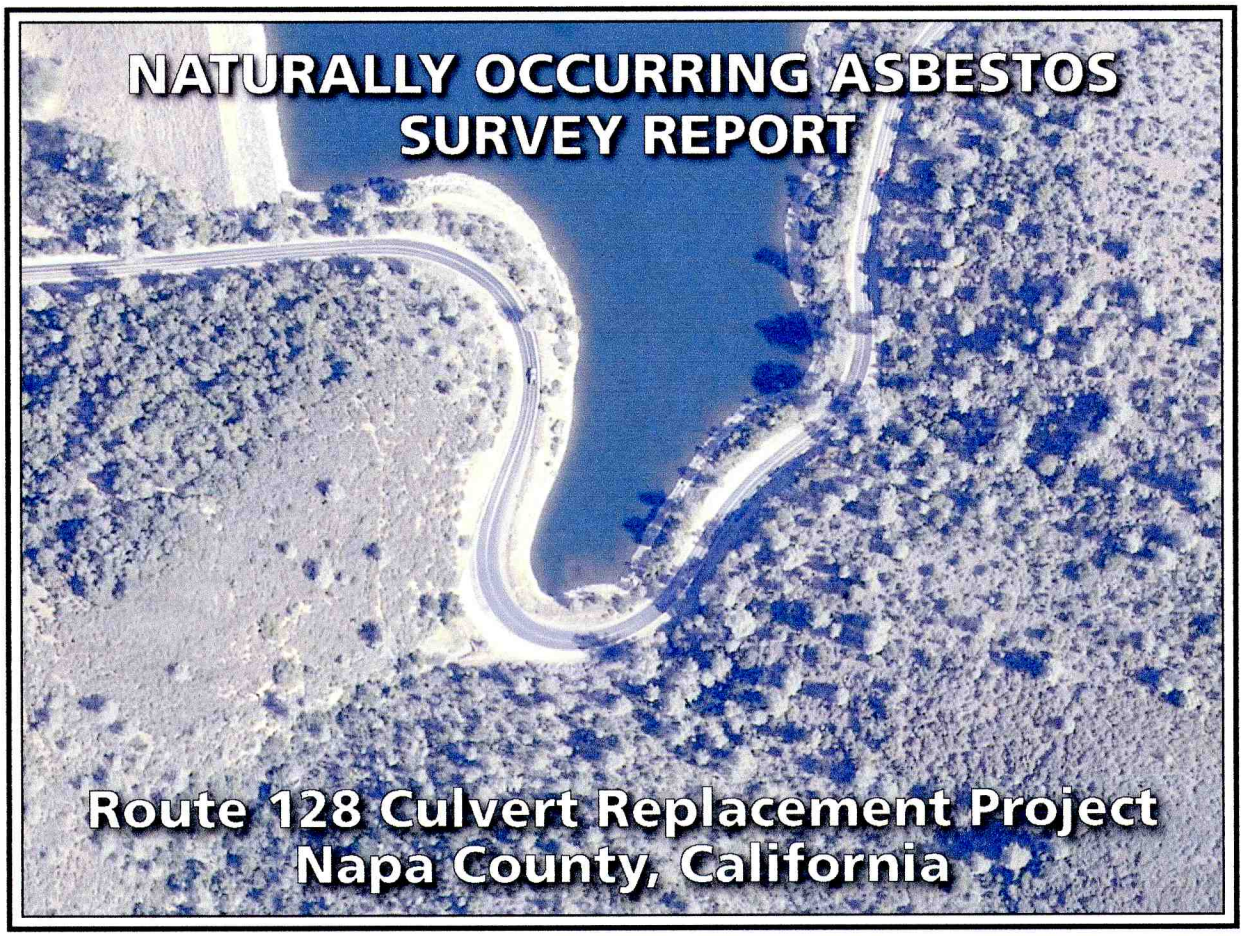

NATURALLY OCCURRING ASBESTOS SURVEY REPORT

Route 128 Culvert Replacement Project
Napa County, California

PREPARED FOR:

CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660, MS8-C
OAKLAND, CALIFORNIA 94623

PREPARED BY:

GEOCON CONSULTANTS, INC.
2356 RESEARCH DRIVE
LIVERMORE, CALIFORNIA 94550

GEOCON PROJECT NO. E8220-06-47
TASK ORDER NO. 47, EA 04-2S3701

JUNE 2006

GEOCON
CONSULTANTS, INC.
ENVIRONMENTAL ■ GEOTECHNICAL ■ MATERIALS

Project No. E8220-06-47
June 20, 2006

Peter Altherr
Caltrans - District 4
P.O. Box 23660, MS8-C
Oakland, California 94623

Subject: ROUTE 128 CULVERT REPLACEMENT PROJECT
NAPA COUNTY, CALIFORNIA
CONTRACT NO. 04A1862
TASK ORDER NO. 47, EA 04-2S3701
NATURALLY OCCURRING ASBESTOS SURVEY REPORT

Dear Mr. Altherr:

In accordance with California Department of Transportation (Caltrans) Contract No. 04A1862 and Task Order (TO) No. 47, Geocon Consultants, Inc. has performed environmental engineering services at the project site. The Site consists of the Caltrans right-of-way along State Route 128 in Napa County, California, in the vicinity of Post Mile (PM) 9.5 (approximate Kilometer Post [KP] 15.3), where culvert replacement activities are proposed. The accompanying report summarizes the services performed including a geological reconnaissance, the collection of 9 samples for the investigation of potential impacts due to naturally occurring asbestos, the collection of 5 samples to provide background data on naturally occurring California Title 22 metals, and laboratory testing.

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

Please contact the undersigned if there are any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

PROFESSIONAL GEOLOGIST
8/31/06
DAVID W. BIEBER
No. 2092
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

David W. Bieber, RGP, CEG, CHG
Senior Geologist

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Regional Manager

DWB:RD:jaj

(5 + 2CD) Addressee

TABLE OF CONTENTS

NATURALLY OCCURRING ASBESTOS SURVEY REPORT — Page

1.0 INTRODUCTION 1
- 1.1 Project Description and Proposed Improvements 1
- 1.2 General Objectives 1

2.0 REGULATORY BACKGROUND 2

3.0 SCOPE OF SERVICES 4
- 3.1 Pre-field Activities 4
- 3.2 Field Activities 4
  - 3.2.1 Geological Reconnaissance 4
  - 3.2.2 Sample Collection 4

4.0 INVESTIGATIVE METHODS 6
- 4.1 Naturally Occurring Asbestos 6
- 4.2 Title 22 Metals 6
- 4.3 Quality Assurance/Quality Control Procedures 7
- 4.4 Laboratory Analyses 7
  - 4.4.1 Naturally Occurring Asbestos Samples 7
  - 4.4.2 Title 22 Metals Samples 7
  - 4.4.3 Laboratory QA/QC Procedures 8

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS 9
- 5.1 Site Geology 9
- 5.2 NOA Analytical Results 9
- 5.3 Title 22 Metals Analytical Results 9
- 5.4 Review of ATL Laboratory QA/QC 10

6.0 CONCLUSIONS AND RECOMMENDATIONS 11
- 6.1 Naturally Occurring Asbestos 11
- 6.2 Title 22 Metals 11

7.0 REPORT LIMITATIONS 12

FIGURES
1. Vicinity Map
2. Site Plan

TABLES
1. Summary of Soil Analytical Results – Asbestos
2. Summary of Soil Analytical Results – Title 22 Metals

APPENDICES
A. EMSL Laboratory Reports and Chain-of-Custody Documentation
B. ATL Laboratory Reports and Chain-of-Custody Documentation

NATURALLY OCCURRING ASBESTOS SURVEY REPORT

1.0 INTRODUCTION

This Naturally Occurring Asbestos (NOA) Survey Report for the State Route 128, Napa County, California (Napa-128), culvert replacement project was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A1862 and Task Order (TO) No. 47, EA 04-2S3701.

