Appendix G
Phase 2-Environmental Site Investigation

PHASE II: ENVIRONMENTAL SITE INVESTIGATION

BCAG Property Acquisition

APN: 039-060-125

Project Number: NOR103-PII

Prepared for

Northstar Engineering
Environmental Division
Chico, CA

Prepared by

HANOVER
ENVIRONMENTAL SERVICES, INC.
1072 Marauder St., Suite 220
Chico, CA 95973

January 18, 2012

Table of Contents

FIGURES

APPENDICES

1.0 EXECUTIVE SUMMARY

The Northstar Engineering, Environmental Division, engaged Hanover Environmental Services, Inc. to conduct a Phase II Environmental Site Assessment (ESA) on the proposed BCAG site (Butte County APN# 039-060-125) located on Huss Lane, subsequently referred to in this report as "the subject property". This assessment was prepared in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-97, Re-approved 2002).

The purpose of the Phase II ESA was to evaluate the recognized environmental conditions (RECs) identified in an Initial Site Assessment (ISA) issued by Chico Environmental, dated 9 September 2011. The Phase II ESA provides sufficient information regarding the nature and extent of contamination to assist in making informed business decisions about the property; and where applicable, providing the level of knowledge necessary to assist in the innocent purchaser defense under CERCLA.

The recognized on-site environmental concerns assessed as part of this Phase II ESA were potential presence of soil contamination in association with the subject property's historical use as a railroad spur in the early 1900's and the historic use of the property as agricultural fields. The most commonly reported contamination along rail lines includes metals, herbicides, and constituents of oil or fuel (petroleum products). The most commonly reported contamination in agricultural fields is from pesticide application.

The assessments performed to evaluate the recognized on-site environmental conditions consisted of four (4) borings along the railroad right-of-way and two (2) four-point composite samples dispersed in the former agricultural field. All sample locations were hand augured. The four (4) soil samples collected within the railroad right-of-way were analyzed for CAM-17 metals by EPA Method 6010B, herbicides by EPA Method 8151, and total recoverable petroleum hydrocarbons (TRPH) by EPA Method 418.1. The two (2) four-point composite samples collected in the former agricultural field were analyzed for common pesticides by EPA Method 8081A.

The results of these assessments revealed measured background concentrations of metals below laboratory reporting limits (RLs) for Herbicides and TRPH.

Pesticides 4,4'DDE, 4,4'DDT and Toxaphene were found in concentrations two orders of magnitude below published California Preliminary Remedial Goals (PRG). The Certified Laboratory Analysis reports are included in Appendix A.

With respect to the RECs assessed (CAM-17 metals, herbicides, TRPH, and common pesticides), analytical data suggest that these compounds are not present on the subject property at concentrations that pose a risk to human health or the environment; nor do they exceed regulatory standards. Based upon the results of this assessment no further investigation is recommended.

2.0 INTRODUCTION

The Northstar Engineering, Environmental Division, engaged Hanover Environmental Services, Inc. to conduct a Phase II Environmental Site Assessment (ESA) on the proposed BCAG site (Butte County APN# 039-060-125) located on Huss Lane, subsequently referred to in this report as "the subject property". This assessment was prepared in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-97, Re-approved 2002). The Phase II ESA was authorized by the Client on December 20, 2011.

2.1 Purpose

The purpose of the Phase II ESA was to evaluate the recognized environmental conditions (RECs) identified in a Phase I ESA for the purpose of providing sufficient information regarding the presence and extent of contamination to assist in making informed business decisions about the property; and where applicable, providing the level of knowledge necessary to assist in the innocent purchaser defense under CERCLA.

2.2 Scope of Services

The scope of work for this assessment was in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-97). These methodologies are described as representing good commercial and customary practice for conducting a Phase II ESA of a property for the purpose of evaluating recognized environmental conditions.

Specifically, the scope of work included the following tasks:

- Review of Existing Information
- Field Exploration
- Sampling and Chemical Analyses
- Evaluation of Results
- Discussion of Findings and Conclusions

2.3 Special Terms and Conditions

The findings and conclusions presented in this report apply only to the recognized environmental condition(s) assessed.

2.4 Limitations and Exceptions of Assessments

The report has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM 1903-97 (Re-approved 2002), and contains all of the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

2.5 Limiting Conditions and Methodologies Used

No ESA can eliminate all uncertainty. Furthermore, any sample, either surface or subsurface, taken for chemical analysis may or may not be representative of a larger population. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Additional assessment may be able to reduce the uncertainty. Even when Phase II ESA work is executed with an appropriate site-specific standard of care, certain conditions present especially difficult detection problems. Such conditions may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain hazardous substances and petroleum products, the distribution of existing contamination, physical limitations imposed by the location of utilities and other man-made objects, and the limitations of assessment technologies. Phase II ESAs do not generally require an exhaustive assessment of environmental conditions on a property. There is a point at which the cost of information obtained and the time required to obtain it outweigh the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. If hazardous substance or petroleum releases are confirmed on a parcel of property, the extent of further assessment is related to the degree of uncertainty that is acceptable to the user with respect to the real estate transaction. Measurements and sampling data only represent the site conditions at the time of data collection. Therefore, the usability of data collected as part of this Phase II ESA may have a finite lifetime depending on the application and use being made of the data. An environmental professional should evaluate whether the generated data are appropriate for any subsequent use beyond the original purpose for which it was collected.

3.0 BACKGROUND

3.1 Site Description and Features

The subject property is located on Huss Lane in southeast Chico, CA and consists of a flat parcel with an abutting rail road easement. The subject property is an approximate 16-acre parcel, rectangular in shape, and is oriented northeast-southwest.

3.2 Physical Setting

The subject property is currently vacant and no longer used for agricultural purposes.

3.3 Site History and Land Use

Historical uses include prior agricultural uses and a rail spur. There were no structures on the subject property.

