



Catalyst Housing Group, Inc.
2400 Sand Hill Road, Suite 100
Menlo Park, CA 94025

Project No. E05538.003
13 December 2016

Attention: Mr. Bradley Lancaster

Subject: **DOWNTOWN GATEWAY**
Pacific St. and Midas Ave., Rocklin, California
Phase II Environmental Site Assessment

- References:
1. Draft Phase I Environmental Site Assessment, Vacant Property Corner of Midas Avenue and Pacific Street, Rocklin, California, prepared by Iris Environmental, dated 3 October 2005 (only a partial document was provided to Youngdahl Consulting Group, Inc. for review).
 2. Pacific Street Phase II Soil Investigation, NWC Pacific Street and Midas Avenue, Rocklin, Placer County, California, prepared by Youngdahl Consulting Group, Inc. (Project No. E05538.000), dated 8 March 2006.
 3. Geotechnical Engineering Report, Pacific and Midas Avenue, Mixed-Use Development, Rocklin, California, prepared by Wallace-Kuhl Associates, Inc. (Project No. 7543.01), dated 30 March 2007.
 4. No Further Action Determination, Z.L. Rocklin Limited Site, 4770 Pacific Street, Rocklin, Placer County.
 5. Summary of Site Records Review 4770 Pacific Street, Rocklin, CA, Technical Memorandum, prepared by CKG Environmental, Inc., dated 20 January 2014.
 6. Phase I Environmental Site Assessment, Downtown Gateway, Rocklin, Placer County, prepared by Youngdahl Consulting Group, Inc., (Project No. E05538.001), dated 22 September 2015.

Dear Mr. Lancaster:

In accordance with your authorization, Youngdahl Consulting Group, Inc. (Youngdahl) has performed a Phase II Environmental Site Assessment (Phase II ESA) for the Downtown Gateway project located west of Pacific Street and north of Midas Avenue in Rocklin, California (subject site). The purpose of this Phase II Soil Investigation was to supplement existing data from our previous Phase II ESA (Reference No. 2) with another suite of near surface soil sampling. This was designed to address the No Further Action Determination requirements and the recommendations of CKG Environmental, Inc. The goal was to develop a sufficient level of confidence regarding potential constituents of concern so as to not have to prepare a management plan to address potential contaminants.

Background

In 2006, Youngdahl performed a Phase II Soil Investigation (Reference No. 2) to address items identified in an earlier Draft Phase I Environmental Site Assessment prepared by Iris Environmental (Reference No. 1). These items included the following possible environmental concerns:

- Two former Spills, Leaks, Investigations, and Cleanup (SLIC) sites located on the subject property until the mid-1990's;
- A listing of an aviation fuel release on the subject property;
- A railroad spur that was located on the subject property trending north-south in the middle of the property;
- A current SLIC site located adjacent to the northern boundary of the subject property with known groundwater and soil contamination; and
- A historical UST located on the subject property with no documentation of tank removal or if the tank was filled.

Youngdahl reviewed historical aerial photographs to determine the past uses on the subject property. The aerial photographs showed buildings located on the eastern portion of the subject property along Pacific Street.

The phase II and a geotechnical engineering study (Reference No. 3) identified fills containing construction debris, most likely left from the demolition of the buildings once on the site. Youngdahl collected six samples from test pits (TP-1 at 5' through TP-6 at 5'). The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), chlorinated herbicides, Semi-Volatile Organic Compounds, total lead, and a full hydrocarbon fuel fingerprint. Laboratory results for this investigation are summarized in the following table:

Table 1
Previous Investigation Laboratory Results for Pacific Street

Analytes	EPA PRG⁵ (Residential Use)¹	Title 22 TTLC^{1, 4}	Sample TP-1 @ 5'¹	Sample TP-2 @ 5'¹	Sample TP-3 @ 5'¹	Sample TP-4 @ 5'¹	Sample TP-5 @ 5'¹	Sample TP-6 @ 5'¹
Acetone (0.05) ²	14,000	None	ND	ND	0.082	0.066	0.178	0.628
Carbon Tetrachloride (0.005) ²	0.25	0.50	ND	ND	0.005	ND	ND	ND
Lead (1.0) ²	400	1000	1.0	ND	ND	3.0	ND	2.5
Motor Oil (10.0) ²	None	None	ND	ND	ND	19.3	ND	ND

¹Concentrations reported in mg/Kg; mg/Kg = parts per million (milligrams per kilogram)

²Reporting limits are provided in parenthesis (1.0)

³ND - Not detected at or above the indicated reporting limit

⁴TTLC - Total Threshold Limit Concentration

⁵PRG - EPA Region 9 Preliminary Remediation Goals (2004)

A No Further Action Determination by the Central Valley Regional Water Quality Control Board (Reference No. 4) indicates that the site may be redeveloped for residential and/or commercial use under the condition that any debris or soil impacted with diesel or motor oil that is discovered during development of the property must be removed. The Technical Memorandum prepared by CKG, Environmental, Inc. (Reference No. 5) provides a summary of numerous investigations and recommends that a site management plan be prepared to address potential contaminants that could be encountered during site development. The Phase I Environmental Site Assessment prepared by Youngdahl Consulting Group Inc. (Youngdahl) identified recognizable environmental conditions associated with the former buildings that were on the site in the form of lead from lead paint, chlorinated pesticides that would have been used against termites, and asbestos from asbestos building materials.

