-MS1)									
									Source: 1503439-37 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	354.715	1.0	250.000	136.161	87.4	35 - 129			
Matrix Spike (B5J0260-MS2)									
									Source: 1503439-27 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	225.756	1.0	250.000	2.43434	89.3	35 - 129			
Matrix Spike Dup (B5J0260-MSD1)									
									Source: 1503439-37 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	353.738	1.0	250.000	136.161	87.0	35 - 129	0.276	20	



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Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0261 - EPA 3050 Modified_S									
Blank (B5J0261-BLK1)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
Blank (B5J0261-BLK2)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
LCS (B5J0261-BS1)									
Lead	46.9619	1.0	50.0000		93.9	80 - 120			Prepared: 10/9/2015 Analyzed: 10/12/2015
Duplicate (B5J0261-DUP1)									
									Source: 1503439-57 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	80.0268	1.0		150.667			61.2	20	R
Duplicate (B5J0261-DUP2)									
									Source: 1503439-47 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	48.6302	1.0		61.3124			23.1	20	R
Matrix Spike (B5J0261-MS1)									
									Source: 1503439-57 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	349.042	1.0	250.000	150.667	79.4	35 - 129			
Matrix Spike (B5J0261-MS2)									
									Source: 1503439-47 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	259.140	1.0	250.000	61.3124	79.1	35 - 129			
Matrix Spike Dup (B5J0261-MSD1)									
									Source: 1503439-57 Prepared: 10/9/2015 Analyzed: 10/12/2015
Lead	373.240	0.99	247.525	150.667	89.9	35 - 129	6.70	20	



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Project Number : Sac 51/Arden Way, S9805-01-56
 Report To : Rebecca Silva
 Reported : 10/14/2015

Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0262 - EPA 3050 Modified_S									
Blank (B5J0262-BLK1)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
Blank (B5J0262-BLK2)									
Lead	ND	1.0							Prepared: 10/9/2015 Analyzed: 10/12/2015 NR
LCS (B5J0262-BS1)									
Lead	48.1492	1.0	50.0000		96.3	80 - 120			Prepared: 10/9/2015 Analyzed: 10/12/2015
Duplicate (B5J0262-DUP1)									
Lead	5.06732	1.0		5.04782			0.386	20	Source: 1503439-72 Prepared: 10/9/2015 Analyzed: 10/12/2015
Duplicate (B5J0262-DUP2)									
Lead	3.49428	1.0		4.93690			34.2	20	Source: 1503439-67 Prepared: 10/9/2015 Analyzed: 10/12/2015 R
Matrix Spike (B5J0262-MS1)									
Lead	229.525	1.0	250.000	5.04782	89.8	35 - 129			Source: 1503439-72 Prepared: 10/9/2015 Analyzed: 10/12/2015
Matrix Spike (B5J0262-MS2)									
Lead	231.329	1.0	250.000	4.93690	90.6	35 - 129			Source: 1503439-67 Prepared: 10/9/2015 Analyzed: 10/12/2015
Matrix Spike Dup (B5J0262-MSD1)									
Lead	223.028	1.0	250.000	5.04782	87.2	35 - 129	2.87	20	Source: 1503439-72 Prepared: 10/9/2015 Analyzed: 10/12/2015



Certificate of Analysis

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3160 Gold Valley Drive, Suite 800

Rancho Cordova, CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56

Report To : Rebecca Silva

Reported : 10/14/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

CHAIN OF CUSTODY RECORD

Advanced Technologies Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

Method of Transport: 1. CHILLED 2. SEALED 3. SEEALED 4. SEALED 5. OF SPLS MATCH COC 6. PRESERVED 7. PRESERVED 8. PRESERVED

Client: Geocon Consultants, Inc
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Sampler: Matt Tidwell
Project #: S9805-01-56
Date: 10/6/2015
Time: 1530

Relinquished by: (Signature and Printed Name)
Matt Tidwell
Date: 10/6/2015
Time: 1530

Received by: (Signature and Printed Name)
Rebecca Silva
Date: 10/6/2015
Time: 1530

Relinquished by: (Signature and Printed Name)
Rebecca Silva
Date: 10/6/2015
Time: 1530