3.4 Adjacent Property Use

The current adjoining property uses are:

North	Agricultural Land
South	Railroad Siding and Orchards
East	Industrial Buildings
West	Railroad Siding and Agricultural Land

3.5 Summary of Previous Assessments

The following previous assessments were reviewed for the property:

- Initial Site Assessment, 326 Huss Lane, No Project Number, dated September 21, 2011 by Chico Environmental Science and Planning

The recognized on-site environmental concerns assessed as part of this Phase II ESA were potential presence of soil contamination on the subject property from historical agricultural practices and railroad use. The findings and conclusions presented in this report apply only to the RECs assessed.

4.0 PHASE II ACTIVITIES

4.1 Scope of Assessment

4.1.1 Supplemental Record Review

None.

4.1.2 Conceptual Site Model and Sampling Plan

The conceptual site model takes into consideration the potential distributions of contaminants with respect to the properties, behaviors and fate and transport characteristics of the contaminant in a setting such as that being assessed. The sampling plan was designed to provide for the collection of potentially contaminated environmental media, if they occur, at locations and depths where the highest concentrations are likely to occur. This conceptual site model and sampling plan were developed in general accordance with ASTM Standard D 5730: Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, The Vadose Zone and Ground Water. Personal health and safety precautions were followed in accordance with applicable federal and state law or local equivalents and any requirements imposed by the owner, occupant, or field personnel.

4.1.3 Chemical Testing Plan

The chemical testing plan was designed to detect the contaminants suspected to be present in the samples collected. This testing plan included tests which provide quality assurance (QA) and techniques that provide quality control (QC) over the chemical analysis. A completed chain of custody record accompanied each sample shipment to the analytical laboratory. Chain of custody records provide written documentation regarding sample collection and handling, identify the persons involved in the chain of sample possession, and a written record of requested analytical parameters.

4.1.4 Deviations from the Work Plan

There were no deviations from the work plan.

4.2 Field Explorations and Methods

4.2.1 Test Pits

No test pits were excavated as part of this Phase II ESA.

4.2.2 Test Borings

On 27 December 2011, a total of twelve (12) borings were advanced using a hand coring device. The borings were advanced to a total depth of 3" below ground surface (BGS). One soil sample was collected from each of the four borings located along the rail road easement (NOR-RR-1 NOR-RR-2, NOR-RR-3, NOR-RR-4), and eight soil samples were collected within the field area and composited into two samples (NOR-COMP 1 (A-D) and NOR-COMP 2 (A-D)) to be submitted for chemical analysis. See Figure 2 for a site map with sample locations.

4.2.3 Monitoring Well Installations

Groundwater monitoring wells were not installed.

4.2.4 Other

No other assessment activities were conducted.

4.3 Sampling and Chemical Analyses

4.3.1 Soil

The following soil samples were submitted for chemical analyses: NOR-RR-1 NOR-RR-2, NOR-RR-3, NOR-RR-4, NOR-COMP 1 (A-D) and NOR-COMP 2 (A-D). The soil samples were submitted to Shasta Analytical Laboratories of Redding, CA and sub-contracted to Cal-Science Laboratories of Garden Grove, CA. for chemical analyses. Selected soil samples were analyzed for CAM-17 metals (EPA Method 6010B), herbicides (EPA Method 8151), total recoverable petroleum hydrocarbons (TRPH) (EPA Method 418.1 and common pesticides (EPA Method 8081A).

4.3.2 Groundwater

Groundwater samples were not taken.

4.3.3 Other

No other chemical analyses were performed.

5.0 EVALUATION AND PRESENTATION OF RESULTS

5.1 Regional Physiology

5.1.1 Geology

The Central Valley and surrounding area is the product of a complex series of geologic events. The Sacramento Valley is a late Mesozoic forearc basin that formed contemporaneously with, and between the accretionary trench deposits of the Franciscan Complex to the west, and an eastern magmatic arc

complex, the roots of which are exposed in the Sierra Nevada Mountains. The region has experienced orogenic uplift, faulting, and subsequent erosion as the valley was inundated by the ancestral Pacific Ocean.

The exposed granite of the Sierra Nevada mountain range represents the eroded edge of a tilted block of crystalline rocks known as the Sierra Nevada Batholith. The Sierra Nevada Batholith is a series of granitic plutons that range in age from Jurassic to Cretaceous. The plutons intruded sedimentary and volcanic rocks of Ordovician to Late Jurassic age.

The Sierra Nevada Mountains locally are the bedrock upon which the Great Valley sequence rests, in other locations, mudflows and lahars of the Pliocene Tuscan Formation and younger volcanics rocks cover the granitic bedrock, which plunges beneath the Great Valley sequence at the eastern margin of the Central Valley.

The Great Valley sequence is a very thick accumulation of sediments forming an asymmetric structural trough or syncline, with the axis of the trough west of the apparent surface axis of the present valley surface. The trough has been filled with as much as 10 vertical miles of sediment in the Sacramento Valley (the Great Valley Sequence), and these sediments range in age from Jurassic to Holocene. The Great Valley sequence rests on basement rocks consisting of metamorphosed sedimentary and volcanic rocks of Ordovician to Late Jurassic age.

In the Chico area, sediments of the Modesto formation onlap the Sierra Nevada mountains to the west, and are overlain by younger quaternary alluvial and lacustrine deposits locally. The sediments have a regional dip to the west, and are generally thickening west toward the center of the Sacramento Valley.

Uplift along the Sierra frontal region associated with high-angle faulting along the Chico Monocline exposes rocks of the Tuscan and Chico formations in canyons east of the valley floor. These exposures are continuous with formations exposed in deeper drilling cores from the valley areas, and serve as the regional groundwater supply aquifers

5.1.2 Hydrogeology

The subject site is located in the Northern Sacramento Valley, an area covering approximately 27,210 square miles. The site is adjacent east of Butte Creek, an ephemeral drainage that conveys excess stormwaters to the Sacramento River. The area surrounding the subject site is characterized by a very low relief surface that slopes to the southwest at a rate of 20 feet per mile. The original surface drainage in the area was to the southwest, but the present drainage is controlled by contouring landscapes and vegetative growth.