Sampling

On 8 July 2016, Youngdahl collected fourteen (14) near-surface soil samples throughout the subject property (Figure 1 – Site Plan). Soil samples were placed into a pre-cleaned glass sample jar and an 18 oz Whirl-Pak bag. Following sample collection, each jar was labeled, sealed within a plastic bag, and placed into an ice filled cooler. Samples collected in Whirl-Pak

bags were sealed and labeled. The soil sampling tools were decontaminated between each sample location. At the completion of sampling activities, the samples were transported to California Laboratory Services, Inc. (California Department of Health Services ELAP No. 1233) and Forensic Analytical Laboratories, Inc. (California State ELAP No. 1202) under chain-of-custody protocols. All of the samples were analyzed for CAM17 metals (EPA Methods 6010B, 6020, and 7471A), chlorinated pesticides (EPA Method 8081A), and bulk asbestos (EPA Method 600/R-93-116). The Laboratory reports are provided as an attachment to this report.

Findings

All samples were non-detect for asbestos. Non-detected CAM17 metals in all samples include beryllium, selenium, silver, and thallium. All other CAM17 metals were above the laboratory reporting limits. Analytes with concentrations exceeding the California Department of Toxic Substances Control Screening Levels (DTSC-SLs), the State of California Soluble Threshold Limit Concentration (STLC), and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) included lead and arsenic. Arsenic concentrations ranged from non-detect (<1.0 mg/kg) in sample G-7 to 46 mg/kg in sample G-1. Lead concentrations ranged from non-detect (<2.5 mg/kg) in sample G-8 to 120 mg/kg in samples G-1 and G-10. A Waste Extraction Test (WET) for lead on samples G-1, G-4, G-5, G-10 @ 1', and G-13 revealed soluble concentrations ranging from non-detect to 1.8 mg/L. Organochlorine Pesticides DDT and DDE were in concentrations above laboratory limits in sample G-13 (4,4'-DDE: 39 µg; 4,4'-DDT: 50 µg), and do not exceed DTSC-SLs, ESLs, TTLCs, or STLCs. The laboratory results are summarized in Tables 2 and 3.

Discussion of Analytical Results

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) developed a set of Environmental Screening Levels (ESLs). These are a series of lookup tables using a tiered approach that reflect concentrations of hazardous chemicals that they consider to be represent the thresholds of concern for risk to human health. The California Department of Toxic Substances Control, Human and Ecological Risk Office developed human health risk based screening values (DTSC-SLs) that include lead and arsenic in soil. Also, the State of California has established a procedure with set limits for hazardous waste characterization. Title 22 of the California Code of Regulations (CCR) provides the Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) when determining hazardous waste characterization. Analytes exceeding the TTLC are classified as hazardous waste. The STLC is meant to simulate the conditions that may be present in a landfill where water passing through the surface may dissolve soluble materials and travel on into groundwater, leading to contamination. A target analyte exceeding ten times the STLC, but not exceeding the TTLC, may be subject to a Waste Extraction Test (WET) to check for soluble chemicals. The factor of ten is necessary to compensate for the 1:10 dilution factor present in the STLC. Screening levels for residential soils were used due to apartment housing being proposed for this project.

SFBRWQCB ESL in soil:

Arsenic

Residential developments, 0.067 mg/kg;
Commercial/Industrial developments, 0.31 mg/kg.

Lead

Residential developments, 80 mg/kg;
Commercial/Industrial developments, 160 mg/kg.

DDT, DDE

Residential developments, 1900 µg/kg;
Commercial/Industrial developments, 8500 µg/kg.



California Department of Toxic Control-modified Screening Levels in Soil:

Cancer Endpoint

Arsenic

Residential developments, 0.11 mg/kg;

Commercial/Industrial developments, 0.36 mg/kg.

Lead

Residential developments, N/A.

Commercial/Industrial developments, N/A

Non-Cancer Endpoint

Arsenic

Residential developments, 0.4 mg/kg;

Commercial/Industrial developments, 4.2 mg/kg.

Lead

Residential developments, 80 mg/kg;

Commercial/Industrial developments, 320 mg/kg.