Special Instructions/Comments:
Homogenize samples for lead analysis
Caltrans Contract 03A2132
5-Day TAT
Please copy Kart Cook on the results and include an excel file. Thank you. (cook@geocoinc.com)

Send Report To:
Alt: Rebecca Silva
Co:
Addr:
City: State: Zip:

Circle or Abid Analysis(es) Requested:
Total Lead (6010B) X

Container(s) Type: baggie

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

TAT: A = Overnight ≤ 24 hrs B = Emergency Next Workday C = Critical 2 Workdays D = Urgent 3 Workdays E = Routine 7 Workdays

Preservatives: H=HCl N=HNO₃ S=H₂SO₄ C=4°C Z=Zn(AC)₂ O=NaOH T=Na₂S₂O₃

LAB USE ONLY	Lab No.	Sample ID / Location	Sample Description	Date	Time	Remarks
	1503439-1	L1-B1-0		10/6/15	0721	
		L1-B1-0.5			0722	
		L1-B1-1			0723	
		L1-B1-2			0724	
		L1-B2-0			0728	
		L1-B2-0.5			0729	
		L1-B2-1			0730	
		L1-B2-2			0731	
		L1-B3-0			0737	
		L1-B3-0.5			0738	
		L1-B3-1			0739	
		L1-B3-2			0740	
		L1-B4-0			0743	
		L1-B4-0.5			0744	
		L1-B4-1			0745	
		L1-B4-2			0746	
		L1-B5-0			0758	
		L1-B5-0.5			0759	
		L1-B5-1			0800	
		L1-B5-2			0801	

FOR LABORATORY USE ONLY

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Tel: (562) 989-4045 • Fax: (562) 989-4040

Method of Transport
 Client
 ATL
 CA OverN
 FedEx
 Other: _____

Sample Condition Upon Receipt
 1. CHILLED
 2. HEADSPACE (VOA)
 3. CONTAINER INTACT
 4. SEALED
 5. # OF SPLS MATCH COC
 6. PRESERVED

Client: Geoco Consultants, Inc
 Attention: Rebecca Silva
 Project Name: Sac 511/Arden Way
 Project #: S9805-01-56

Address: 3160 Gold Valley Drive, Suite 800
 City: Rancho Cordova State: CA
 Zip Code: 95742

Sampler: Matt Tidwell
 Received by: (Signature and Printed Name) *Matt Tidwell*
 Date: 10/6/15 Time: 1530
 Received by: (Signature and Printed Name) *Rebecca Silva*
 Date: 10/6/15 Time: 1530

Special Instructions/Comments:
 Homogenize samples for lead analysis
 Caltrans Contract 03A2132
 5-Day TAT
 Please copy Kari Cook on the results and include an excel file. Thank you. (cook@geoconinc.com)

Bill To: _____
 Attn: _____
 Co: _____
 Addr: _____
 City: _____ State: _____ Zip: _____

Circle or Add Analysis(es) Requested: _____
 Total Lead (6010B): X

LAB USE ONLY:	Lab No.	Sample ID / Location	Sample Description	Date	Time	Container(s)	TAT #	Type	REMARKS
	883-439-51	L4-B16-0		10/6/15	1027		5-day	1	baggie
		L4-B16-0.5			1028				
		L4-B16-1			1029				
		L4-B16-2			1030				
		L4-B17-0			1034				
		L4-B17-0.5			1035				
		L4-B17-1			1036				
		L4-B17-2			1037				
		L4-B18-0			1040				
		L4-B18-0.5			1043				
		L4-B18-1			1044				
		L4-B18-2			1045				

QA/QC
 RTNE
 CT
 SWRCB Logcode
 OTHER

Preservatives:
 H=HCl N=HNO₃ S=H₂SO₄ C=4°C
 Z=Zn(Ac)₂ O=NaOH T=Na₂S₂O₃

TAT: A = Overnight ≤ 24 hrs B = Emergency Next Workday C = Critical 2 Workdays D = Urgent 3 Workdays E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Print J=Jar B=Teclar G=Glass P=Plastic M=Metal



October 21, 2015

Rebecca Silva
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1503439
Client Reference : Sac 51/Arden Way, S9805-01-56

Enclosed are the results for sample(s) received on October 07, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Rodriguez', written in a cursive style.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Geocon Consultants, Inc.