Three groundwater producing zones have been identified in the area of the subject site; the shallow zone aquifer (SZA) is an unconfined aquifer system occurring at depths from approximately 5 feet below ground surface (bgs), to 60 ft bgs. The second aquifer system is called the intermediate zone aquifer (IZA), and occurs at depths ranging from 80 ft to 140 ft bgs under confined conditions. A third aquifer system occurs under confined conditions at depths ranging from 220 ft bgs to over 300 ft bgs.

Post-Eocene continental rocks and deposits contain most of the fresh water in the Sacramento Valley. In the vicinity of the subject site the Pliocene Tuscan Formation is an important fresh water aquifer. Wells completed in the Tuscan yield large quantities of fresh water to wells. The aquifer material generally consists of heterogeneous mixes of gravel, sand, silt, and clay, and in places they contain beds of claystone, siltstone, sandstone, and conglomerate. Yields to wells from these rocks and deposits (except

from the lacustrine and marsh deposits), differ greatly from place to place and range from about 20 to 4,500 gpm. Below a depth of approximately 400 feet, the water generally becomes too saline for use.

5.2 Local Physiology

5.2.1 Geology

The subject property is situated at an elevation of approximately 190 feet above mean sea level. The general topography of the area is relatively flat, with a surface gradient to the southwest at approximately 75 feet per ½ mile. Surficial soils encountered during the site investigation consisted of sandy silts with a USGS classification of ML.

5.2.2 Hydrogeology

Groundwater was not encountered.

5.3 Verification of Conceptual Site Model

The conceptual site model and sampling plan developed for the site were verified during the Phase II ESA assessment activities. The QA/QC procedures described in the chemical testing plan were adequate to verify the data acceptability.

5.4 Analytical Data

5.4.1 Soil

Analysis of selected soil samples revealed measured background concentrations of metals and below laboratory reporting limits (RLs) for Herbicides and TRPH. Pesticides 4,4'DDE, 4,4'DDT and Toxaphene were found in concentrations two orders of magnitude below published California Preliminary Remedial Goals (PRG). The Certified Laboratory Analysis reports are included in Appendix A of this report.

6.0 DISCUSSION OF FINDINGS AND CONCLUSIONS

This assessment has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM 1903-97 (Re-approved 2002), and contains all of the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

6.1 Recognized Environmental Conditions

The recognized on-site environmental concerns assessed as part of this Phase II ESA were potential presence of soil contamination in association with the subject properties location to the railroad easement and historic agricultural use. The assessments performed to evaluate the recognized on-site environmental conditions consisted of 12 borings which were hand augured and soil samples collected. Four (4) soil samples were analyzed for CAM-17 metals (EPA Method 6010B), herbicides (EPA Method 8151), total recoverable petroleum hydrocarbons (TRPH) (EPA Method 418.1). Two (2) four-point composite samples were analyzed for common pesticides (EPA Method 8081A).

The results of these assessments revealed measured background concentrations of metals and below laboratory reporting limits (RLs) for Herbicides and TRPH.

Pesticides 4,4'DDE, 4,4'DDT and Toxaphene were found in concentrations two orders of magnitude below published California Preliminary Remedial Goals (PRG). The Certified Laboratory Analysis reports are included in Appendix A.

6.2 Affected Media

Sampled soils have not been impacted by the constituents investigated for above published California Preliminary Remedial Goals (PRG).

6.3 Evaluation of Media Quality

The data gathered during this assessment is sufficient to determine whether hazardous substances or petroleum products were released or disposed at the property. With respect to the RECs assessed, hazardous substances or petroleum products have not been released or disposed on the property. The soil samples display native or background levels of metals. The herbicide and TRPH analysis reported concentrations below RLs and the pesticide constituents that were reported above RLs were at concentrations well below published PRGs.

6.4 Other Concerns

There were no other concerns identified during this Phase II ESA.

7.0 RECOMMENDATIONS

With respect to the RECs assessed (CAM-17 metals, herbicides, TRPH, and common pesticides) analytical data suggest that these compounds are not present on the subject property at concentrations that pose a risk to human health or the environment nor do they exceed regulatory standards. Based upon the results of this assessment, no further investigation is recommended.

8.0 CLOSURE

This report has been prepared for the sole benefit of Northstar Engineering Environmental Division and Butte County Association of Government. The report may not be relied upon by any other person or entity without the express written consent of Northstar Engineering Environmental Division and Butte County Association of Government.

Respectfully submitted,
Hanover Environmental Services, Inc.

Prepared by:	**Reviewed by:**
Will Bono	Mason McKillips, P.G.
Sr. Assessor	Professional Geologist
REA #04233	*P.G. # 8857*

REFERENCES AND SOURCES OF INFORMATION

The following references may have been used in the preparation of this report:

ASTM Standard D 5730 Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, the Vadose Zone and Ground Water

ASTM Standard D 653 Terminology Relating to Soil, Rock and Contained Fluids ASTM Standard D 4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well. (Observation Well)