Title 22 of the California Code of Regulations Characteristic of Toxicity

Arsenic

TTLIC: 500 mg/kg

STLC: 5.0 mg/kg

Lead

TTLIC: 1000 mg/kg

STLC: 5.0 mg/kg

DDT, DDE

TTLIC: 1000 µg/kg

STLC: 100 µg/kg

Lead Concentrations

13 of 14 samples have lead concentrations above laboratory reporting limits. The laboratory reporting limits for lead were 2.5 mg/kg. Lead concentrations are greater than or equal to 100 mg/kg in samples G-1, G-10, and G-13. Five samples (G-1, G-4, G-5, G-10, and G-13) were more than ten times above the STLC, but did not exceed the TTLIC. Lead concentrations from WET tests conducted on the five samples did not exceed the STLC value of 5.0 mg/L.

Arsenic Concentrations

Analytical results reported concentrations exceeding 1.0 mg/kg in all but one sample, ranging from 1.2 to 46 mg/kg. These concentrations are above the ESL and DTSC-SL residential values. Arsenic is naturally present in soil, and the USEPA does not require site mitigation for concentrations at or below naturally occurring background levels. Several studies characterizing the naturally occurring background levels for arsenic describe concentrations typically exceeding screening levels.

According to the San Francisco Bay Region Water Quality Control Board, background arsenic concentrations in soil were discussed in a master's thesis completed in December 2011. "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region", a thesis submitted to the faculty of San Francisco State University in partial fulfillment of The Requirements for The Degree Master of Science In Geosciences By Dylan Jacques Duvergé, San Francisco, California discussed the first regional estimate of background arsenic concentrations in the San Francisco Bay Region. Soil analysis data within the nine-county San Francisco Bay Area (Alameda, Contra Costa, Marin, Napa, San Mateo, San Francisco, Santa Clara, Solano, and Sonoma Counties) was compiled from the State Water Resources Control

Board's Geotracker online database to determine the background levels and variability of arsenic concentrations. Arsenic analysis of 1,454 soil samples across 77 sites were screened for inclusion in the study. The proposed upper estimate for background arsenic (99th percentile) within undifferentiated urbanized flatland soils of 11 mg/kg is markedly lower than commonly cited sources in the literature, such as 42 mg/kg for the Great Valley Sequence discussed in Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory, Lawrence Berkeley National Laboratory and Parsons Engineering Inc. (2002). No significant relationship was found between arsenic concentrations and sampling depth. These findings represent the first regional estimates of background arsenic concentrations in the San Francisco Bay Area.

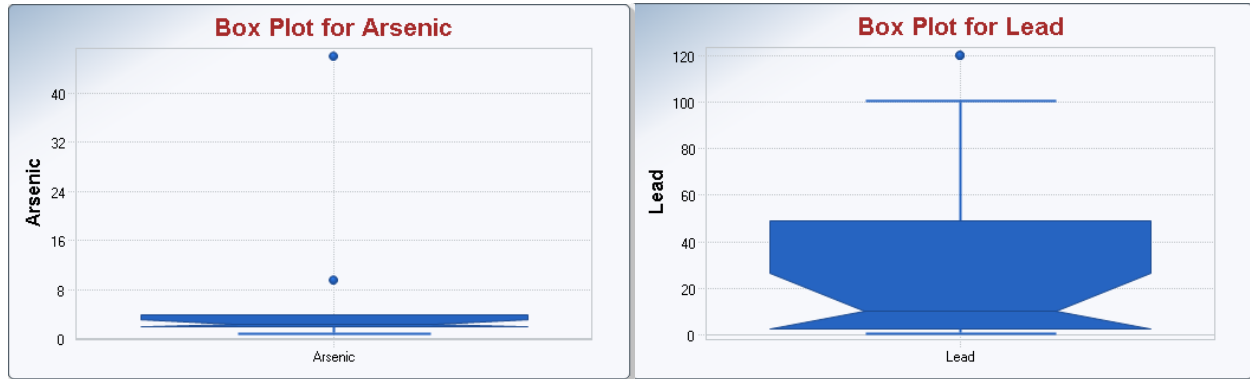
On the state level, an important source of information on background trace metals is from the Kearny Foundation Special Report on Background Concentrations of Trace and Major Elements in California Soils (G. R. Bradford et al., Kearny Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, 1996). The study selected 50 samples from 22 benchmark soils from a collection of soil profiles held at the University of California, Berkeley (the soil profiles were collected in 1967). The profiles were taken from sites distant from known point sources of contamination throughout the state, primarily within agricultural fields. Arsenic concentrations across the 22 "benchmark" soils had an average of 3.5 mg/kg, a standard deviation of 2.5 mg/kg, and values ranging from 0.6 - 11 mg/kg