1.1 Project Description and Proposed Improvements

The Site consists of one culvert location along Route 128 at Post Mile (PM) 9.5 (approximate Kilometer Post [KP] 15.3) in the vicinity of Lake Hennessey in Napa County, California. The location of the Site is depicted on the Vicinity Map, Figure 1. Caltrans intends to make roadway improvements on the Site that include pavement rehabilitation and the replacement of the culvert.

1.2 General Objectives

The primary purpose of the scope of services outlined in TO No. 47 was to evaluate whether NOA is present above regulatory thresholds on the Site. A secondary objective was to collect data on naturally occurring background concentrations of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, mercury, nickel, selenium, silver, thallium, vanadium, and zinc (Title 22 metals) in the native soil and rock at the Site. Geologic mapping by the California Geologic Survey (CGS) depicts an ultramafic rock formation in the vicinity of the Site. The alteration of ultramafic rocks can lead to the formation of NOA minerals. Construction activities proposed by Caltrans associated with the roadway improvements may disturb NOA-containing soils and/or rock units adjacent to the roadway, if present on the Site. The investigative results will be used by Caltrans to inform the construction contractor if soil and/or rock containing NOA at or above regulatory action levels are present within the project boundaries for health, safety and disposal purposes.

2.0 REGULATORY BACKGROUND

2.1 Naturally Occurring Asbestos

The California Air Resources Board (CARB) has mitigation practices for construction, grading, quarrying, and surface mining operations that may disturb natural occurrences of asbestos outlined in Title 17 California Code of Regulations (CCR), Section 93105. NOA potentially poses a health hazard when it becomes an airborne particulate. The roadway improvement activities proposed on the Site could disturb NOA-containing rock and soil, thereby, potentially creating an airborne asbestos hazard. Mitigation practices can reduce the risk of exposure to airborne NOA-containing dust. Dust suppression practices include wetting the materials being disturbed and wearing approved High Efficiency Particulate Air (HEPA) masks during construction activities. Similar asbestos dust control methods are outlined in the Title 17 CCR, Section 93106 for airborne asbestos in road surfacing applications. Using surfacing material with 0.25% or more asbestos material is not permitted and wetting of the material or the application of a surface sealant is recommended to minimize disturbance of the asbestos material. Onsite reuse or disposal of NOA-containing materials is allowed by 17 CCR 93106 and 17 CCR 93105 if it is buried under at least 0.25 foot (ft) (0.08 meter [m]) of material that does not contain NOA.

2.2 Title 22 Metals

For a waste containing metals, the waste is classified as "California hazardous" when: 1) the total metal content exceeds the Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the Soluble Threshold Limit Concentration (STLC) based on a Waste Extraction Test (WET) analysis. A material is classified as "Resource, Conservation, and Recovery Act (RCRA) hazardous" when the soluble metal content exceeds the Federal Regulatory Level based on Toxicity Characteristic Leaching Procedure (TCLP) testing.

The regulatory criteria for suspected hazards on the Site are based on toxicity. Wastes may also be classified as hazardous based on other criteria such as flammability, reactivity, corrosivity, and ignitability. However, for the purposes of this investigation, toxicity (e.g., chromium and nickel concentrations) and corrosivity (e.g., pH) are the primary factors considered for waste classification. Based on current and past site usage, onsite soil is not expected to exhibit other hazardous waste characteristics.

The Department of Toxic Substances Control (DTSC) regulates and interprets hazardous waste laws in California. DTSC generally considers excavated or transported materials that exhibit "hazardous waste" characteristics to be a "waste" requiring proper management, treatment and disposal. It is noted that in addition to DTSC regulations, health and safety requirements and other local agency

requirements may also apply to the handling and disposal of heavy metals-impacted soil. Waste that is classified as either "California hazardous" or "RCRA hazardous," requires management as a hazardous waste and disposal at an appropriately permitted disposal facility.

Under the Bevill Amendment (40 CFR Section 261.4(b)(7)), materials generated during the extraction and beneficiation of metallic ores are interpreted to be exempted from RCRA requirements. Extraction materials include overburden and waste rock removed in mining operations. Beneficiation includes all processing methods (crushing, cyanization, amalgamation) involved in the extraction of metals from ore. The State of California also incorporates this exemption in Title 22, Division 4.5, Chapter 11, Article 1, § 66261.4 of the CCR.

The United States Environmental Protection Agency (EPA) holds that the boundaries of a mine site are not limited to the parcel boundaries and that the Bevill Amendment would apply to waste on neighboring properties impacted by mine drainage, waste rock or tailings transported offsite by runoff or mechanical means. However, the Bevill Amendment does not provide protection from liability associated with the risk to human health and the environment posed by contaminated soil, sediments, or tailings. Furthermore, potential liability exists under the DTSC Site Mitigation Program and EPA Superfund programs. Therefore, regardless of exemption under the Bevill Amendment, contaminated soils, sediments and tailings associated with mining of metallic ore may require special cleanup and/or handling based on threats to public health or the environment.

3.0 SCOPE OF SERVICES

The scope of services requested by Caltrans under TO No. 47, EA 04-2S3701 included the following:

3.1 Pre-field Activities

- Conducted a Task Order Meeting at the Site on January 23, 2006, to discuss the TO scope of services. Caltrans Task Order Manager Pete Altherr and Geocon representative David Bieber were present at the meeting. The purpose of the Task Order Meeting was to clarify and discuss project related issues and concerns.
- Prepared a Workplan dated March 17, 2006, which describes the requested scope of services and quality assurance/quality control (QA/QC) sampling and laboratory procedures.
- Prepared a Health and Safety Plan dated March 10, 2006, to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Reviewed existing geological maps and studies of the Site and surrounding areas for information on the potential presence of NOA at the Site.
- Retained the services of Advanced Technology Laboratories (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analysis of samples.
- Retained the services of EMSL Inc. (EMSL), a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of samples.

3.2 Field Activities

3.2.1 Geological Reconnaissance

A Site geological reconnaissance was performed on April 18, 2006, to observe geologic features visible from the roadway and within the Caltrans designated project study. The geological reconnaissance was performed by David Bieber, a California Certified Engineering Geologist (CEG No. 2092) with specialized experience in the assessment of NOA. The rock and soil types and distributions observed during geological reconnaissance were used to determine where to collect samples. The NOA and Title 22 Metals sample locations were chosen in the field by the Geocon field supervisor and Caltrans Quality Assurance Manager. The approximate sample locations were identified and plotted in the field on an aerial photograph of the Site.

3.2.2 Sample Collection

The sampling activities included the collection of seven NOA samples and three Title 22 metals samples from hand-auger borings. An additional two NOA samples and two Title 22 metals samples were collected as rock chip samples from outcrops on the Site. The soil samples were collected from hand-auger soil borings advanced to a depth of 1.0 ft (0.3 m) below ground surface (bgs) or until

refusal. Each individual soil sample was collected by placing the soil recovered from the boring in a one-gallon Ziploc® re-sealable plastic bag, after which the soil was field-homogenized.

Four samples were collected from rock outcrops by using a rock hammer to break off material from the outcrops. Outcrop samples were be placed in labeled plastic bags for delivery to the laboratory. A minimum of one quart of material was collected for each rock sample.

Each sample bag was labeled with the sample number, as well as the date and time collected. The borings were backfilled with excess soil from the sampling. The approximate sample locations are depicted on Figure 2.

4.0 INVESTIGATIVE METHODS

4.1 Naturally Occurring Asbestos

Two soil samples (NOA6 and NOA7) and two rock samples (NOA8 and NOA9) were collected as "targeted" or biased samples for NOA analysis. A targeted sample is one collected in a location where NOA is most likely to be found and is used as a qualitative indicator of whether NOA is present on a site. Targeted samples are not intended for use to indicate average NOA concentrations, but rather provide what is essentially a "yes/no" assessment of whether NOA is present. The Workplan called for the collection of a minimum of five targeted samples, but the number was reduced by mutual consent of the Geocon field manager and the Caltrans TO manager. The reason the number of targeted samples was reduced was because less variation was observed in the site materials than originally anticipated. Two of the targeted samples were collected from rock outcrops adjacent to the area where site materials will likely be disturbed. Rock samples for NOA analysis were collected from sample locations where fibrous appearing material was observed, the rock appeared to be fractured/sheared, and/or where evidence of hydrothermal alteration was observed. Two soil samples were collected as targeted samples from the drainage within the Caltrans right-of-way feeding the culvert. The targeted NOA soil samples were collected where fines appeared to be concentrated and possible asbestos fiber bundles were observed.

Five of the NOA soil samples (NOA1 through NOA5) were collected as distributed samples from locations on the Site. Distributed samples are those collected at enough locations to determine the average NOA concentration in a geologic unit or geographic location. Three distributed NOA soil samples were collected from the roadway embankment fill material on either side of the discharge end of the existing culvert. An additional two distributed NOA soil samples were collected from the roadway embankment fill on either side of the inlet end of the existing culvert. The distributed samples were collected to characterize the roadway embankment materials likely to be disturbed during the culvert replacement.

The NOA samples were delivered to EMSL for asbestos analysis under chain-of-custody (COC) protocol. The approximate NOA sample locations are depicted on the Site Plan.

4.2 Title 22 Metals

Three soil samples were collected from hand-auger soil borings (HM1, HM4, and HM5) and two samples were collected from rock outcrops (HM2 and HM3) for Title 22 metals analysis. The samples for Title 22 metals analysis were collected as far from the roadway, at an elevation higher than that of the roadway, as was feasible while still within the State's right-of-way; the objective being to attempt

to obtain samples that did not contain metals from vehicle emissions or from surface water runoff from the roadway.

The samples for Title 22 metals analysis were delivered to ATL for under COC protocol. The approximate NOA sample locations are depicted on the Site Plan.

4.3 Quality Assurance/Quality Control Procedures

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

4.4 Laboratory Analyses

4.4.1 Naturally Occurring Asbestos Samples

Nine NOA samples were submitted to EMSL for asbestos fiber analysis by CARB Method 435 on a 10-day turn-around-time (TAT) basis. The CARB 435 preparation includes milling the sample to a -200 mesh size which also homogenizes the sample. EMSL analyzed the samples by the polarized light microscopy (PLM) method for asbestos by CARB Method 435 (CARB 435). Five of the NOA samples (NOA1, NOA4, NOA5, NOA7, and NOA8) were analyzed using a 400 point count, thus yielding a laboratory minimum detection limit (MDL) of 0.25% by area, and four (NOA2, NOA3, NOA6, and NOA9) were analyzed by PLM using a 1,000 point count, thus yielding a laboratory MDL of 0.1% by area.

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

4.4.2 Title 22 Metals Samples

Four samples analysis were analyzed by EMSL for the metals as follows:

- Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc following EPA Test Method 6010B.
- Mercury by EPA Test Method 7471A.

Prior to submitting the samples to the laboratory, the COC documentation was reviewed for accuracy and completeness. Reproductions of the ATL metals laboratory reports and COC documentation are presented in Appendix B.

4.4.3 Laboratory QA/QC Procedures

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

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

Prior to submitting the samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness. Reproductions of the laboratory reports and chain-of-custody documentation are presented in Appendices A and B.

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

5.1 Site Geology

We reviewed existing geological maps and studies of the Site and surrounding areas prior to beginning the field work. The review was used to gather information regarding the potential presence of NOA on the Site. According to the CGS 1982 *Geologic Map of the Santa Rosa Quadrangle, California* (Santa Rosa Sheet) the bedrock in the area evaluated is comprised of ultramafic rocks of the Coast Range Ophiolite, a known source of NOA and naturally occurring Title 22 metals.

We performed a geologic assessment of the lithology of outcrops visible within the Caltrans right-of-way. The visible outcrops appeared to be composed primarily of weathered serpentine and serpentinized volcanic rocks. Apparently fibrous material resembling asbestos was observed filling fractures within the rock matrix. The observed geology generally matches the geology depicted on the Santa Rosa Sheet. The soil derived from weathering of the outcrops on the Site was observed to be soft to moderately firm, brownish black, clayey silt (ML). The alluvial soils observed in the drainage divide feeding the culvert are generally loose, dark yellowish brown cobbly sand (GW) to silty sand (SM) stream sediments. The alluvial soils contained scattered coarse sand-sized particles that appeared to be bundles of fibrous material. We estimate that the fibrous-appearing bundles make up less than 0.1% of the sediment. The observed embankment fill material adjacent to the existing culvert is primarily a moderately firm, light olive gray to dusky brown, mixture of sand, silt, and cobble with some clay. Groundwater was not encountered during the investigation to the maximum depth explored of 1.0 ft (0.3 m) bgs.

5.2 NOA Analytical Results

Seven soil samples (NOA1 through NOA7) and two rock outcrop samples (NOA8 and NOA9) were analyzed by EMSL for asbestos by CARB 435 PLM. Five of the samples (NOA1, NOA4, NOA5, NOA7, and NOA8) were analyzed at an MDL of 0.25%, and four samples (NOA2, NOA3, NOA6, and NOA9) at an MDL of 0.1%. None of the soil samples were reported to contain asbestos at or above the MDL or the regulatory limit of 0.25%. A summary of the asbestos analytical results and the associated sample locations are presented on Table 1. The NOA laboratory reports and chain-of-custody documentation are presented in Appendix A.

5.3 Title 22 Metals Analytical Results

Five samples (HM1 through HM5) were analyzed by ATL for Title 22 metals. One of the samples (HM1) was collected from the soil derived from weathering of the outcrops; two samples (HM2 and HM3) were collected as outcrop samples, and two samples (HM4 and HM5) were collected from the stream sediments upstream of the culvert. The metals reported on the Site included antimony in three

samples at a maximum of 6.8 milligrams per kilogram (mg/kg); barium in each of the samples at a maximum of 45 mg/kg; chromium in each of the samples at a maximum of 1,100 mg/kg; cobalt in each of the samples at a maximum of 160 mg/kg; copper in each of the samples at a maximum of 12 mg/kg; lead in each of the samples at a maximum of 4.8 mg/kg; nickel in each of the samples at a maximum of 2,900 mg/kg; thallium in one of the samples at 1.4 mg/kg; vanadium in each of the samples at a maximum of 31 mg/kg; and zinc in each of the samples at a maximum of 40 mg/kg. Summary of the metals analytical results and the associated sample types are presented on Table 2. The Title 22 metals laboratory reports and chain-of-custody documentation are presented in Appendix B.

5.4 Review of ATL Laboratory QA/QC

Geocon reviewed the analytical laboratory QA/QC provided with the ATL laboratory reports. The data show acceptable surrogate recoveries and non-detect results for the method blanks and acceptable recoveries for the LCS. Based on this limited data review, no additional qualifications of the data presented herein are necessary, and the data are of sufficient quality for the purposes of this report.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Naturally Occurring Asbestos

The mapped and observed geology of the Site is indicative of a metamorphic regime where NOA minerals are likely to occur. Fibrous-appearing material was also observed in the outcrops and sediments on the Site. However, NOA was not reported at or above the CARB limit of 0.25% in the nine samples collected.

6.2 Title 22 Metals

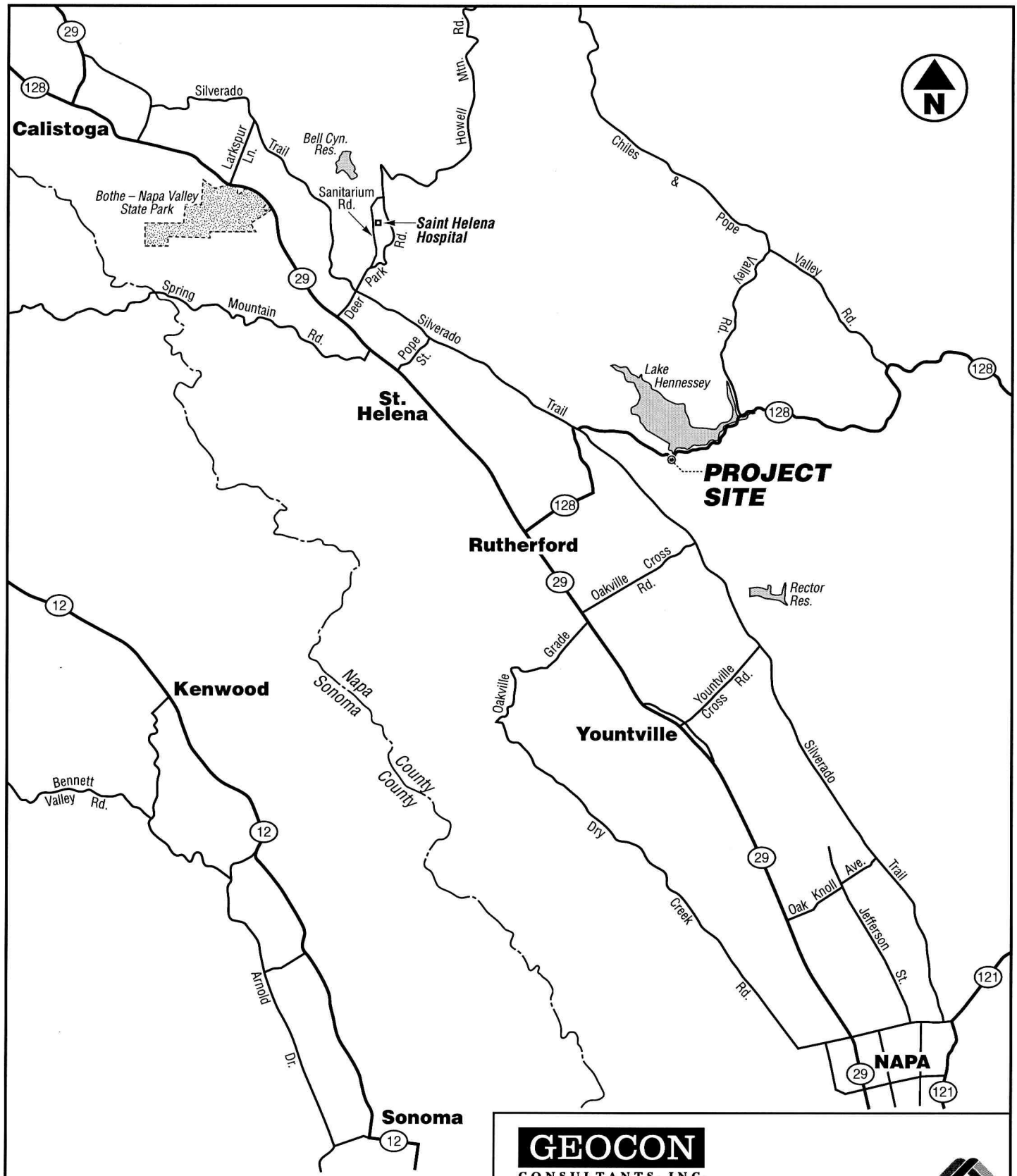
The outcrops on and adjacent to the Site are comprised of ultramafic rocks. Title 22 metals commonly associated with ultramafic rocks in the Coast Range Ophiolite in California include chromium and nickel. Nickel was reported in each of the five Title 22 metals samples, and was reported above the TTLC regulatory level of 2,000 mg/kg in one sample, HM1. Chromium also was reported in each of the five Title 22 metals samples but not above the TTLC. The Title 22 metals samples were collected upslope and away from the highway, and indications of human activities likely to result in elevated levels of Title 22 metals were not observed upslope of or around the sampling locations. The reported levels of chromium and nickel were higher in the soil apparently derived from the bedrock than in the rock itself, possibly because these metals are less soluble than other rock constituents under the local conditions, and so were not dissolved and carried away by waters flowing through the soil. The levels of nickel and chromium reported on the Site are consistent with the naturally occurring levels observed in samples collected by Geocon from other ophiolite bodies within the Northern California Coast Ranges

Nickel and Chromium were detected at average levels approaching the TTLC level in the native soil on the Site. The roadway fill was not tested for Title 22 metals, as the purpose of the metal sampling was to obtain information on background metals. However, the roadway fill does not appear to be material derived from the Site, though it is likely from a local source. Elevated levels of Title 22 metals may occur naturally in the roadway fill, so we recommend that the contractor implement health and safety measures to minimize exposure to potentially metals containing dust. Additionally, while average levels of Title 22 metals in the roadway fill are likely below TTLC levels, the contractor should evaluate materials which will be transported off site for disposal to properly characterize them.

7.0 REPORT LIMITATIONS

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

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



0 1 2 3

Scale in Miles

GEOCON
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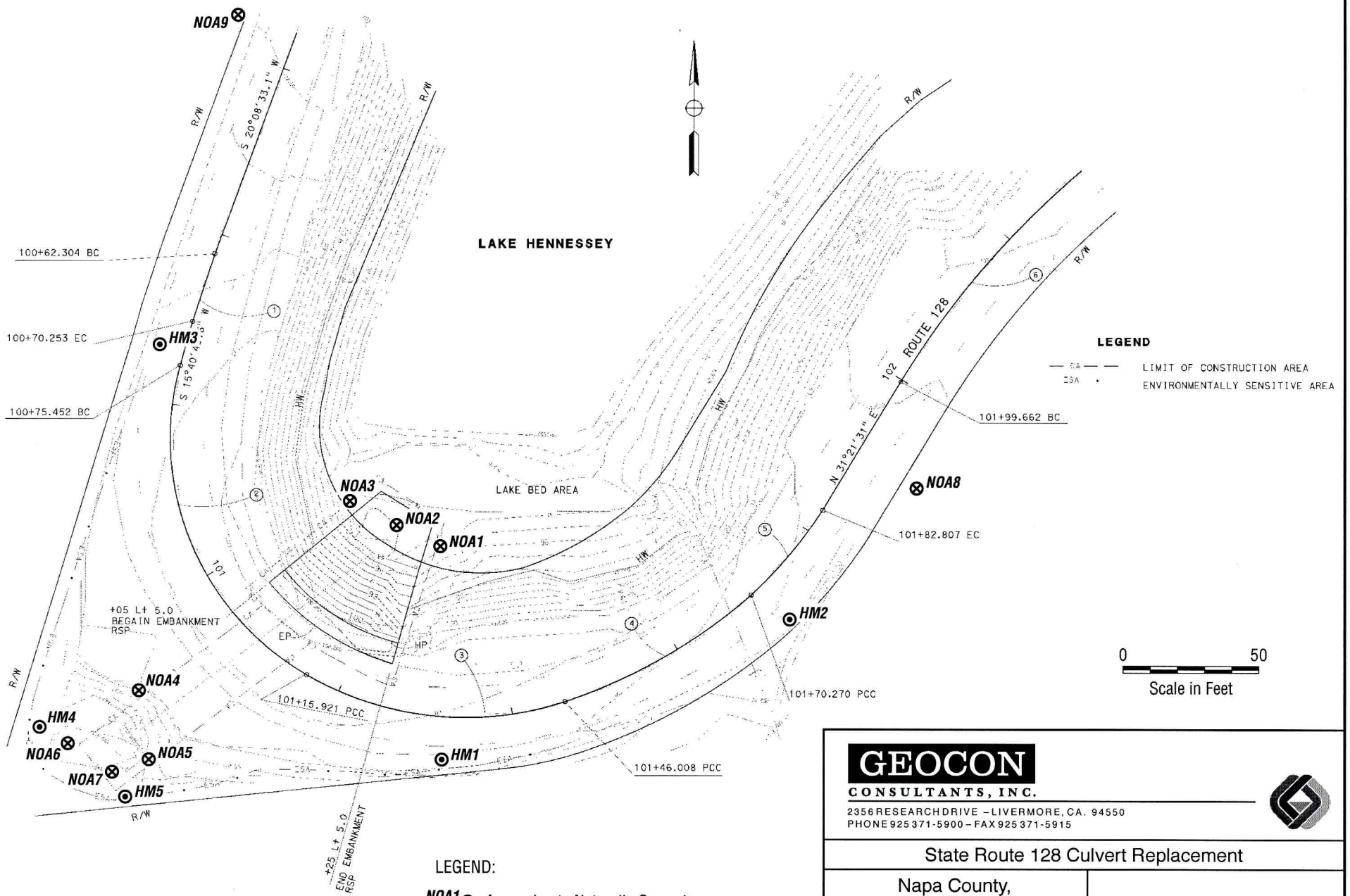
State Route 128 Culvert Replacement		
Napa County, California	**VICINITY MAP**	
GEOCON Proj. No. E8220-06-47		
Task Order No. 47	June 2006	Figure 1



LEGEND:

NOA1 ⊗ Approximate Naturally Occurring Asbestos Sample Location

HM1 ⊙ Approximate Title 22 Metals Sample Location

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State Route 128 Culvert Replacement

Napa County, California

GEOCON Proj. No. E8220-06-47

Task Order No. 47

SITE PLAN

June 2006

Figure 2

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS – ASBESTOS
TASK ORDER NO. 47, EA 04-2S3701
HIGHWAY 148 (LAKE HENNESSEY) POST MILE 9.5 (KILOMETER POST 15.3)
NAPA COUNTY, CALIFORNIA

SAMPLE I.D.	SAMPLE TYPE	SAMPLE LOCATION	ASBESTOS %(1) PLM	ASBESTOS TYPE
NAPA128-NOA1	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.25	NA
NAPA128-NOA2	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.1	NA
NAPA128-NOA3	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.1	NA
NAPA128-NOA4	Soil Sample (Distributed Sample)	Roadway embankment adjacent to inlet end of existing culvert	<0.25	NA
NAPA128-NOA5	Soil Sample (Distributed Sample)	Roadway embankment adjacent to inlet end of existing culvert	<0.25	NA
NAPA128-NOA6	Soil Sample (Targeted Sample)	Sediment in bed of drainage upstream of the existing culvert	<0.1	NA
NAPA128-NOA7	Soil Sample (Targeted Sample)	Sediment in bed of drainage upstream of the existing culvert	<0.25	NA
NAPA128-NOA8	Outcrop Sample (Targeted Sample)	Outcrop on the highway-east side side of the Site	<0.25	NA
NAPA128-NOA9	Outcrop Sample (Targeted Sample)	Outcrop on the highway-west side side of the Site	<0.1	NA

Notes:

NOA = Naturally Occurring Asbestos
PLM = Polarized light microscopy
NAPA 128 = State Route 128 in Napa County
< = Less than the specified laboratory test method detection limits
NA = Not Applicable
(1) - Analysis by California Air Resources Board Method 435

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS – ASBESTOS
TASK ORDER NO. 47, EA 04-2S3701
HIGHWAY 148 (LAKE HENNESSEY) POST MILE 9.5 (KILOMETER POST 15.3)
NAPA COUNTY, CALIFORNIA

SAMPLE I.D.	SAMPLE TYPE	SAMPLE LOCATION	ASBESTOS %(1) PLM	ASBESTOS TYPE
NAPA128-NOA1	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.25	NA
NAPA128-NOA2	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.1	NA
NAPA128-NOA3	Soil Sample (Distributed Sample)	Roadway embankment adjacent to discharge end of existing culvert	<0.1	NA
NAPA128-NOA4	Soil Sample (Distributed Sample)	Roadway embankment adjacent to inlet end of existing culvert	<0.25	NA
NAPA128-NOA5	Soil Sample (Distributed Sample)	Roadway embankment adjacent to inlet end of existing culvert	<0.25	NA
NAPA128-NOA6	Soil Sample (Targeted Sample)	Sediment in bed of drainage upstream of the existing culvert	<0.1	NA
NAPA128-NOA7	Soil Sample (Targeted Sample)	Sediment in bed of drainage upstream of the existing culvert	<0.25	NA
NAPA128-NOA8	Outcrop Sample (Targeted Sample)	Outcrop on the highway-east side side of the Site	<0.25	NA
NAPA128-NOA9	Outcrop Sample (Targeted Sample)	Outcrop on the highway-west side side of the Site	<0.1	NA

Notes:

NOA = Naturally Occurring Asbestos
PLM = Polarized light microscopy
NAPA 128 = State Route 128 in Napa County
< = Less than the specified laboratory test method detection limits
NA = Not Applicable
(1) - Analysis by California Air Resources Board Method 435

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS – TITLE 22 METALS
TASK ORDER NO. 47, EA 04-2S3701
HIGHWAY 148 (LAKE HENNESSEY) POST MILE 9.5 (KILOMETER POST 15.3)
NAPA COUNTY, CALIFORNIA

EPA Test Method		6010B																7471A
	Sample Type	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
Reporting Limit (mg/kg)		2.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.10
STLC Regulatory Level (mg/l)		15	5.0	100	0.75	1.0	5.0	80	25	5.0	350	20	1.0	5.0	7.0	24	250	0.2
TTLC Regulatory Level (mg/kg)		500	500	10,000	75	100	2,500	8,000	2,500	1,000	3,500	2,000	100	500	700	2,400	5,000	20
Sample ID		Results Reported as mg/kg																
NAPA128 - HM1	Soil	3.7	<1.0	45	<1.0	<1.0	1,000	160	12	4.8	<1.0	2,900	<1.0	<1.0	1.4	22	40	<0.10
NAPA128 - HM2	Outcrop	<2.0	<1.0	3.8	<1.0	<1.0	240	79	3.3	2.0	<1.0	1,600	<1.0	<1.0	<1.0	4.3	15	<0.10
NAPA128 - HM3	Outcrop	<2.0	<1.0	5.8	<1.0	<1.0	310	83	3.8	2.1	<1.0	1,500	<1.0	<1.0	<1.0	4.3	20	<0.10
NAPA128 - HM4	Streambed sediment	6.8	<1.0	39	<1.0	<1.0	1,100	60	12	3.6	<1.0	1,200	<1.0	<1.0	<1.0	31	20	<0.10
NAPA128 - HM5	Streambed sediment	2.4	<1.0	38	<1.0	<1.0	590	50	10	4.8	<1.0	860	<1.0	<1.0	<1.0	27	18	<0.10

Notes:

NAPA 128 = State Route 128 in Napa County
STLC = Soluble Threshold Limit Concentration
TTLC = Total Threshold Limit Concentration
EPA = Environmental Protection Agency
mg/kg = Milligrams per kilogram
mg/l = Milligrams per liter
NA = Not available
< = Less than the laboratory method detection limit

APPENDIX A

EMSL Analytical, Inc
2235 Polvorosa Ave, Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: 5108953680 Email: milpitaslab@emsl.com

Attn: **David Bieber**
Geocon Consultants
3160 Gold Valley Dr.
Suite 800
Rancho Cordova, CA 95742

Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **E8220-06-47 / Rout 128 Culverts**

Customer ID: GECN80
Customer PO: E8220-06-47
Received: 04/19/06 10:00 AM
EMSL Order: 090601673

EMSL Proj: GEC9-510
Analysis Date: 5/12/2006
Report Date: 5/12/2006

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NAPA128-NOA-1, Roadway prism *090601673-0001*	Lake side, east of culvert, 0930	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-4, Roadway prism *090601673-0002*	Steam side, west of culvert, 1005	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-5, Roadway prism *090601673-0003*	Stream side, east of culvert, 1010	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-7, Stream sediment *090601673-0004*	Defrital sample targeted, 1040	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-8, Out crop *090601673-0005*	Targeted, 1048	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)
Lansing Wong (5)

or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM.

EMSL Analytical, Inc
2235 Polvorosa Ave, Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: 5108953680 Email: milpitaslab@emsl.com

Attn: **David Bieber**
Geocon Consultants
3160 Gold Valley Dr.
Suite 800
Rancho Cordova, CA 95742

Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **E8220-06-47 / Rout 128 Culverts**

Customer ID:	GECN80
Customer PO:	E8220-06-47
Received:	04/19/06 10:00 AM
EMSL Order:	090601673
EMSL Proj:	GEC9-510
Analysis Date:	5/12/2006
Report Date:	5/12/2006

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
NAPA128-NOA-2, Roadway prism *090601673-0006*	Lakeside at culvert, 0933	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-3, Roadway prism *090601673-0007*	Lakeside, west of culvert, 0948	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-6, Stream sediment *090601673-0008*	Defrital sample targeted, 1035	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NAPA128-NOA-9, Out crop *090601673-0009*	Targeted, 1055	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)
Lansing Wong (4)

or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less then the limit of detection undergo additional analysis via TEM.

THIS IS THE LAST PAGE OF THE REPORT.

90601 73

Chain of Custody

Asbestos Lab Services

EMSL Analytical, Inc.
Suite 230
2235 Polvorosa Ave
San Leandro,
CA 94577
Phone: (510) 895-3675 (888) 455-3675
Fax: (510) 895-3680
http://www.emsl.com

Please print all information legibly.

Company:	Geocon Consultants, Inc.	***Bill To:***	Geocon Consultants, Inc.
Address1:	3160 Gold Valley Drive	*Address1:*	3160 Gold Valley Drive
Address2:	Suite 800	*Address2:*	Suite 800
City, State:	Rancho Cordova, CA	*City, State:*	Rancho Cordova, CA
Zip/Post Code:	95742	*Zip/Post Code:*	95742
Country:	USA	*Country:*	USA
Contact Name:	David Bieber	***Attn:***	David Bieber
Phone:	916.852.9118	*Phone:*	916.852.9118
Fax:	916.852.9132	*Fax:*	916.852.9132
Email:	bieber@geoconinc.com	*Email:*	bieber@geoconinc.com
EMSL Rep:	Daniel Korcher	***P.O. Number:***	E8220-06-47
Project Name/Number:	Rout 128 Culverts / E8220-06-47		

MATRIX			TURNAROUND			
☐ Air	☒ Soil	☐ Micro-Vac	☐ 3 Hours	☐ 6 Hours	☐ Same Day or 12 Hours*	☐ 24 Hours (1 day)
☐ Bulk	☐ Drinking Water		☐ 48 Hours (2 days)	☐ 72 Hours (3 days)	☐ 96 Hours (4 days)	☐ 120 Hours (5 days)
☐ Wipe	☐ Wastewater		☒ 144+ hours (6-10 days)			

TEM AIR, 3 hours, 6 hours, Please call ahead to schedule. There is a premium charge for 3-hour tat, please call 1-800-220-3675 for price prior to sending samples. You will be asked to sign an authorization form for this service.

***12 hours (must arrive by 11:00a.m. Mon -Fri.), Please Refer to Price Quote**

PCM - Air
- ☐ NIOSH 7400(A) Issue 2: August 1994
- ☐ OSHA w/TWA
- ☐ Other:

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ EPA Point Count
- ☐ NY Stratified Point Count
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ NIOSH 9002:
- ☐ EMSL Standard Addition:

SEM Air or Bulk
- ☐ Qualitative
- ☐ Quantitative

TEM Air
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402
- ☐ EPA Level II

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP - 1988-02
- ☐ TEM NOB (Gravimetric) NYS 198.4
- ☐ EMSL Standard Addition:

PLM Soil
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

TEM Microvac/Wipe
- ☐ ASTM D 5755-95 (quantative method)
- ☐ Wipe Qualitative

XRD
- ☐ Asbestos
- ☐ Silica NIOSH 7500

OTHER
- ☒ CARB435

Recd by: [illegible] 4/19/06 [illegible]

SEE SAMLE FOR LEVEL

90601073

Chain of Custody

Asbestos Lab Services

EMSL Analytical, Inc.
Suite 230
2235 Polvorosa Ave
San Leandro,
CA 94577
Phone: (510) 895-3675 (888) 455-3675
Fax: (510) 895-3680
http://www.emsl.com

Please print all information legibly.

Client Sample # (s) NAPA 128-NOA 1 - NAPA 128-NOA 9 **Total Samples #:** 9

Relinquished: [signature] **Date:** 4/18/06 **Time:** 1445

Received: [signature] **Date:** 4/19/06 **Time:** 10:00 UPS

Relinquished: **Date:** **Time:**

Received: **Date:** **Time:**

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION			VOLUME (if applicable)	Level
NAPA 128 - NOA1	Roadway Prism	Lake Side East of culvert	0930	1/2 Gallon	A
NAPA 128 - NOA 2	Roadway Prism	Lake side At culvert	0933	1/2 Gallon	B
NAPA 128 - NOA 3	Roadway Prism	Lakeside West of culvert	0948	1/2 Gallon	B
NAPA 128 - NOA4	Roadway Prism	Stream side West of culvert	1005	1/2 Gallon	A
NAPA 128 - NOA 5	Roadway Prism	Streamside East of culvert	1010	1/2 Gallon	A
NAPA 128 - NOA6	Stream sediment	Detrital Sample Targeted	1035	1/2 Gallon	B
NAPA 128 - NOA 7	Stream Sediment	Detrital Sample Targeted	1040	1/2 Gallon	A
NAPA 128 - NOA 8	Outcrop Sample	Targeted	1048	1/2 Gall	A
NAPA 128 - NOA9	Outcrop Sample	Targeted	1055	1/3 Gallon	B

APPENDIX B

May 03, 2006

RECEIVED
MAY 25 2006
BY: GEOCON

ACCREDITED IN ACCORDANCE WITH nelac

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 083891

David Bieber
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

RE: Napa 128 Culvert Replacement, E8220-06-47

Attention: David Bieber

Enclosed are the results for sample(s) received on April 19, 2006 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

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

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Lab Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47
Lab ID: 083891-001

Client Sample ID: NAPA 128-HM1
Collection Date: 4/18/2006 8:20:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP6_060425B	QC Batch: 27737			PrepDate:	4/25/2006	Analyst: **RQ**
Antimony	3.7	2.0		mg/Kg	1	4/25/2006
Arsenic	ND	1.0		mg/Kg	1	4/25/2006
Barium	45	1.0		mg/Kg	1	4/25/2006
Beryllium	ND	1.0		mg/Kg	1	4/25/2006
Cadmium	ND	1.0		mg/Kg	1	4/25/2006
Chromium	1000	1.0		mg/Kg	1	4/25/2006
Cobalt	160	1.0		mg/Kg	1	4/25/2006
Copper	12	2.0		mg/Kg	1	4/25/2006
Lead	4.8	1.0		mg/Kg	1	4/25/2006
Molybdenum	ND	1.0		mg/Kg	1	4/25/2006
Nickel	2900	50		mg/Kg	50	4/25/2006
Selenium	ND	1.0		mg/Kg	1	4/25/2006
Silver	ND	1.0		mg/Kg	1	4/25/2006
Thallium	1.4	1.0		mg/Kg	1	4/25/2006
Vanadium	22	1.0		mg/Kg	1	4/25/2006
Zinc	40	1.0		mg/Kg	1	4/25/2006
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA5_060425D	QC Batch: 27738			PrepDate:	4/25/2006	Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1	4/25/2006

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Lab Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47
Lab ID: 083891-002

Client Sample ID: NAPA 128-HM2
Collection Date: 4/18/2006 8:30:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP6_060425B	QC Batch: 27737			PrepDate:	4/25/2006	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	4/25/2006
Arsenic	ND	1.0		mg/Kg	1	4/25/2006
Barium	3.8	1.0		mg/Kg	1	4/25/2006
Beryllium	ND	1.0		mg/Kg	1	4/25/2006
Cadmium	ND	1.0		mg/Kg	1	4/25/2006
Chromium	240	1.0		mg/Kg	1	4/25/2006
Cobalt	79	1.0		mg/Kg	1	4/25/2006
Copper	3.3	2.0		mg/Kg	1	4/25/2006
Lead	2.0	1.0		mg/Kg	1	4/25/2006
Molybdenum	ND	1.0		mg/Kg	1	4/25/2006
Nickel	1600	1.0		mg/Kg	1	4/25/2006
Selenium	ND	1.0		mg/Kg	1	4/25/2006
Silver	ND	1.0		mg/Kg	1	4/25/2006
Thallium	ND	1.0		mg/Kg	1	4/25/2006
Vanadium	4.3	1.0		mg/Kg	1	4/25/2006
Zinc	15	1.0		mg/Kg	1	4/25/2006
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA5_060425D	QC Batch: 27738			PrepDate:	4/25/2006	Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1	4/25/2006

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Lab Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47
Lab ID: 083891-003

Client Sample ID: NAPA 128-HM3
Collection Date: 4/18/2006 8:50:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP6_060425B	QC Batch: 27737			PrepDate:	4/25/2006	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	4/25/2006
Arsenic	ND	1.0		mg/Kg	1	4/25/2006
Barium	5.8	1.0		mg/Kg	1	4/25/2006
Beryllium	ND	1.0		mg/Kg	1	4/25/2006
Cadmium	ND	1.0		mg/Kg	1	4/25/2006
Chromium	310	1.0		mg/Kg	1	4/25/2006
Cobalt	83	1.0		mg/Kg	1	4/25/2006
Copper	3.8	2.0		mg/Kg	1	4/25/2006
Lead	2.1	1.0		mg/Kg	1	4/25/2006
Molybdenum	ND	1.0		mg/Kg	1	4/25/2006
Nickel	1500	1.0		mg/Kg	1	4/25/2006
Selenium	ND	1.0		mg/Kg	1	4/25/2006
Silver	ND	1.0		mg/Kg	1	4/25/2006
Thallium	ND	1.0		mg/Kg	1	4/25/2006
Vanadium	4.3	1.0		mg/Kg	1	4/25/2006
Zinc	20	1.0		mg/Kg	1	4/25/2006
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA5_060425D	QC Batch: 27738			PrepDate:	4/25/2006	Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1	4/25/2006

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Lab Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47
Lab ID: 083891-004

Client Sample ID: NAPA 128-HM4
Collection Date: 4/18/2006 9:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP6_060425B	QC Batch: 27737			PrepDate:	4/25/2006	Analyst: **RQ**
Antimony	6.8	2.0		mg/Kg	1	4/25/2006
Arsenic	ND	1.0		mg/Kg	1	4/25/2006
Barium	39	1.0		mg/Kg	1	4/25/2006
Beryllium	ND	1.0		mg/Kg	1	4/25/2006
Cadmium	ND	1.0		mg/Kg	1	4/25/2006
Chromium	1100	1.0		mg/Kg	1	4/25/2006
Cobalt	60	1.0		mg/Kg	1	4/25/2006
Copper	12	2.0		mg/Kg	1	4/25/2006
Lead	3.6	1.0		mg/Kg	1	4/25/2006
Molybdenum	ND	1.0		mg/Kg	1	4/25/2006
Nickel	1200	1.0		mg/Kg	1	4/25/2006
Selenium	ND	1.0		mg/Kg	1	4/25/2006
Silver	ND	1.0		mg/Kg	1	4/25/2006
Thallium	ND	1.0		mg/Kg	1	4/25/2006
Vanadium	31	1.0		mg/Kg	1	4/25/2006
Zinc	20	1.0		mg/Kg	1	4/25/2006
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA5_060425D	QC Batch: 27738			PrepDate:	4/25/2006	Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1	4/25/2006

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Lab Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47
Lab ID: 083891-005

Client Sample ID: NAPA 128-HM5
Collection Date: 4/18/2006 9:15:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP6_060425B	QC Batch: 27737			PrepDate:	4/25/2006	Analyst: **RQ**
Antimony	2.4	2.0		mg/Kg	1	4/25/2006
Arsenic	ND	1.0		mg/Kg	1	4/25/2006
Barium	38	1.0		mg/Kg	1	4/25/2006
Beryllium	ND	1.0		mg/Kg	1	4/25/2006
Cadmium	ND	1.0		mg/Kg	1	4/25/2006
Chromium	590	1.0		mg/Kg	1	4/25/2006
Cobalt	50	1.0		mg/Kg	1	4/25/2006
Copper	10	2.0		mg/Kg	1	4/25/2006
Lead	4.8	1.0		mg/Kg	1	4/25/2006
Molybdenum	ND	1.0		mg/Kg	1	4/25/2006
Nickel	860	1.0		mg/Kg	1	4/25/2006
Selenium	ND	1.0		mg/Kg	1	4/25/2006
Silver	ND	1.0		mg/Kg	1	4/25/2006
Thallium	ND	1.0		mg/Kg	1	4/25/2006
Vanadium	27	1.0		mg/Kg	1	4/25/2006
Zinc	18	1.0		mg/Kg	1	4/25/2006
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA5_060425D	QC Batch: 27738			PrepDate:	4/25/2006	Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1	4/25/2006

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

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

Advanced Technology Laboratories

Date: *03-May-06*

CLIENT: Geocon Consultants, Inc.
Work Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-27737** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **PBS** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-27737** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **LCSS** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50	2.0	50.00	0	100	80	120				
Arsenic	49	1.0	50.00	0	99.0	80	120				
Barium	53	1.0	50.00	0	106	80	120				
Beryllium	50	1.0	50.00	0	101	80	120				
Cadmium	52	1.0	50.00	0	105	80	120				
Chromium	53	1.0	50.00	0.1446	106	80	120				
Cobalt	50	1.0	50.00	0	99.1	80	120				
Copper	52	2.0	50.00	0	105	80	120				

Qualifiers:
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interferenc
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

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

CLIENT: Geocon Consultants, Inc.
Work Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-27737** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **LCSS** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50	1.0	50.00	0	99.7	80	120				
Molybdenum	52	1.0	50.00	0	104	80	120				
Nickel	50	1.0	50.00	0.2078	99.6	80	120				
Selenium	48	1.0	50.00	0	95.8	80	120				
Silver	51	1.0	50.00	0	101	80	120				
Thallium	51	1.0	50.00	0	101	80	120				
Vanadium	52	1.0	50.00	0	104	80	120				
Zinc	50	1.0	50.00	0	100	80	120				

Sample ID: **083891-001ADUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **NAPA 128-HM1** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	3.9	2.0						3.693	5.75	20	
Arsenic	ND	1.0						0	0	20	
Barium	48	1.0						45.22	6.33	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	1100	1.0						1006	6.56	20	
Cobalt	180	1.0						163.9	7.00	20	
Copper	14	2.0						12.10	11.5	20	
Lead	6.0	1.0						4.785	22.1	20	R
Molybdenum	ND	1.0						0	0	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	1.3	1.0						1.372	3.45	20	
Vanadium	24	1.0						22.27	7.15	20	
Zinc	43	1.0						39.53	8.89	20	

Qualifiers:
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interferenc
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

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

CLIENT: Geocon Consultants, Inc.
Work Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **083891-001AMS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **NAPA 128-HM1** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	65	2.0	125.0	3.693	48.7	25	108				
Arsenic	100	1.0	125.0	0	79.9	46	118				
Barium	150	1.0	125.0	45.22	85.7	32	131				
Beryllium	110	1.0	125.0	0	88.1	59	104				
Cadmium	120	1.0	125.0	0	98.4	63	105				
Chromium	990	1.0	125.0	1006	-16.1	49	116				S
Cobalt	250	1.0	125.0	163.9	69.4	58	104				
Copper	140	2.0	125.0	12.10	102	54	126				
Lead	110	1.0	125.0	4.785	82.2	31	122				
Molybdenum	110	1.0	125.0	0	88.7	61	104				
Selenium	110	1.0	125.0	0	85.7	53	109				
Silver	120	1.0	125.0	0	94.1	41	121				
Thallium	110	1.0	125.0	1.372	85.1	54	100				
Vanadium	130	1.0	125.0	22.27	89.9	59	109				
Zinc	140	1.0	125.0	39.53	77.9	27	131				

Sample ID: **083891-001ADUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **NAPA 128-HM1** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	3100	50						2560	20.4	20	R

Sample ID: **083891-001AMS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62630**
Client ID: **NAPA 128-HM1** Batch ID: **27737** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **4/25/2006** SeqNo: **926635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	2800	50	125.0	2560	228	50	112				S

Qualifiers:
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interferenc
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

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

CLIENT: Geocon Consultants, Inc.
Work Order: 083891
Project: Napa 128 Culvert Replacement, E8220-06-47

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **083891-001A-DUP** SampType: **DUP** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62627**
Client ID: **NAPA 128-HM1** Batch ID: **27738** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **4/25/2006** SeqNo: **926566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10						0	0	20	

Sample ID: **083891-001A-MS** SampType: **MS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62627**
Client ID: **NAPA 128-HM1** Batch ID: **27738** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **4/25/2006** SeqNo: **926567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.97	0.10	0.8300	0	116	52	163				

Sample ID: **LCS-27738** SampType: **LCS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62627**
Client ID: **LCSS** Batch ID: **27738** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **4/25/2006** SeqNo: **926574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.3	0.10	2.080	0	109	80	120				

Sample ID: **MB-27738** SampType: **MBLK** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **4/25/2006** RunNo: **62627**
Client ID: **PBS** Batch ID: **27738** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **4/25/2006** SeqNo: **926575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Qualifiers:
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interferenc
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: BN Date: 041906

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: 650

Sample Condition Upon Receipt
1. CHILLED Y ☑ N ☐ 15.60 C
2. HEADSPACE (VOA) Y ☐ N ☐
3. CONTAINER INTACT Y ☑ N ☐
4. SEALED Y ☐ N ☑
5. # OF SPLS MATCH COC Y ☑ N ☐
6. PRESERVED Y ☐ N ☑

Client: GEOCON Consultants, Inc
Attention: David Bieber
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Napa 128 Culvert Replacement
Project #: E8220-06-47
Sampler: (Printed Name) David Bieber (Signature)

Relinquished by: (Signature and Printed Name) David Bieber Date: 4/18/06 Time: 1445
Received by: (Signature and Printed Name) Date: 041906 Time: 0910
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: David Bieber 4/18/06
Print Name Date
Signature

Send Report To: Attn: David Bieber Co: A.A. Addr: City: State: Zip:

Bill To: Attn: David Bieber Co: A.A. Addr: City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.
Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested — SPECIFY APPROPRIATE MATRIX

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	083891-001	NAPA 128- HM1	4/18/06	0820					X					X				E	1	B	–	
	-002	NAPA 128- HM2	4/18/06	0830					X					X				E	1	B	–	
	-003	NAPA 128- HM3	4/18/06	0850					X					X				E	1	B	–	
	-004	NAPA 128- HM4	4/18/06	0900					X					X				E	1	B	–	
	-005	NAPA 128- HM5	4/18/06	0915					X					X				E	1	B	–	

- TAT starts 8AM the following day if samples received after 3 PM

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

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

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$