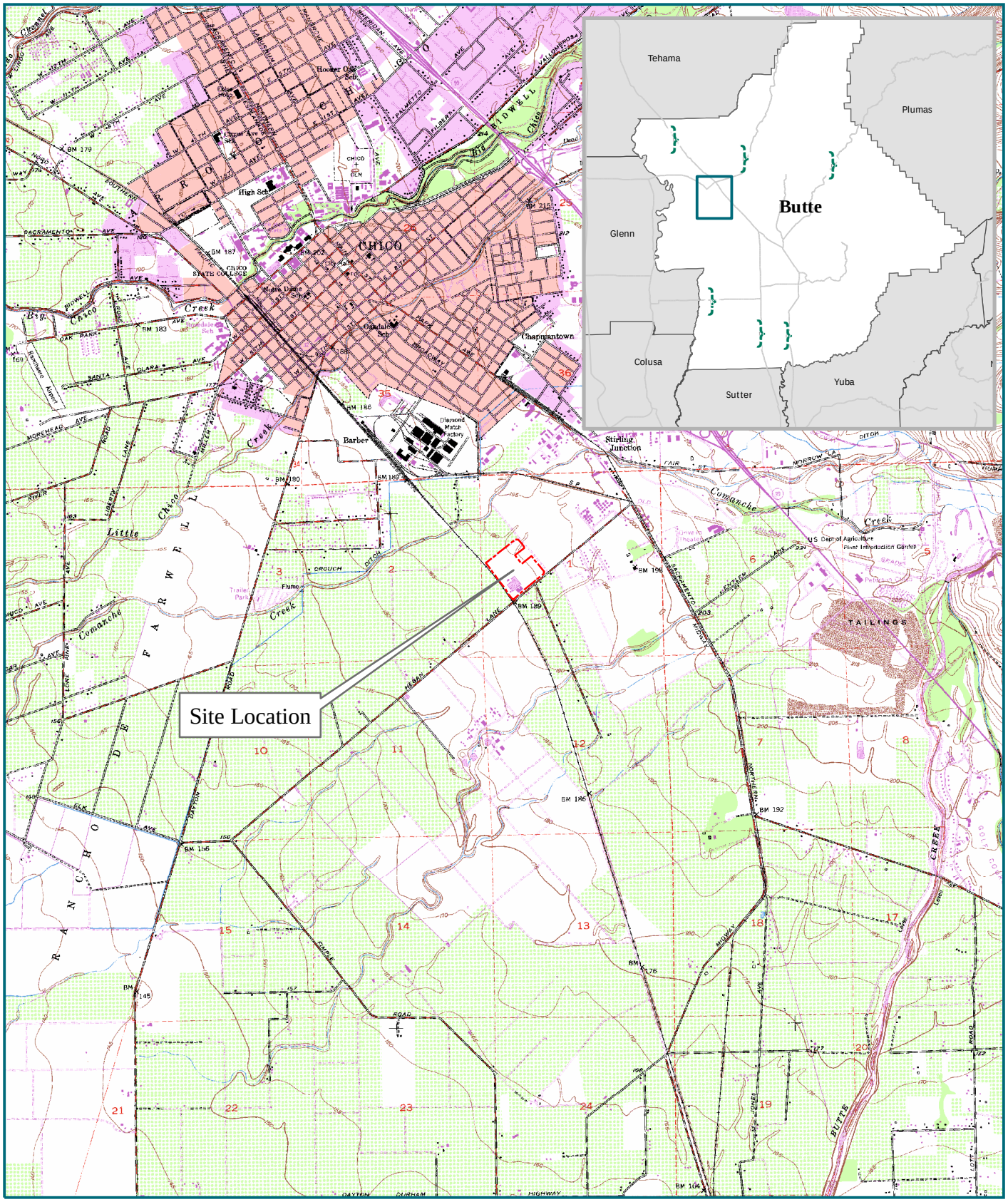
ASTM Standard E 1527 Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process

ASTM Standard E 1528 Practice for Environmental Site Assessments: Transaction Screen Process

Helley, Edward J. and Harwood, David S., 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California, U.S. Department of the Interior, U. S. Geological Survey Miscellaneous Field Studies Map.

Figure 1: Site Location Map

BCAG Huss Lane Property **Site Location Map**



Within Section 1, T21N, R01E
City of Chico, Butte County, CA
Chico 7.5 Minute USGS Quad
Map created by M. Brown
18 January 2012