The Department of Toxic Substances Control (DTSC) conducted a study on background arsenic concentrations in soil using a large data set from school sites in Los Angeles County (Determination of a Southern California Regional Background Arsenic Concentration in Soil, G. Chernoff, W. Bosan, and D. Oudiz, California Department of Toxic Substances Control). DTSC established a regional background arsenic concentration in soil that can be used as a screening tool for sites throughout southern California. The data set included the combination of data from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, with the largest number of sites being from Los Angeles County (19 school sites) and arsenic data points (1097 samples). Los Angeles County served as the model for the statistical derivation of background arsenic and was estimated using both the 95% confidence limit of the 99th quantile of the arsenic data set and a distribution-free, nonparametric analysis. Both statistical methods resulted in an upper-bound arsenic concentration of approximately 12 mg/kg for Los Angeles County, and similar upper-bound concentrations for each of the other southern California counties. This resulted in an upper-bound estimate of 12 mg/kg for arsenic in southern California. An evaluation for northern California is being conducted by the DTSC in order to derive arsenic screening levels State-wide.

Statistical Analysis

Youngdahl used the Software ProUCL Version 5.0.00 (ProUCL Version 5.0.000, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations, USEPA, September 2013) to evaluate the results of the sampling and analysis of lead at the Downtown Gateway project.

Laboratory detection limit values were used in the data sets for samples that were non-detect. The lead dataset included concentrations and detection limit values taken from previous test pit sampling conducted in 2005 by Youngdahl (Reference No. 2). Box plots were developed for both lead and arsenic data sets. The arsenic data set appears to have a statistical outlier. This was confirmed by a test for outliers. Similar tests for the lead data set did not identify outliers.



Upper 95 percent confidence limits for the mean values (95% UCL) were computed for each data set. The 95% UCL for the arsenic data set including the outlier is 19.68 mg/kg; the 95% UCL excluding the outlier is 4.07 mg/kg. The arsenic data does not follow a discernible distribution and a non-parametric statistical method was applied to obtain the 95% UCL. The 95% UCL for the lead dataset is 58.06 mg/kg assuming a gamma distribution.

A statistical analysis of the analytical results from the fourteen soil samples revealed that the 95% UCL for each dataset lie below their respective screening levels. Excluding the statistical outlier, an arsenic concentration at the site of 4.07 mg/kg is within upper estimates of 11 mg/kg for the San Francisco Bay area and the 12 mg/kg estimate for Southern California. The 95% UCL for lead of 58.06 mg/kg lies well below the 80 mg/kg ESL for residential soils.

Conclusions and Recommendations

Only lead and arsenic were identified in point concentrations exceeding human health screening levels. The 95% UCL for lead, and for in arsenic with the one elevated value removed, fall below human health screening and/or typical background levels. The single elevated arsenic value was from soil appearing to be import and likely represents an isolated condition.

The No Further Action Determination requirements and recommendations of CKG Environmental, Inc. included the preparation of a management plan to address potential contaminants. This study has obtained a sufficient level of confidence that each constituent of concern at the site are well below regulatory thresholds and pose little risk for human health. It is our recommendation that a site management plan is not needed.

Due to the heterogeneity of contamination at the site, a limited amount of soil may still be contain constituents of concern above health risk screening levels and further soil testing during off-haul of materials may be warranted. Most of the site will be capped by development. Any exposed soil surfaces derived from present on-site soils remaining at the end of construction should be tested for heavy metals to verify that concentrations are not present above current residential environmental screening levels.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. This report has been prepared for the exclusive use of Catalyst Housing Group, Inc. and their consultants, for specific application to the Downtown Gateway Phase II project. Youngdahl Consulting Group, Inc. has endeavored to comply with generally accepted environmental geology practice common to the local area. Youngdahl Consulting Group, Inc. makes no other warranty, express or implied.
2. As of the present date, the findings of this report are valid for the property studied within the constraints of the data that was reviewed and the specific sampling locations and laboratory analyses completed. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may cause this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three years without our review nor should it be used or is it applicable for any properties other than those studied.
3. The analyses and recommendations contained in this report are based on limited windows into the subsurface conditions and data obtained from subsurface exploration. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any variations or undesirable conditions be encountered during the development of the site, Youngdahl Consulting Group, Inc. will provide supplemental recommendations as dictated by the field conditions.

Closure

Thank you for allowing us the opportunity to participate on this project. Please feel free to contact the undersigned with any comments or questions.

Very truly yours,
Youngdahl Consulting Group, Inc.