3160 Gold Valley Drive, Suite 800

Rancho Cordova , CA 95742

Project Number : Sac 51/Arden Way, S9805-01-56

Report To : Rebecca Silva

Reported : 10/21/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
L1-B1-0	1503439-01	Soil	10/06/15 7:21	10/07/15 9:00
L1-B1-0.5	1503439-02	Soil	10/06/15 7:22	10/07/15 9:00
L1-B2-0	1503439-05	Soil	10/06/15 7:28	10/07/15 9:00
L1-B4-0	1503439-13	Soil	10/06/15 7:43	10/07/15 9:00
L1-B5-0	1503439-17	Soil	10/06/15 7:58	10/07/15 9:00
L2-B6-0	1503439-21	Soil	10/06/15 8:30	10/07/15 9:00
L2-B8-0	1503439-29	Soil	10/06/15 8:46	10/07/15 9:00
L2-B9-0	1503439-33	Soil	10/06/15 8:53	10/07/15 9:00
L3-B10-0	1503439-37	Soil	10/06/15 9:02	10/07/15 9:00
L3-B11-0	1503439-41	Soil	10/06/15 9:09	10/07/15 9:00
L3-B12-0	1503439-45	Soil	10/06/15 9:28	10/07/15 9:00
L3-B12-0.5	1503439-46	Soil	10/06/15 9:29	10/07/15 9:00
L3-B12-1	1503439-47	Soil	10/06/15 9:30	10/07/15 9:00
L3-B13-0	1503439-49	Soil	10/06/15 9:34	10/07/15 9:00
L3-B13-0.5	1503439-50	Soil	10/06/15 9:35	10/07/15 9:00
L4-B14-0	1503439-53	Soil	10/06/15 10:06	10/07/15 9:00
L4-B15-0	1503439-57	Soil	10/06/15 10:20	10/07/15 9:00
L4-B16-0	1503439-61	Soil	10/06/15 10:27	10/07/15 9:00
L4-B17-0	1503439-65	Soil	10/06/15 10:34	10/07/15 9:00
L4-B18-0	1503439-69	Soil	10/06/15 10:42	10/07/15 9:00



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Project Number : Sac 51/Arden Way, S9805-01-56

Report To : Rebecca Silva

Reported : 10/21/2015

TCLP Metals by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1503439-17	L1-B5-0	0.19	mg/L	0.050	1	B5J0551	10/20/2015	10/21/15 11:29	
1503439-53	L4-B14-0	0.64	mg/L	0.050	1	B5J0551	10/20/2015	10/21/15 11:31	
1503439-65	L4-B17-0	0.25	mg/L	0.050	1	B5J0551	10/20/2015	10/21/15 11:33	
1503439-69	L4-B18-0	0.27	mg/L	0.050	1	B5J0551	10/20/2015	10/21/15 11:36	

STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1503439-01	L1-B1-0	42	mg/L	1.0	20	B5J0540	10/20/2015	10/20/15 12:40	
1503439-02	L1-B1-0.5	11	mg/L	1.0	20	B5J0540	10/20/2015	10/20/15 12:42	
1503439-05	L1-B2-0	4.7	mg/L	1.0	20	B5J0540	10/20/2015	10/20/15 12:45	
1503439-13	L1-B4-0	6.2	mg/L	1.0	20	B5J0540	10/20/2015	10/20/15 12:47	
1503439-17	L1-B5-0	18	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:03	
1503439-21	L2-B6-0	8.8	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:12	
1503439-29	L2-B8-0	3.1	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:14	
1503439-33	L2-B9-0	7.3	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:16	
1503439-37	L3-B10-0	37	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:23	
1503439-41	L3-B11-0	3.6	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:25	
1503439-45	L3-B12-0	3.6	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:27	
1503439-46	L3-B12-0.5	ND	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:30	
1503439-47	L3-B12-1	2.7	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:32	
1503439-49	L3-B13-0	21	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:34	
1503439-50	L3-B13-0.5	4.7	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:41	
1503439-53	L4-B14-0	24	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:44	
1503439-57	L4-B15-0	9.4	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:50	
1503439-61	L4-B16-0	11	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:53	
1503439-65	L4-B17-0	25	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:55	
1503439-69	L4-B18-0	8.1	mg/L	1.0	20	B5J0541	10/20/2015	10/20/15 13:57	