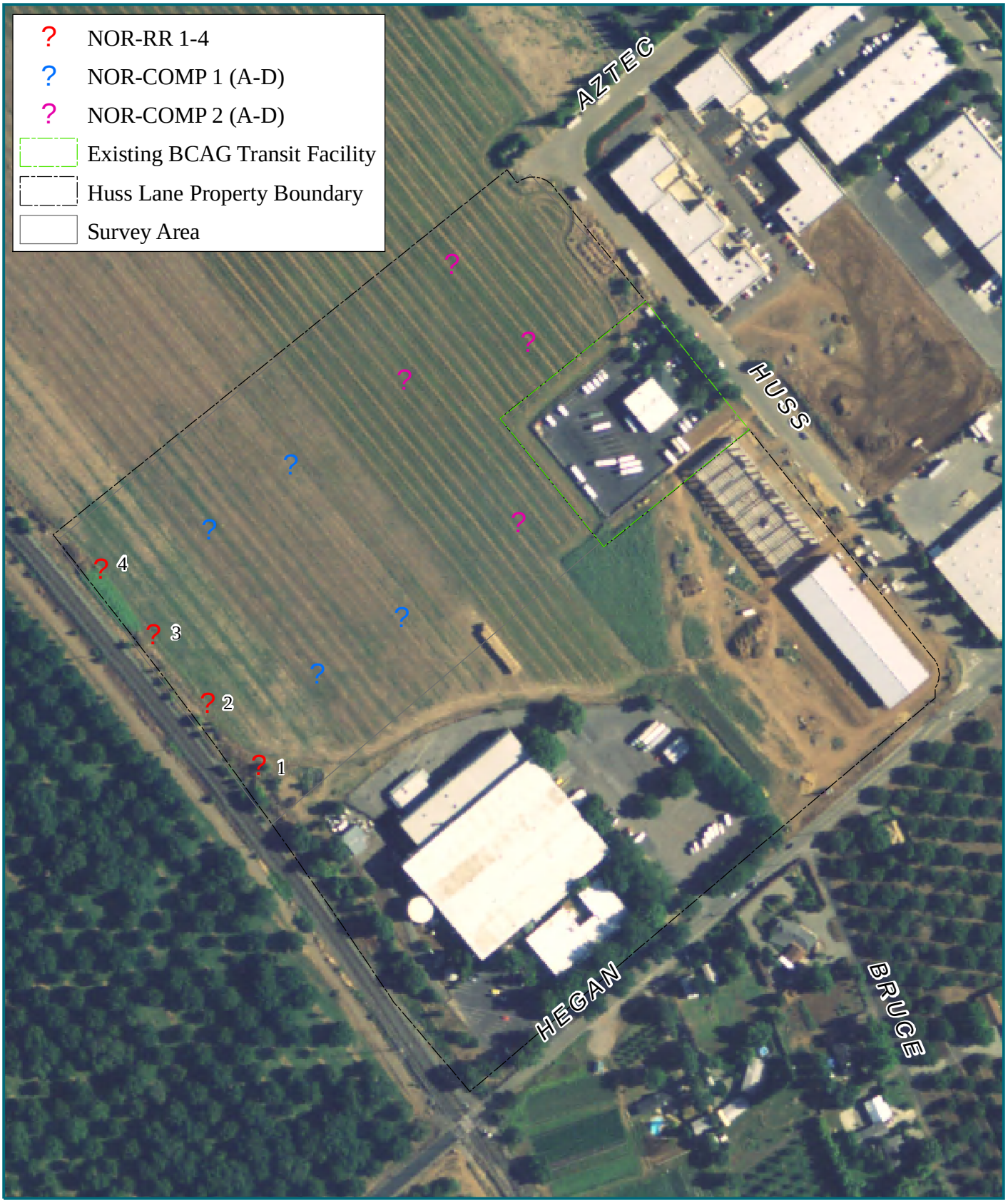
0 3,600 7,200 Feet

HANOVER

Figure 1

Figure 2: Site Map with Sample Locations

BCAG Huss Lane **Site Map**



Within Section 1, T21N, R01E
City of Chico, Butte County, CA
2005 NAIP Imagery: CASIL
Map created by M. Brown
18 January 2012

0 210 420 Feet

HANOVER

Figure 2

Appendix A: Certified Analytical Report

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 11-12-2063

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Shasta Analytical Laboratory

Client Project Name: BGAG HUSS LANE

Attention: Lynn Coster
20550 Dersch Road
Anderson, CA 96007-8462

Approved for release on 01/12/2012 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: BGAG HUSS LANE
Work Order Number: 11-12-2063

Calscience Environmental Laboratories, Inc.

Client:	Shasta Analytical Laboratory 20550 Dersch Road Anderson, CA 96007-8462	Work Order:	11-12-2063
		Project name:	BGAG HUSS LANE
		Received:	12/30/11 09:10
Attn:	Lynn Coster		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
NOR-RR-1						
Arsenic	**4.66**		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	**123**		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	**0.527**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	**0.658**		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	**81.7**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	**21.5**		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	**33.3**		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	**2.19**		0.500	mg/kg	EPA 6010B	EPA 3050B
Nickel	**57.3**		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	**82.4**		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	**47.4**		1.00	mg/kg	EPA 6010B	EPA 3050B
NOR-RR-2						
Arsenic	**4.56**		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	**112**		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	**0.513**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	**0.700**		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	**80.4**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	**20.5**		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	**32.4**		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	**1.46**		0.500	mg/kg	EPA 6010B	EPA 3050B
Nickel	**65.9**		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	**75.6**		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	**45.8**		1.00	mg/kg	EPA 6010B	EPA 3050B
NOR-RR-3						
Arsenic	**4.52**		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	**132**		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	**0.574**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	**0.815**		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	**91.4**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	**24.0**		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	**44.8**		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	**4.96**		0.500	mg/kg	EPA 6010B	EPA 3050B
Nickel	**66.0**		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	**90.2**		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	**63.7**		1.00	mg/kg	EPA 6010B	EPA 3050B

*MDL is shown.

Return to Contents

Calscience Environmental Laboratories, Inc.

Client:	Shasta Analytical Laboratory 20550 Dersch Road Anderson, CA 96007-8462	Work Order:	11-12-2063
		Project name:	BGAG HUSS LANE
		Received:	12/30/11 09:10
Attn:	Lynn Coster		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
NOR-RR-4						
Arsenic	**4.19**		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	**218**		0.500	mg/kg	EPA 6010B	EPA 3050B
Beryllium	**0.504**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cadmium	**0.857**		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	**52.3**		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	**20.0**		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	**29.4**		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	**3.71**		0.500	mg/kg	EPA 6010B	EPA 3050B
Nickel	**40.9**		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	**77.5**		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	**56.7**		1.00	mg/kg	EPA 6010B	EPA 3050B
TRPH	**11**		10	mg/kg	EPA 418.1M	N/A
NOR-COMP 1 (A-D)						
4,4'-DDE	**170**		100	ug/kg	EPA 8081A	EPA 3545
4,4'-DDT	**14**		5.0	ug/kg	EPA 8081A	EPA 3545
Toxaphene	**220**		100	ug/kg	EPA 8081A	EPA 3545
NOR-COMP 2 (A-D)						
4,4'-DDE	**130**		100	ug/kg	EPA 8081A	EPA 3545
4,4'-DDT	**20**		5.0	ug/kg	EPA 8081A	EPA 3545
Toxaphene	**210**		100	ug/kg	EPA 8081A	EPA 3545

Subcontracted analyses, if any, are not included in this summary.

*MDL is shown.

Return to Contents

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: N/A
Method: EPA 418.1M

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-1	**11-12-2063-1-A**	**12/27/11 10:00**	**Solid**	**IR 2**	**12/30/11**	**12/30/11 13:00**	**111230L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-2	**11-12-2063-2-A**	**12/27/11 10:15**	**Solid**	**IR 2**	**12/30/11**	**12/30/11 13:00**	**111230L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-3	**11-12-2063-3-A**	**12/27/11 10:30**	**Solid**	**IR 2**	**12/30/11**	**12/30/11 13:00**	**111230L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-4	**11-12-2063-4-A**	**12/27/11 10:45**	**Solid**	**IR 2**	**12/30/11**	**12/30/11 13:00**	**111230L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	11	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-07-015-1,821**	**N/A**	**Solid**	**IR 2**	**12/30/11**	**12/30/11 13:00**	**111230L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	10	1		mg/kg