Dennis S. Eck
Staff Geologist

Reviewed by



David C. Sederquist, C.E.G., C.HG.
Senior Engineering Geologist/Hydrogeologist



Attachments:
Figure 1 – Site Plan
Tables 2 & 3
Results of Statistical Analyses
Laboratory Reports

Distribution: One electronic copy to Catalyst Housing Group, Inc.
Attention: Bradley Lancaster

Figures



Table 2 – Analytical Results

Sample	Metals by EPA 6000/7000 Series Methods CAM 17 (mg/kg)																	Organochlorine Pesticides
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium*	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Analytes Detected
G-1	4.1	46	120	ND<1.0	1.4	23	6.2	58	120	0.14	ND<1.0	18	ND<2.5	ND<1.0	ND<1.0	25	130	ND
G-2	ND<2.5	3.1	140	ND<1.0	ND<1.0	35	11	59	48	0.10	ND<1.0	28	ND<2.5	ND<1.0	ND<1.0	38	98	ND
G-3	ND<2.5	2.0	100	ND<1.0	ND<1.0	15	5.9	22	11	ND<0.10	ND<1.0	9.7	ND<2.5	ND<1.0	ND<1.0	26	60	ND
G-4	ND<2.5	9.5	110	ND<1.0	1.0	27	8.7	2000	63	ND<0.10	1.8	17	ND<2.5	ND<1.0	ND<1.0	40	390	ND
G-5	ND<2.5	3.5	230	ND<1.0	ND<1.0	25	9.1	54	50	0.10	ND<1.0	16	ND<2.5	ND<1.0	ND<1.0	45	220	ND
G-6	ND<2.5	2.1	140	ND<1.0	ND<1.0	30	8.6	42	21	ND<0.10	ND<1.0	19	ND<2.5	ND<1.0	ND<1.0	42	97	ND
G-7	ND<2.5	ND<1.0	160	ND<1.0	ND<1.0	42	10	53	5.1	ND<0.10	ND<1.0	28	ND<2.5	ND<1.0	ND<1.0	56	77	ND
G-8	ND<2.5	1.2	110	ND<1.0	ND<1.0	29	8.5	31	ND<2.5	ND<0.10	ND<1.0	17	ND<2.5	ND<1.0	ND<1.0	41	32	ND
G-9	ND<2.5	4.0	140	ND<1.0	ND<1.0	32	8.7	51	17	ND<0.10	ND<1.0	18	ND<2.5	ND<1.0	ND<1.0	45	52	ND
G-10	ND<2.5	2.3	130	ND<1.0	ND<1.0	30	8.1	43	120	ND<0.10	ND<1.0	20	ND<2.5	ND<1.0	ND<1.0	41	53	ND
G-11	ND<2.5	3.9	120	ND<1.0	ND<1.0	26	8.3	49	20	ND<0.10	ND<1.0	17	ND<2.5	ND<1.0	ND<1.0	44	49	ND
G-12	ND<2.5	2.4	97	ND<1.0	ND<1.0	28	8.5	43	9.1	ND<0.10	ND<1.0	15	ND<2.5	ND<1.0	ND<1.0	44	37	ND
G-13	ND<2.5	2.0	130	ND<1.0	ND<1.0	21	6.5	47	100	0.15	ND<1.0	11	ND<2.5	ND<1.0	ND<1.0	32	71	4,4'-DDE: 39 µg; 4,4'-DDT: 50 µg
G-14	ND<2.5	2.0	140	ND<1.0	ND<1.0	28	12	49	2.7	ND<0.10	ND<1.0	16	ND<2.5	ND<1.0	ND<1.0	47	43	ND
TTLC	500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000	DDT, DDE: 1000 µg/kg
STLC	15	5.0	100	0.75	1.0	5	80	25	5.0	0.2	350	20	1.0	5	7.0	24	250	DDT, DDE: 100 µg/l
ESL (Residential Soils)	31	0.067	3000	42	39	12000 (Cr III) 0.3 (Cr VI)	23	3100	80	13	390	86	390	390	0.78	390	23,000	4,4'-DDT: 1900 µg 4,4'-DDE: 1900 µg
HERO (Residential Soils)	NA	0.11	NA	1600	2100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TTLC – California Code of Regulations § 66261.24 Total Threshold Limit Concentration for Hazardous Waste.

STLC - California Code of Regulations § 66261.24 Soluble Threshold Limit Concentration for Hazardous Waste.

ESL – San Francisco Bay Regional Water Quality Control Board Environmental Screening Level, February 2013 (Rev. 3).

HERO – California Department of Toxic Substances Control Human and Ecological Risk Office Note Number 3, DTSC-modified Screening Levels, June 2016.

ND<10 – Non Detect at referenced reporting limit.

NA – Not available.

* Total Chromium

- Not Analyzed.

Bolded values indicate that a screening criterion has been exceeded

Table 3 – Waste Extraction Test Analytical Results

Sample	STLC (WET) Metals by EPA 6000/7000 Series (mg/L), Deionized Water
	Lead
G-1	1.8
G-4	1.0
G-5	ND<0.50
G-10	1.6
G-13	0.79
STLC	5.0

STLC - California Code of Regulations § 66261.24 Soluble Threshold Limit Concentration for Hazardous Waste.