Certificate of Analysis

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Project Number : Sac 51/Arden Way, S9805-01-56
 Report To : Rebecca Silva
 Reported : 10/21/2015

QUALITY CONTROL SECTION

TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0551 - EPA 3010A_S									
Blank (B5J0551-BLK1)									
Lead	ND	0.050							Prepared: 10/20/2015 Analyzed: 10/21/2015 NR
LCS (B5J0551-BS1)									
Lead	0.937412	0.050	1.00000		93.7	80 - 120			Prepared: 10/20/2015 Analyzed: 10/21/2015
Duplicate (B5J0551-DUP1)									
Lead	0.052561	0.050		0.056980	NR		8.07	20	Source: 1503438-07 Prepared: 10/20/2015 Analyzed: 10/21/2015
Matrix Spike (B5J0551-MS1)									
Lead	2.25286	0.050	2.50000	0.056980	87.8	77 - 121			Source: 1503438-07 Prepared: 10/20/2015 Analyzed: 10/21/2015
Matrix Spike Dup (B5J0551-MSD1)									
Lead	2.21984	0.050	2.50000	0.056980	86.5	77 - 121	1.48	20	Source: 1503438-07 Prepared: 10/20/2015 Analyzed: 10/21/2015



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STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0540 - STLC_S Extraction									
Blank (B5J0540-BLK1)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	ND	1.0					NR		
Blank (B5J0540-BLK2)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	ND	1.0					NR		
LCS (B5J0540-BS1)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	1.95680		2.00000		97.8	80 - 120			
Duplicate (B5J0540-DUP1)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	2.29527		1.0	2.31267	NR		0.755	20	
Duplicate (B5J0540-DUP2)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	7.83633		1.0	7.65850	NR		2.30	20	
Matrix Spike (B5J0540-MS1)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	4.56533		2.50000	2.31267	90.1	44 - 130			
Matrix Spike (B5J0540-MS2)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	9.45682		2.50000	7.65850	71.9	44 - 130			
Matrix Spike Dup (B5J0540-MSD1)					Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	4.55191		2.50000	2.31267	89.6	44 - 130	0.294	20	



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STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B5J0541 - STLC_S Extraction								
Blank (B5J0541-BLK1)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	ND	1.0			NR			
Blank (B5J0541-BLK2)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	ND	1.0			NR			
LCS (B5J0541-BS1)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	1.93528		2.00000		96.8 80 - 120			
Duplicate (B5J0541-DUP1)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	17.8961		1.0	17.8107	NR	0.479	20	
Duplicate (B5J0541-DUP2)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	21.2147		1.0	21.4003	NR	0.871	20	
Matrix Spike (B5J0541-MS1)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	19.9181		2.50000	17.8107	84.3	44 - 130		
Matrix Spike (B5J0541-MS2)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	24.8273		2.50000	21.4003	137	44 - 130		M1
Matrix Spike Dup (B5J0541-MSD1)				Prepared: 10/20/2015 Analyzed: 10/20/2015				
Lead	20.2135		2.50000	17.8107	96.1	44 - 130	1.47	20



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Report To : Rebecca Silva

Reported : 10/21/2015

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

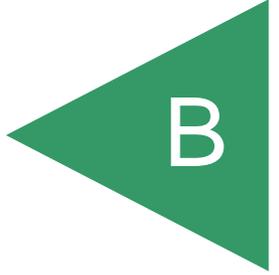
Diane Galvan

From: Rebecca Silva [silva@geoconinc.com]
Sent: Wednesday, October 14, 2015 3:11 PM
To: Diane Galvan
Subject: RE: Results/EDD/Invoice - Sac 51/Arden Way (1503439)

Hi Diane - Please assign the 20 samples with total lead >50 mg/kg for WET lead on 5-day TAT. Also, please analyze the 4 samples with total lead = or > 400 mg/kg for TCLP lead on 5-day TAT.