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-COMP 1 (A-D)	**11-12-2063-5-A**	**12/27/11 14:00**	**Solid**	**GC 51**	**01/03/12**	**01/05/12 15:00**	**120103L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	170	100	20		Gamma-BHC	ND	5.0	1	
4,4'-DDT	14	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	220	100	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	67	50-135			2,4,5,6-Tetrachloro-m-Xylene	85	50-135		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-COMP 2 (A-D)	**11-12-2063-6-A**	**12/27/11 13:00**	**Solid**	**GC 51**	**01/03/12**	**01/05/12 15:15**	**120103L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	130	100	20		Gamma-BHC	ND	5.0	1	
4,4'-DDT	20	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	210	100	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	63	50-135			2,4,5,6-Tetrachloro-m-Xylene	90	50-135		

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-537-1,137**	**N/A**	**Solid**	**GC 51**	**01/03/12**	**01/05/12 11:38**	**120103L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	ND	5.0	1		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	91	50-135			2,4,5,6-Tetrachloro-m-Xylene	109	50-135		

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-1	**11-12-2063-1-A**	**12/27/11 10:00**	**Solid**	**GC 40**	**01/03/12**	**01/06/12 02:24**	**120103L12**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	67	30-130	

NOR-RR-2	11-12-2063-2-A	12/27/11 10:15	Solid	GC 40	01/03/12	01/06/12 02:56	120103L12

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	52	30-130	

NOR-RR-3	11-12-2063-3-A	12/27/11 10:30	Solid	GC 40	01/03/12	01/06/12 03:28	120103L12

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	54	30-130	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-4	**11-12-2063-4-A**	**12/27/11 10:45**	**Solid**	**GC 40**	**01/03/12**	**01/06/12 04:01**	**120103L12**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	57	30-130	

Method Blank	095-01-033-984	N/A	Solid	GC 40	01/03/12	01/06/12 00:14	120103L12

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Dalapon	ND	250	1		2,4-D	ND	100	1	
Dicamba	ND	10	1		2,4,5-TP (Silvex)	ND	10	1	
MCPP	ND	10000	1		2,4,5-T	ND	10	1	
MCPA	ND	10000	1		2,4-DB	ND	100	1	
Dichlorprop	ND	100	1		Dinoseb	ND	50	1	

Surrogates:	REC (%)	Control Limits	Qual
2,4-Dichlorophenylacetic acid	66	30-130	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3050B / EPA 7471A Total
Method: EPA 6010B / EPA 7471A
Units: mg/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-1	**11-12-2063-1-A**	**12/27/11 10:00**	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11 19:18**	**111230L03**

Comment(s): -Mercury analysis was performed on 12/30/11 16:30 with batch 111230L03.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	4.66	0.750	1		Molybdenum	ND	0.250	1	
Barium	123	0.500	1		Nickel	57.3	0.250	1	
Beryllium	0.527	0.250	1		Selenium	ND	0.750	1	
Cadmium	0.658	0.500	1		Silver	ND	0.250	1	
Chromium	81.7	0.250	1		Thallium	ND	0.750	1	
Cobalt	21.5	0.250	1		Vanadium	82.4	0.250	1	
Copper	33.3	0.500	1		Zinc	47.4	1.00	1	
Lead	2.19	0.500	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-2	**11-12-2063-2-A**	**12/27/11 10:15**	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11 19:20**	**111230L03**

Comment(s): -Mercury analysis was performed on 12/30/11 16:32 with batch 111230L03.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	4.56	0.750	1		Molybdenum	ND	0.250	1	
Barium	112	0.500	1		Nickel	65.9	0.250	1	
Beryllium	0.513	0.250	1		Selenium	ND	0.750	1	
Cadmium	0.700	0.500	1		Silver	ND	0.250	1	
Chromium	80.4	0.250	1		Thallium	ND	0.750	1	
Cobalt	20.5	0.250	1		Vanadium	75.6	0.250	1	
Copper	32.4	0.500	1		Zinc	45.8	1.00	1	
Lead	1.46	0.500	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-3	**11-12-2063-3-A**	**12/27/11 10:30**	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11 19:21**	**111230L03**

Comment(s): -Mercury analysis was performed on 12/30/11 16:39 with batch 111230L03.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	4.52	0.750	1		Molybdenum	ND	0.250	1	
Barium	132	0.500	1		Nickel	66.0	0.250	1	
Beryllium	0.574	0.250	1		Selenium	ND	0.750	1	
Cadmium	0.815	0.500	1		Silver	ND	0.250	1	
Chromium	91.4	0.250	1		Thallium	ND	0.750	1	
Cobalt	24.0	0.250	1		Vanadium	90.2	0.250	1	
Copper	44.8	0.500	1		Zinc	63.7	1.00	1	
Lead	4.96	0.500	1						

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3050B / EPA 7471A Total
Method: EPA 6010B / EPA 7471A
Units: mg/kg

Project: BGAG HUSS LANE

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NOR-RR-4	**11-12-2063-4-A**	**12/27/11 10:45**	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11 19:22**	**111230L03**

Comment(s): -Mercury analysis was performed on 12/30/11 16:41 with batch 111230L03.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	4.19	0.750	1		Molybdenum	ND	0.250	1	
Barium	218	0.500	1		Nickel	40.9	0.250	1	
Beryllium	0.504	0.250	1		Selenium	ND	0.750	1	
Cadmium	0.857	0.500	1		Silver	ND	0.250	1	
Chromium	52.3	0.250	1		Thallium	ND	0.750	1	
Cobalt	20.0	0.250	1		Vanadium	77.5	0.250	1	
Copper	29.4	0.500	1		Zinc	56.7	1.00	1	
Lead	3.71	0.500	1						

Method Blank	**099-04-007-8,437**	**N/A**	**Solid**	**Mercury**	**12/30/11**	**12/30/11 12:45**	**111230L03**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7471A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.0835	1	