ND<10 – Non Detect at referenced reporting limit.

Results of Statistical Analyses

Arsenic	Lead
46	120
3.1	46
2	11
9.5	63
3.5	50
2.1	21
1	5.1
1.2	2.5
4	17
2.3	120
3.9	20
2.4	9.1
2	100
2	2.7
	1
	2.5
	2.5
	3
	2.5
	2.5

Arsenic

Dixon's Outlier Test for Arsenic

Number of Observations = 14

10% critical value: 0.492

5% critical value: 0.546

1% critical value: 0.641

1. Observation Value 46 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.955

For 10% significance level, 46 is an outlier.

For 5% significance level, 46 is an outlier.

For 1% significance level, 46 is an outlier.

2. Observation Value 1 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.333

For 10% significance level, 1 is not an outlier.

For 5% significance level, 1 is not an outlier.

For 1% significance level, 1 is not an outlier.

Arsenic 95% UCL Excluding Outlier

General Statistics			
Total Number of Observations	13	Number of Distinct Observations	11
		Number of Missing Observations	1
Minimum	1	Mean	3
Maximum	9.5	Median	2.3
SD	2.164	SD of logged Data	0.572
Coefficient of Variation	0.721	Skewness	2.509

Normal GOF Test		Shapiro Wilk GOF Test	
Shapiro Wilk Test Statistic	0.714	Data Not Normal at 5% Significance Level	
5% Shapiro Wilk Critical Value	0.866	Lilliefors GOF Test	
Lilliefors Test Statistic	0.245	Data appear Normal at 5% Significance Level	
5% Lilliefors Critical Value	0.246		

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution		95% UCLs (Adjusted for Skewness)	
95% Normal UCL		95% Adjusted-CLT UCL (Chen-1995)	4.434
95% Student's-t UCL	4.07	95% Modified-t UCL (Johnson-1978)	4.14

Suggested UCL to Use

95% Student's-t UCL 4.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulation results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Arsenic 95% UCL Including Outlier

General Statistics

Total Number of Observations	14	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	1	Mean	6.071
Maximum	46	Median	2.35
SD	11.68	Std. Error of Mean	3.121
Coefficient of Variation	1.924	Skewness	3.55
Mean of logged Data	1.137	SD of logged Data	0.95

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL

95% Student's-t UCL 11.6

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995) 14.37

95% Modified-t UCL (Johnson-1978) 12.09

Nonparametric Distribution Free UCLs

95% CLT UCL	11.21	95% Jackknife UCL	11.6
95% Standard Bootstrap UCL	10.97	95% Bootstrap-t UCL	54.02
95% Hall's Bootstrap UCL	35.69	95% Percentile Bootstrap UCL	12.05
95% BCA Bootstrap UCL	15.34		
90% Chebyshev(Mean, Sd) UCL	15.44	95% Chebyshev(Mean, Sd) UCL	19.68

97.5% Chebyshev(Mean, Sd) UCL 25.56

99% Chebyshev(Mean, Sd) UCL 37.13

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 19.68

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulation results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Lead

Dixon's Outlier Test for Lead

Number of Observations = 20

10% critical value: 0.401

5% critical value: 0.45

1% critical value: 0.535

1. Observation Value 120 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.168

For 10% significance level, 120 is not an outlier.

For 5% significance level, 120 is not an outlier.

For 1% significance level, 120 is not an outlier.

2. Observation Value 1 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 1 is not an outlier.

For 5% significance level, 1 is not an outlier.

For 1% significance level, 1 is not an outlier.

Lead 95% UCL

General Statistics

Total Number of Observations	20	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1	Mean	29.95
Maximum	120	Median	10.05
SD	40.41	SD of logged Data	1.718
Coefficient of Variation	1.35	Skewness	1.454

Gamma GOF Test

A-D Test Statistic	0.736
5% A-D Critical Value	0.798
K-S Test Statistic	0.175
5% K-S Critical Value	0.204

Anderson-Darling Gamma GOF Test

Data appear Gamma Distributed at 5% Significance Level

Kolmogrov-Smirnoff Gamma GOF Test

Data appear Gamma Distributed at 5% Significance Level

Data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.548	k star (bias corrected MLE)	0.499
Theta hat (MLE)	54.62	Theta star (bias corrected MLE)	59.97
nu hat (MLE)	21.93	nu star (bias corrected)	19.97
MLE Mean (bias corrected)	29.95	MLE Sd (bias corrected)	42.38
		Approximate Chi Square Value (0.05)	10.83
Adjusted Level of Significance	0.038	Adjusted Chi Square Value	10.3

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when $n \geq 50$)	55.22	95% Adjusted Gamma UCL (use when $n < 50$)	58.06
---	-------	---	-------