Thanks!
Rebecca

APPENDIX



Pb Location 1 - 0 to 0.5

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	38	Mean	331.6
Maximum	870	Median	160
SD	347.9	Std. Error of Mean	155.6
Coefficient of Variation	1.049	Skewness	1.16
Mean of logged Data	5.256	SD of logged Data	1.249
90% Standard Bootstrap UCL	508	95% Standard Bootstrap UCL	560

Pb Location 1 - 0.5 to 1

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	5.3	Mean	82.38
Maximum	360	Median	12
SD	155.5	Std. Error of Mean	69.52
Coefficient of Variation	1.887	Skewness	2.218
Mean of logged Data	3.052	SD of logged Data	1.711
90% Standard Bootstrap UCL	165	95% Standard Bootstrap UCL	186

Pb Location 1 - 1 to 2

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	4.4	Mean	14.02
Maximum	48	Median	5.6
SD	19.03	Std. Error of Mean	8.51
Coefficient of Variation	1.357	Skewness	2.217
Mean of logged Data	2.126	SD of logged Data	0.994
90% Standard Bootstrap UCL	23.6	95% Standard Bootstrap UCL	26.7

Pb Location 1 - 2 to 3

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	5	Mean	6.9
Maximum	8.5	Median	7.2
SD	1.473	Std. Error of Mean	0.659
Coefficient of Variation	0.213	Skewness	-0.357
Mean of logged Data	1.912	SD of logged Data	0.223
90% Standard Bootstrap UCL	7.65	95% Standard Bootstrap UCL	7.88

Pb Location 2 - 0 to 0.5

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	33	Mean	86
Maximum	140	Median	85.5
SD	43.7	Std. Error of Mean	21.85
Coefficient of Variation	0.508	Skewness	0.0685
Mean of logged Data	4.334	SD of logged Data	0.605
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 2 - 0.5 to 1

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	4	Mean	12.5
Maximum	27	Median	9.5
SD	10.08	Std. Error of Mean	5.041
Coefficient of Variation	0.807	Skewness	1.522
Mean of logged Data	2.29	SD of logged Data	0.793
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 2 - 1 to 2

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	2.4	Mean	5.625
Maximum	9.7	Median	5.2
SD	3.048	Std. Error of Mean	1.524
Coefficient of Variation	0.542	Skewness	0.785
Mean of logged Data	1.609	SD of logged Data	0.577
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 2 - 2 to 3

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	2.6	Mean	4.175
Maximum	4.8	Median	4.65
SD	1.053	Std. Error of Mean	0.527
Coefficient of Variation	0.252	Skewness	-1.964
Mean of logged Data	1.399	SD of logged Data	0.296
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 3 - 0 to 0.5

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	73	Mean	156.3
Maximum	330	Median	111
SD	119.6	Std. Error of Mean	59.79
Coefficient of Variation	0.765	Skewness	1.659
Mean of logged Data	4.859	SD of logged Data	0.688
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 3 - 0.5 to 1

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	28	Mean	56
Maximum	85	Median	55.5
SD	24.07	Std. Error of Mean	12.03
Coefficient of Variation	0.43	Skewness	0.108
Mean of logged Data	3.947	SD of logged Data	0.472
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 3 - 1 to 2

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	4.8	Mean	19.5
Maximum	61	Median	6.1
SD	27.67	Std. Error of Mean	13.84
Coefficient of Variation	1.419	Skewness	1.997
Mean of logged Data	2.324	SD of logged Data	1.197
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 3 - 2 to 3

Total Number of Observations	4	Number of Distinct Observations	4
Minimum	4.5	Mean	7.4
Maximum	15	Median	5.05
SD	5.081	Std. Error of Mean	2.541
Coefficient of Variation	0.687	Skewness	1.966
Mean of logged Data	1.862	SD of logged Data	0.57
90% Standard Bootstrap UCL	N/A	95% Standard Bootstrap UCL	N/A