Method Blank	**097-01-002-15,556**	**N/A**	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11 17:18**	**111230L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Lead	ND	0.500	1	
Arsenic	ND	0.750	1		Molybdenum	ND	0.250	1	
Barium	ND	0.500	1		Nickel	ND	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	ND	0.250	1		Thallium	ND	0.750	1	
Cobalt	ND	0.250	1		Vanadium	ND	0.250	1	
Copper	ND	0.500	1		Zinc	ND	1.00	1	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3050B
Method: EPA 6010B

Project BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-12-1776-1	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11**	**111230S03**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	25.00	28	30	50-115	9	0-20	3
Arsenic	25.00	100	94	75-125	5	0-20	
Barium	25.00	4X	4X	75-125	4X	0-20	Q
Beryllium	25.00	101	99	75-125	2	0-20	
Cadmium	25.00	93	92	75-125	1	0-20	
Chromium	25.00	99	95	75-125	3	0-20	
Cobalt	25.00	98	93	75-125	4	0-20	
Copper	25.00	143	115	75-125	9	0-20	3
Lead	25.00	114	84	75-125	11	0-20	
Molybdenum	25.00	87	84	75-125	3	0-20	
Nickel	25.00	92	82	75-125	6	0-20	
Selenium	25.00	98	93	75-125	4	0-20	
Silver	12.50	101	99	75-125	2	0-20	
Thallium	25.00	51	63	75-125	20	0-20	3
Vanadium	25.00	104	93	75-125	5	0-20	
Zinc	25.00	4X	4X	75-125	4X	0-20	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3050B
Method: EPA 6010B

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
11-12-1776-1	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11**	**111230S03**

Parameter	SPIKE ADDED	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	25.00	98	97	75-125	0	0-20	
Arsenic	25.00	100	98	75-125	2	0-20	
Barium	25.00	4X	4X	75-125	4X	0-20	Q
Beryllium	25.00	101	101	75-125	0	0-20	
Cadmium	25.00	95	95	75-125	0	0-20	
Chromium	25.00	96	97	75-125	0	0-20	
Cobalt	25.00	97	97	75-125	0	0-20	
Copper	25.00	99	99	75-125	0	0-20	
Lead	25.00	94	94	75-125	0	0-20	
Molybdenum	25.00	97	98	75-125	0	0-20	
Nickel	25.00	95	94	75-125	0	0-20	
Selenium	25.00	100	102	75-125	2	0-20	
Silver	12.50	88	88	75-125	1	0-20	
Thallium	25.00	88	88	75-125	0	0-20	
Vanadium	25.00	97	98	75-125	0	0-20	
Zinc	25.00	4X	4X	75-125	4X	0-20	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: Extraction
Method: EPA 418.1M

Project BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-12-2042-1	**Solid**	**IR 2**	**12/30/11**	**12/30/11**	**111230S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TRPH	100.0	101	114	55-135	12	0-30	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 7471A Total
Method: EPA 7471A

Project BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-12-1776-1	**Solid**	**Mercury**	**12/30/11**	**12/30/11**	**111230S03**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.8350	111	112	71-137	1	0-14	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 8151A
Method: EPA 8151A

Project BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
NOR-RR-1	**Solid**	**GC 40**	**01/03/12**	**01/06/12**	**120103S12**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4-D	400.0	78	88	30-130	13	0-30	
2,4,5-T	40.00	58	64	30-130	9	0-30	
2,4-DB	400.0	72	76	30-130	6	0-30	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: 12/30/11
Work Order No: 11-12-2063
Preparation: EPA 3545
Method: EPA 8081A

Project BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
NOR-COMP 2 (A-D)	**Solid**	**GC 51**	**12/03/11**	**01/05/12**	**120103S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aldrin	25.00	72	57	50-135	22	0-25	
Alpha-BHC	25.00	63	60	50-135	6	0-25	
Beta-BHC	25.00	104	100	50-135	5	0-25	
4,4'-DDD	25.00	101	89	50-135	13	0-25	
4,4'-DDE	25.00	1522	1421	50-135	5	0-25	3
4,4'-DDT	25.00	126	100	50-135	13	0-25	
Delta-BHC	25.00	83	74	50-135	11	0-25	
Dieldrin	25.00	79	76	50-135	5	0-25	
Endosulfan I	25.00	71	66	50-135	7	0-25	
Endosulfan II	25.00	111	103	50-135	7	0-25	
Endosulfan Sulfate	25.00	98	88	50-135	10	0-25	
Endrin	25.00	82	74	50-135	11	0-25	
Endrin Aldehyde	25.00	94	68	50-135	33	0-25	4
Gamma-BHC	25.00	73	66	50-135	9	0-25	
Heptachlor	25.00	60	56	50-135	8	0-25	
Heptachlor Epoxide	25.00	56	49	50-135	14	0-25	3
Methoxychlor	25.00	159	142	50-135	11	0-25	3

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: N/A
Work Order No: 11-12-2063
Preparation: EPA 3050B
Method: EPA 6010B

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-15,556	**Solid**	**ICP 5300**	**12/30/11**	**12/30/11**	**111230L03**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	25.00	98	99	80-120	73-127	1	0-20	
Arsenic	25.00	100	100	80-120	73-127	1	0-20	
Barium	25.00	108	109	80-120	73-127	1	0-20	
Beryllium	25.00	101	102	80-120	73-127	1	0-20	
Cadmium	25.00	102	103	80-120	73-127	1	0-20	
Chromium	25.00	102	103	80-120	73-127	1	0-20	
Cobalt	25.00	107	108	80-120	73-127	1	0-20	
Copper	25.00	100	101	80-120	73-127	0	0-20	
Lead	25.00	104	105	80-120	73-127	1	0-20	
Molybdenum	25.00	101	102	80-120	73-127	1	0-20	
Nickel	25.00	106	107	80-120	73-127	1	0-20	
Selenium	25.00	99	100	80-120	73-127	1	0-20	
Silver	12.50	101	103	80-120	73-127	1	0-20	
Thallium	25.00	105	106	80-120	73-127	1	0-20	
Vanadium	25.00	100	101	80-120	73-127	1	0-20	
Zinc	25.00	103	103	80-120	73-127	0	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: N/A
Work Order No: 11-12-2063
Preparation: N/A
Method: EPA 418.1M

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-07-015-1,821	**Solid**	**IR 2**	**12/30/11**	**NONE**	**111230L01**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
TRPH	100.0	94.80	95	70-130	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory		Date Received:	N/A
20550 Dersch Road		Work Order No:	11-12-2063
Anderson, CA 96007-8462		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-007-8,437	**Solid**	**Mercury**	**12/30/11**	**12/30/11**	**111230L03**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.8350	98	97	85-121	1	0-10	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory		Date Received:	N/A
20550 Dersch Road		Work Order No:	11-12-2063
Anderson, CA 96007-8462		Preparation:	EPA 8151A
		Method:	EPA 8151A

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-033-984	**Solid**	**GC 40**	**01/03/12**	**01/05/12**	**120103L12**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4-D	400.0	84	84	30-130	0	0-30	
2,4,5-T	40.00	74	74	30-130	0	0-30	
2,4-DB	400.0	77	78	30-130	1	0-30	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Shasta Analytical Laboratory
20550 Dersch Road
Anderson, CA 96007-8462

Date Received: N/A
Work Order No: 11-12-2063
Preparation: EPA 3545
Method: EPA 8081A

Project: BGAG HUSS LANE

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-537-1,137	**Solid**	**GC 51**	**01/03/12**	**01/05/12**	**120103L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Aldrin	25.00	91	78	50-135	36-149	15	0-25	
Alpha-BHC	25.00	97	77	50-135	36-149	23	0-25	
Beta-BHC	25.00	90	79	50-135	36-149	13	0-25	
4,4'-DDD	25.00	89	72	50-135	36-149	21	0-25	
4,4'-DDE	25.00	89	69	50-135	36-149	25	0-25	
4,4'-DDT	25.00	114	90	50-135	36-149	23	0-25	
Delta-BHC	25.00	89	74	50-135	36-149	19	0-25	
Dieldrin	25.00	99	82	50-135	36-149	19	0-25	
Endosulfan I	25.00	101	85	50-135	36-149	17	0-25	
Endosulfan II	25.00	98	82	50-135	36-149	18	0-25	
Endosulfan Sulfate	25.00	98	81	50-135	36-149	19	0-25	
Endrin	25.00	91	74	50-135	36-149	20	0-25	
Endrin Aldehyde	25.00	105	86	50-135	36-149	19	0-25	
Gamma-BHC	25.00	100	80	50-135	36-149	23	0-25	
Heptachlor	25.00	98	83	50-135	36-149	16	0-25	
Heptachlor Epoxide	25.00	81	72	50-135	36-149	13	0-25	
Methoxychlor	25.00	91	72	50-135	36-149	24	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

ACCREDITED IN ACCORDANCE WITH nelac

Work Order Number: 11-12-2063

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

Shasta Analytical Laboratory
20550 Dersch Rd. • Anderson, CA 96007
(530) 378-2200 • salab@c-zone.net

POSSIBLE HAZARDS: _____

Date 12/29/11
Source of Samples _____
Sampler Name LH
Company HANOVER

Report to Lynn COSTER
Company Shasta Analytical
Address 20550 Dersch Rd.
Anderson, CA. 96007

Phone: 530-378-2200
E-Mail: salab@c-zone.net

Project No. BGAG Huss Lane

EDF Report Required _____
Global I.D. _____
EDF E-Mail: _____

11-12-2063

LAB ID No.	Client ID No.	COLLECTION Date	COLLECTION Time	Type	Depth	Composite	Note 4	Turn-around time	TRPH	CAM-17	Pesticide	Herbicides	COMMENTS/CONDITIONS: (Container type, container number, etc.)
1	NOR-RR-1	12/27	1000	S				STND	X	X		X	
2	NOR-RR-2		1015						X	X		X	
3	NOR-RR-3		1030						X	X		X	
4	NOR-RR-4		1045						X	X		X	
5	NOR-Comp 1 (A-D)		200								X		
6	NOR-Comp 2 (A-D)		100								X		

1) Write only one sample number in each space.
2) Specify type of sample(s): Water(W), Solid (S), or indicate type.
3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
4) Preservation of sample.
5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY: / **SAMPLE RECEIVED BY:**

Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Gary Fitz		SHASTA	12/29/11	1645	J. PATTEL		CEL	12/30/11	0910

Carrier: ONTRAC

Return to Contents

(2063)

OnTrac
On Time Delivery For Less

800-334-5000
Call For A Pickup!

Account Number [redacted] B10273650691

Date 12 29 11

FROM (Company)
SHASTA ANALYTICAL LABORATORY*

Street Address
20550 DERSCH RD Suite

City
ANDERSON

State CA Zip Code (Required) 96007 Phone Number (530) 378-2200

B10273650691

Service Options
*If no box is checked, Sunrise Service will be applied.
**Minimum charge weight is 300 lbs. - Delivery by 5:00 P.M.
Note: delivery times for all services may be later in some areas.
Check service guide...

Billing Information

Weight

PLEASE PRINT IN BLOCK LETTERS with Blue / Bla

WWW.CALOVER.COM

OPA

TO (Company) WE CANNOT DELIVER TO A P.O. BOX
CALSCIENCE

Street Address
7440 LINCOLN WAY

Suite # City
GARDEN GROVE

State CA Zip Code (Required) 92841 Phone Number (714) 895-5494

Recipient's Name

Shipper's Ref. #

B10273650691

OnTrac
ontrac.com 800.334.5000

ORG 92841
GARDEN GROVE
SAC 29 JS/5955

13 lbs

150140

Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-12-2063

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: SHASTA DATE: 12/30/11

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 4.8 °C - 0.3 °C (CF) = 4.5 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: _____

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: _____

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: _____

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑ PS	☑	☐
☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels. 12/30/11			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☑Sleeve (5) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** _____

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** _____

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** _____

Return to Contents