Suggested UCL to Use

95% Adjusted Gamma UCL 58.06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulation results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Laboratory Reports



Client Name & Address: Youngdahl Consulting Group, Inc. 1234 Glenhaven Court El Dorado Hills, CA 95762		Client No.:	PO / Job#: E05538.003	Date: 7/8/16
Contact: Dave Sederquist		Phone: (916) 933-0633	Turn Around Time: Same Day / <input checked="" type="checkbox"/> 1Day / 2Day / 3Day / 4Day / 5Day	
E-mail: dcs@youngdahl.net		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer <input checked="" type="checkbox"/> PLM: <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400-1000 / <input type="checkbox"/> CARB 435		
Site Name: Downtown Gateway		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Microvac: <input type="checkbox"/> Qual / <input type="checkbox"/> D5755(str/area) / <input type="checkbox"/> D5756(str/mass)		
Site Location: Midas Ave. & Pacific Street, Rocklin, CA		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project <input type="checkbox"/> Metals Analysis Matrix: Method: Analytes:		
Comments: PLM EPA 600/R-93-116				<input type="checkbox"/> Silica in Air <input type="checkbox"/> w/Gravimetry

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
A-11 @ 6"	7-8-16 10:36		A P C				
A-12 @ 6"	7-8-16 10:52		A P C				
A-13	7-8-16 11:05		A P C				
			A P C				
			A P C				
sample A-14 not listed but submitted			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: DSE/TJB	Date/Time:	Shipped Via: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:
Relinquished By:	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By: <i>[Signature]</i>	Received By:	Received By:
Date / Time: JUL 11 2016	Date / Time:	Date / Time:
Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No

Forensic Analytical Laboratories may subcontract client samples to other FALC locations to meet client requests.
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 Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 • Phone: 310/763-2374 • 888/813-9417
 Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040



Client Name & Address: Youngdahl Consulting Group, Inc. 1234 Glenhaven Court El Dorado Hills, CA 95762		Client No.:	PO / Job#: E05538.003	Date: 7-8-16
Contact: Dave Sederquist		Phone: (916) 933-0633	Turn Around Time: Same Day / <input checked="" type="checkbox"/> 1Day / 2Day / 3Day / 4Day / 5Day	
E-mail: dcs@youngdahl.net		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer <input checked="" type="checkbox"/> PLM: <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400-1000 / <input type="checkbox"/> CARB 435		
Site Name: Downtown Gateway		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Microvac: <input type="checkbox"/> Qual / <input type="checkbox"/> D5755(str/area) / <input type="checkbox"/> D5756(str/mass)		
Site Location: Midas Ave. & Pacific Street, Rocklin, CA		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project <input type="checkbox"/> Metals Analysis Matrix: Method: Analytes:		
Comments: PLM EPA 600/R-93-116				<input type="checkbox"/> Silica in Air <input type="checkbox"/> w/Gravimetry

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
A-1	7/8/16 07:26	Rocklin Downtown Gateway	A P C				
A-2	7/8/16 07:35		A P C				
A-3	7/8/16 07:50		A P C				
A-4	7/8/16 08:01		A P C				
A-5	7/8/16 08:15		A P C				
A-6	7/8/16 08:27		A P C				
A-7	7/8/16 09:03		A P C				
A-8 @ 1'	7/8/16 09:29		A P C				
A-9 @ 6"	7/8/16 09:50		A P C				
A-10 @ 1'	7/8/16 10:13		A P C				

Sampled By: DSE/TJB	Date/Time:	Shipped Via: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:
Relinquished By:	Date / Time:	Relinquished By:
Received By: <i>[Signature]</i>	Date / Time: JUL 11 2016	Received By:
Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No

Forensic Analytical Laboratories may subcontract client samples to other FALL locations to meet client requests.
 San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761 • Phone: 510/887-8828 • 800/827-3274
 Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 • Phone: 310/763-2374 • 888/813-9417
 Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040



Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Youngdahl & Associates, Inc.
David Sederquist
1234 Glenhaven Court
El Dorado Hills, CA 95762

Client ID: 3691
Report Number: B224384
Date Received: 07/11/16
Date Analyzed: 07/12/16
Date Printed: 07/12/16
First Reported: 07/12/16

Job ID/Site: E05538.003 - Downtown Gateway, Midas Ave. & Pacific Street, Rocklin, CA

FALI Job ID: 3691
Total Samples Submitted: 14
Total Samples Analyzed: 14

Date(s) Collected: 07/08/2016

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
A-1	11783266						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-2	11783267						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-3	11783268						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-4	11783269						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-5	11783270						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-6	11783271						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-7	11783272						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
A-8 @1`	11783273						
Layer: Brown Soil			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Youngdahl & Associates, Inc.