Pb Location 4 - 0 to 0.5

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	150	Mean	344
Maximum	580	Median	390
SD	172.7	Std. Error of Mean	77.24
Coefficient of Variation	0.502	Skewness	0.253
Mean of logged Data	5.726	SD of logged Data	0.554
90% Standard Bootstrap UCL	432	95% Standard Bootstrap UCL	454

Pb Location 4 - 0.5 to 1

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	5.4	Mean	15.98
Maximum	31	Median	7.8
SD	12.42	Std. Error of Mean	5.556
Coefficient of Variation	0.778	Skewness	0.614
Mean of logged Data	2.51	SD of logged Data	0.812
90% Standard Bootstrap UCL	22.3	95% Standard Bootstrap UCL	24.3

Pb Location 4 - 1 to 2

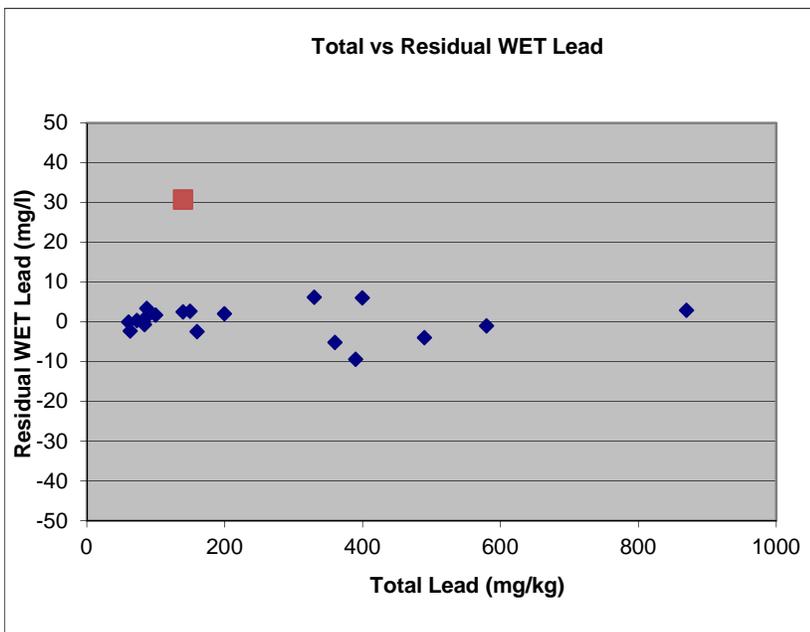
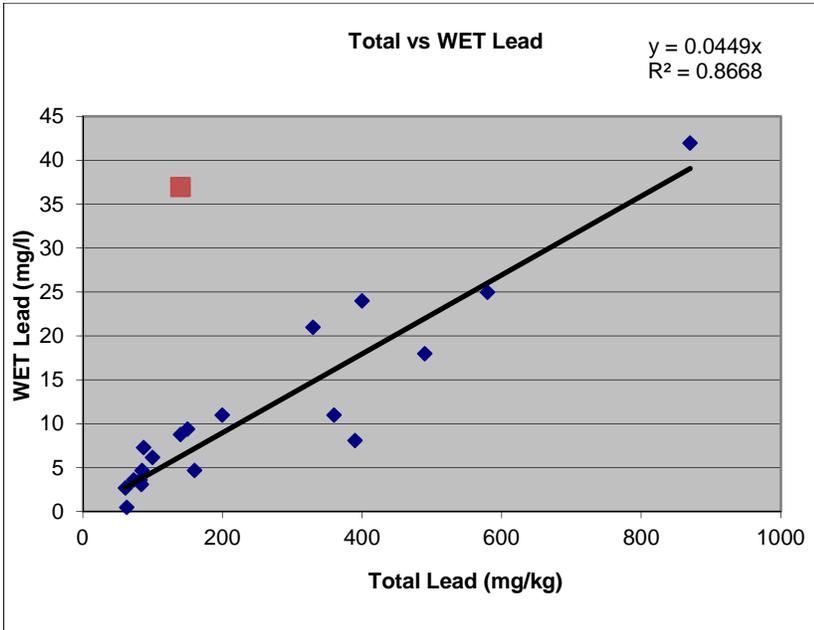
Total Number of Observations	5	Number of Distinct Observations	5
Minimum	3.5	Mean	10.34
Maximum	34	Median	4.9
SD	13.25	Std. Error of Mean	5.924
Coefficient of Variation	1.281	Skewness	2.22
Mean of logged Data	1.884	SD of logged Data	0.932
90% Standard Bootstrap UCL	17.1	95% Standard Bootstrap UCL	19.1

Pb Location 4 - 2 to 3

Total Number of Observations	5	Number of Distinct Observations	5
Minimum	4	Mean	6.32
Maximum	14	Median	4.5
SD	4.311	Std. Error of Mean	1.928
Coefficient of Variation	0.682	Skewness	2.19
Mean of logged Data	1.71	SD of logged Data	0.527
90% Standard Bootstrap UCL	8.54	95% Standard Bootstrap UCL	9.16

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual	Squared	slope	y-intercept
				WET Lead (mg/l)	Residual WET Lead (mg/l)		
L3-B12-1	1 to 2	61	2.7	-0.04	0.00	0.0449139	0
L3-B11-0	0 to 0.5	73	3.6	0.32	0.10		
L3-B12-0	0 to 0.5	82	3.6	-0.08	0.01		
L3-B13-0.5	0.5 to 1	85	4.7	0.88	0.78		
L2-B8-0	0 to 0.5	84	3.1	-0.67	0.45		
L1-B1-0	0 to 0.5	870	42	2.92	8.56		
L1-B4-0	0 to 0.5	100	6.2	1.71	2.92		
L4-B16-0	0 to 0.5	200	11	2.02	4.07		
L2-B6-0	0 to 0.5	140	8.8	2.51	6.31		
L4-B17-0	0 to 0.5	580	25	-1.05	1.10		
L4-B15-0	0 to 0.5	150	9.4	2.66	7.09		
L3-B12-0.5	0.5 to 1	63	0.5	-2.33	5.43		
L1-B2-0	0 to 0.5	160	4.7	-2.49	6.18		
L2-B9-0	0 to 0.5	87	7.3	3.39	11.51		
L1-B5-0	0 to 0.5	490	18	-4.01	16.06		
L4-B14-0	0 to 0.5	400	24	6.03	36.41		
L3-B13-0	0 to 0.5	330	21	6.18	38.17		
L1-B1-0.5	0.5 to 1	360	11	-5.17	26.72		
L4-B18-0	0 to 0.5	390	8.1	-9.42	88.67		
<u>Not Used</u>							
L3-B10-0	0 to 0.5	140	37	30.71	943.23		

0.9310209



SUMMARY OF STATISTICAL LEAD ANALYSIS
 EA 03-4F9801
 STATE ROUTE 51 MEDIAN BARRIER
 SACRAMENTO, CALIFORNIA

Location 1 (borings B1 to B5)

TOTAL LEAD

	90% UCL	95% UCL
0 ft	508	560
0.5 ft	165	186
1 ft	23.6	26.7
2 ft	7.65	7.88

EXCAVATION SCENARIOS

Excavation Depth	Weighted Averages			
	90% UCL		95% UCL	
	Total Lead (mg/kg)	WET Lead* (mg/l)	Total Lead (mg/kg)	WET Lead* (mg/kg)
0 to 0.5 ft	508	23	560	25
<i>Underlying Soil (0.5 to 2 ft)</i>	71	3.2	80	3.6
<i>Underlying Soil (0.5 to 3 ft)</i>	46	2.0	51	2.3
0 to 1 ft	337	15.1	373	16.7
<i>Underlying Soil (1 to 2 ft)</i>	23.6	1.1	26.7	1.2
<i>Underlying Soil (1 to 3 ft)</i>	16	0.7	17	0.8
0 to 2 ft	180	8.1	200	9.0
<i>Underlying Soil (2 to 3 ft)</i>	7.7	0.3	7.9	0.4
0 to 3 ft	123	5.5	136	6.1

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = WET lead concentrations are predicted using slope of regression line,
 where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0449 x$

SUMMARY OF STATISTICAL LEAD ANALYSIS
EA 03-4F9801
STATE ROUTE 51 MEDIAN BARRIER
SACRAMENTO, CALIFORNIA

Location 2 (borings B6 to B9)

TOTAL LEAD

	Maximum
0 ft	140
0.5 ft	27
1 ft	9.7
2 ft	4.8

EXCAVATION SCENARIOS

Excavation Depth	Weighted Averages	
	Maximum Total Lead (mg/kg)	WET Lead* (mg/l)
0 to 0.5 ft	140	6.3
<i>Underlying Soil (0.5 to 2 ft)</i>	<i>15</i>	<i>0.7</i>
<i>Underlying Soil (0.5 to 3 ft)</i>	<i>11</i>	<i>0.5</i>
0 to 1 ft	84	3.7
<i>Underlying Soil (1 to 2 ft)</i>	<i>9.7</i>	<i>0.4</i>
<i>Underlying Soil (1 to 3 ft)</i>	<i>7.3</i>	<i>0.3</i>
0 to 2 ft	47	2.1
<i>Underlying Soil (2 to 3 ft)</i>	<i>4.8</i>	<i>0.2</i>
0 to 3 ft	33	1.5

Notes:

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = WET lead concentrations are predicted using slope of regression line,
where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0449 x$

SUMMARY OF STATISTICAL LEAD ANALYSIS
 EA 03-4F9801
 STATE ROUTE 51 MEDIAN BARRIER
 SACRAMENTO, CALIFORNIA

Location 3 (borings B10 to B13)

TOTAL LEAD

	Maximum
0 ft	330
0.5 ft	85
1 ft	61
2 ft	15

EXCAVATION SCENARIOS

Excavation Depth	Weighted Averages	
	Maximum Total Lead (mg/kg)	WET Lead* (mg/l)
0 to 0.5 ft	330	14.8
<i>Underlying Soil (0.5 to 2 ft)</i>	69	3.1
<i>Underlying Soil (0.5 to 3 ft)</i>	47	2.1
0 to 1 ft	208	9.3
<i>Underlying Soil (1 to 2 ft)</i>	61	2.7
<i>Underlying Soil (1 to 3 ft)</i>	38	1.7
0 to 2 ft	134	6.0
<i>Underlying Soil (2 to 3 ft)</i>	15	0.7
0 to 3 ft	95	4.2

Notes:

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = WET lead concentrations are predicted using slope of regression line,
 where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0449 x$

SUMMARY OF STATISTICAL LEAD ANALYSIS
 EA 03-4F9801
 STATE ROUTE 51 MEDIAN BARRIER
 SACRAMENTO, CALIFORNIA

Location 4 (borings B14 to B18)

TOTAL LEAD

	90% UCL	95% UCL
0 ft	432	454
0.5 ft	22	24
1 ft	17.1	19.1
2 ft	8.54	9.16

EXCAVATION SCENARIOS

Excavation Depth	Weighted Averages			
	90% UCL Total Lead (mg/kg)	WET Lead* (mg/l)	95% UCL Total Lead (mg/kg)	WET Lead* (mg/kg)
0 to 0.5 ft	432	19	454	20
<i>Underlying Soil (0.5 to 2 ft)</i>	<i>19</i>	<i>0.8</i>	<i>21</i>	<i>0.9</i>
<i>Underlying Soil (0.5 to 3 ft)</i>	<i>15</i>	<i>0.7</i>	<i>16</i>	<i>0.7</i>
0 to 1 ft	227	10.2	239	11
<i>Underlying Soil (1 to 2 ft)</i>	<i>17.1</i>	<i>0.8</i>	<i>19.1</i>	<i>0.9</i>
<i>Underlying Soil (1 to 3 ft)</i>	<i>13</i>	<i>0.6</i>	<i>14</i>	<i>0.6</i>
0 to 2 ft	122	5.5	129	5.8
<i>Underlying Soil (2 to 3 ft)</i>	<i>8.5</i>	<i>0.4</i>	<i>9.2</i>	<i>0.4</i>
0 to 3 ft	84	3.8	89	4.0

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = WET lead concentrations are predicted using slope of regression line,
 where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0449 x$

Website for non-potable water fill station:

<http://www.regionalsan.com/recycled-water-fill-station>