Report Number: B224384

Date Printed: 07/12/16

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
A-9 @6`` Layer: Brown Soil	11783274		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
A-10 @1' Layer: Brown Soil	11783275		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
A-11 @6`` Layer: Brown Soil	11783276		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
A-12 @6`` Layer: Brown Soil	11783277		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
A-13 Layer: Brown Soil	11783278		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
A-14 Layer: Brown Soil	11783473		ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					



Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

July 18, 2016

CLS Work Order #: CZG0545
COC #: GREEN

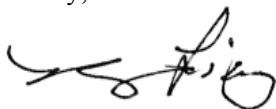
David Sederquist
Youngdahl & Associates
1234 Glenhaven Court
El Dorado Hills, CA 95762

Project Name: Downtown Gateway

Enclosed are the results of analyses for samples received by the laboratory on 07/13/16 13:12. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CALIFORNIA LABORATORY SERVICES

Youngdahl & Associates 1234 Glenhaven Court El Dorado Hills, CA 95762	Project: Downtown Gateway Project Number: E05583.003 Project Manager: David Sederquist	CLS Work Order #: CZG0545 COC #: GREEN
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CHANGE OF STATUS

CLS Labs Job # CZG0339 - 0 CZG0545 - GREEN

Project Name: Downtown Gateway

Date Sample(s) Were Received: 7/8/16 Original Due Date: 7/12/16

David Sederquist of Youngdahl called/ e-mailed
(Client Contacted) (Company)

on 7/13/16 at 1:10 pm
(Date) (Time)

... and requested the following:

Run STU Pb on samples

<u>01 - G-1</u>
<u>04 - G-4</u>
<u>05 - G-5</u>
<u>10 - G-1001</u>
<u>13 - G-13</u>

Turnaround time requested for additional work: 3 days
A. Shaw 7/13/16
(Signature) (Date)

Updated lab job database and file folder by: _____
Cc: _____

CALIFORNIA LABORATORY SERVICES

Youngdahl & Associates 1234 Glenhaven Court El Dorado Hills, CA 95762	Project: Downtown Gateway Project Number: E05583.003 Project Manager: David Sederquist	CLS Work Order #: CZG0545 COC #: GREEN
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STLC (WET) Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
G-1 (CZG0545-01) Soil Sampled: 07/13/16 13:12 Received: 07/13/16 13:12									
Lead	1.8	0.50	mg/L	1	CZ05110	07/18/16	07/18/16	EPA 6010B	
G-4 (CZG0545-02) Soil Sampled: 07/13/16 13:12 Received: 07/13/16 13:12									
Lead	1.0	0.50	mg/L	1	CZ05110	07/18/16	07/18/16	EPA 6010B	
G-5 (CZG0545-03) Soil Sampled: 07/13/16 13:12 Received: 07/13/16 13:12									
Lead	ND	0.50	mg/L	1	CZ05110	07/18/16	07/18/16	EPA 6010B	
G-10 @ 1' (CZG0545-04) Soil Sampled: 07/13/16 13:12 Received: 07/13/16 13:12									
Lead	1.6	0.50	mg/L	1	CZ05110	07/18/16	07/18/16	EPA 6010B	
G-13 (CZG0545-05) Soil Sampled: 07/13/16 13:12 Received: 07/13/16 13:12									
Lead	0.79	0.50	mg/L	1	CZ05110	07/18/16	07/18/16	EPA 6010B	

CALIFORNIA LABORATORY SERVICES

Youngdahl & Associates 1234 Glenhaven Court El Dorado Hills, CA 95762	Project: Downtown Gateway Project Number: E05583.003 Project Manager: David Sederquist	CLS Work Order #: CZG0545 COC #: GREEN
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STLC (WET) Metals by 6000/7000 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CZ05110 - EPA 3010A										
Blank (CZ05110-BLK1)										
Lead	ND	0.50	mg/L							Prepared & Analyzed: 07/18/16
LCS (CZ05110-BS1)										
Lead	57.2	0.50	mg/L	50.0		114	75-125			Prepared & Analyzed: 07/18/16
Matrix Spike (CZ05110-MS1)										
Lead	49.2	0.50	mg/L	50.0	0.136	98	75-125			Source: CZG0523-01 Prepared & Analyzed: 07/18/16
Matrix Spike Dup (CZ05110-MSD1)										
Lead	48.7	0.50	mg/L	50.0	0.136	97	75-125	0.9	30	Source: CZG0523-01 Prepared & Analyzed: 07/18/16

CALIFORNIA LABORATORY SERVICES

Youngdahl & Associates
1234 Glenhaven Court
El Dorado Hills, CA 95762

Project: Downtown Gateway
Project Number: E05583.003
Project Manager: David Sederquist

CLS Work Order #: CZG0545
COC #: GREEN

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference