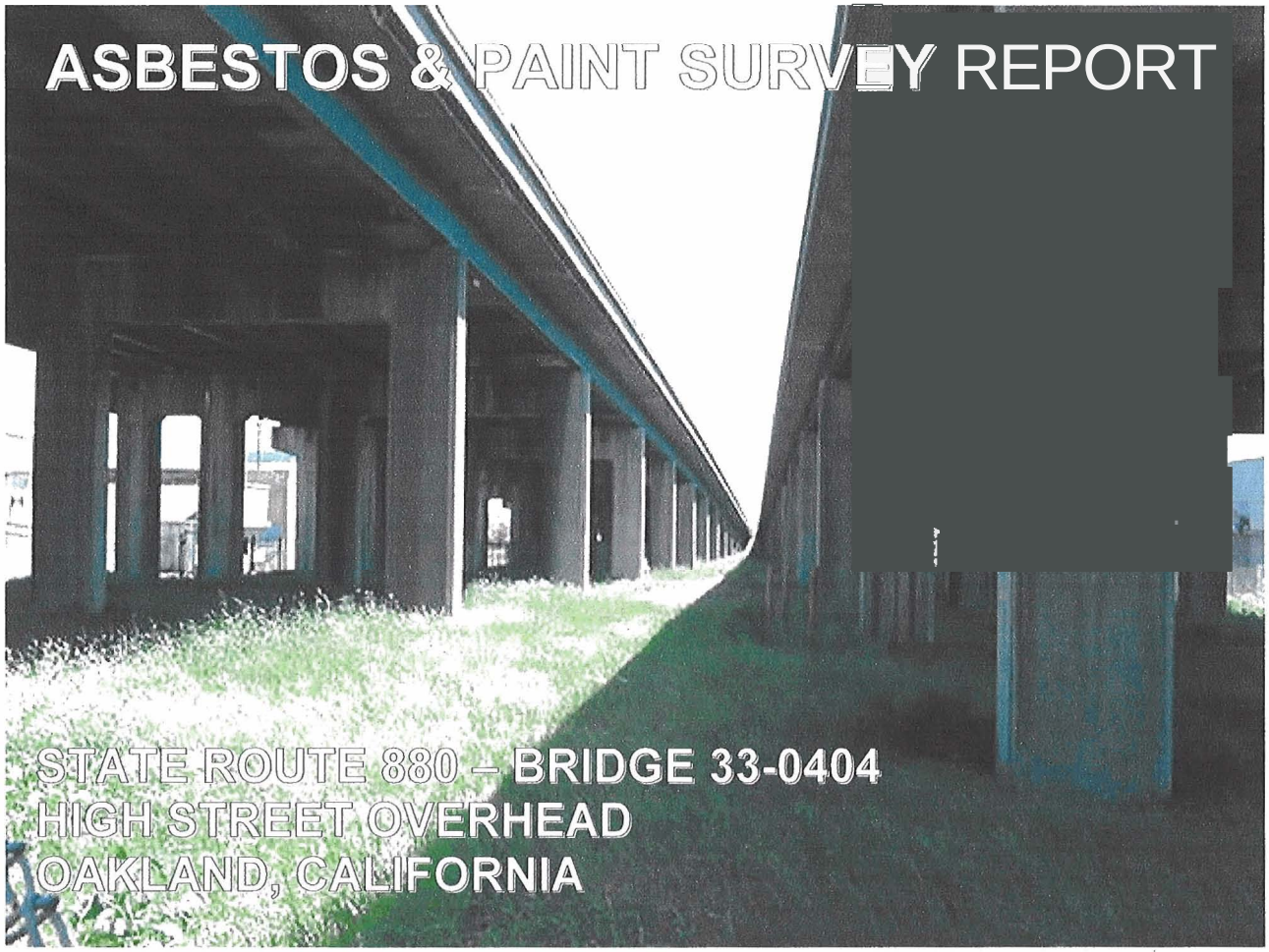
ASBESTOS & PAINT SURVEY REPORT



PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE
OAKLAND, CALIFORNIA

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CALTRANS CONTRACT 04A1862
TASK ORDER NO. 26
EA NO. 04-165421

GEOCON PROJECT NO. E8220-06-26

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REPORT LIMITATIONS

This asbestos and lead paint survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos and lead paint in structures. Due to the nature of structure surveys, asbestos and lead paint use, and laboratory analytical limitations, some asbestos and/or lead paint in the structures may not have been identified. Structure spaces, such as cavities, crawlspaces, and pipe chases, may have been concealed to Geocon's investigator. Previous structure renovation work may have concealed or covered spaces or materials, or may have partially demolished materials and left debris in inaccessible areas. Additionally, renovation activities may have partially replaced asbestos with indistinguishable non-asbestos. Asbestos and/or lead paint may exist in areas of the structures not accessible or sampled in conjunction with this TO.

During renovation or demolition operations, suspect materials may be uncovered which are different from those accessible for sampling during this assessment. Personnel in charge of renovation/demolition should be alerted to note materials uncovered during such activities that differ substantially from those included in this or previous assessment reports. If suspect materials are found, additional sampling and analysis should be performed to determine if the materials contain asbestos and/or lead paint.

This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 4. 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.

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.

GEOCON CONSULTANTS, INC

David Watts, CAC
Project Scientist

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Regional Manager

CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING

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EXECUTIVE SUMMARY

This Asbestos and Paint Survey Report was prepared for the High Street Overhead Replacement Project. The Site consists of the High Street Overhead (Bridge 33-0404) between kilometer posts (KP) 43.5 and 45.5 on State Route (SR) 880 in Oakland, Alameda County, California. It is understood that Caltrans proposes replacement of the bridge. The Site location is depicted on the Vicinity Map, Figure 1.

This report documents the investigation sampling methods and laboratory analytical data. The primary objective of the survey was to determine and quantify asbestos and lead-containing paint (LCP) on the subject bridge. The information obtained from this investigation will be used by Caltrans for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos and LCP disturbance activities.

The field investigation was performed on May 26, 2005. The following field activities were performed during asbestos and LCP sampling efforts.

- Collected nine bulk asbestos samples from the subject bridge;
- Collected two bulk paint samples from the subject bridge; and
- Transported samples to California-certified environmental laboratories.

Bulk asbestos samples were collected after first wetting the material with a light mist of water. The samples were then cut from the substrate and transferred to labeled containers and sealed. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed). Geocon asbestos sample identification numbers, material descriptions, approximate quantities, friability assessments, conditions, and photo references are summarized on Table 1. Approximate sample locations are presented on the Site Plan, Figure 2. Photos of the materials sampled are presented in Appendix A.

Geocon relinquished bulk asbestos samples for asbestos analysis using standard chain-of-custody documentation. Asbestos content was determined using EPA Test Method 600/R-93/116 for polarized light microscopy (PLM). Laboratory analyses were performed within a standard turn-around-time.

Bulk paint samples were collected using techniques presented in U.S. Department of Housing and Urban Development (HUD) guidelines. In addition, each painted area was evaluated for evidence of deterioration such as flaking or cracking.

> *It was <u>not</u> Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with HUD guidelines. HUD protocol generally requires a very extensive sampling strategy that includes sampling of paint on each surface type.*

Geocon paint sample identification numbers, paint descriptions, approximate peeling/flaking quantities, and photo references are summarized on Table 2. Approximate sample locations are presented on the Site Plan, Figure 2. Photos of the materials sampled are presented in Appendix A.

Geocon relinquished bulk paint samples for lead analysis using standard chain-of-custody documentation. Total lead content was determined using EPA Test Method 6010B. Laboratory analyses were performed within a standard turn-around-time.

The laboratory analyses indicated the following:

- Asbestos was not detected in samples of expansion joint materials collected during the bridge survey.
- Chrysotile asbestos at a concentration of 3% was detected in nonfriable thread compound used on the bridge barrier rail posts. Geocon was not able to quantify the thread compound due to safety concerns (i.e., traffic).
- Chrysotile asbestos at a concentration of 60% was detected in nonfriable asbestos sheet packing used as bridge barrier rail shims. Geocon was not able to quantify the barrier rail shims due to safety concerns (i.e., traffic).
- Bulk samples of green paint collected from steel bridge girders exhibited total lead concentrations of 71,000 mg/kg and 150,000 mg/kg. The paint was observed to be intact.

Geocon asbestos sample laboratory results are summarized on Table 1. Geocon paint sample laboratory results are summarized on Table 2. Reproductions of the asbestos and lead laboratory reports and chain-of-custody documentation are presented in Appendix B.

The following conclusions and recommendations are based on the site investigation results.

National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations do not require that thread compound (a Category II nonfriable material) and barrier rail shims (a Category I nonfriable material) be removed prior to demolition or treated as hazardous waste. However, the disturbance of these materials is still covered by the Cal/OSHA asbestos standard (Title 8, CCR Section 1529). Geocon recommends that a licensed demolition contractor registered with Cal/OSHA for asbestos-related work (or a licensed and certified asbestos abatement contractor) perform demolition activities if the asbestos-containing materials identified during this survey are left in place during demolition. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos-containing waste. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

Geocon also recommends the notification of other contractors (that will be conducting renovation, demolition, or related activities) of the presence of asbestos (i.e., provide the contractor[s] with a copy of this report and a list of asbestos removed by asbestos abatement contractor[s] during

subsequent abatement activities). These contractors should be instructed not to disturb asbestos during their work.

Geocon recommends that paint applied to the bridge girders be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on LCP sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some industrial paints.

Construction activities (including demolition) that disturb materials containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR Section 1532.1. Geocon recommends the use of personnel who have lead-related construction certification as supervisors or workers, as appropriate, from the California DHS for personnel performing "trigger tasks" as defined in Title 8 CCR Section 1532.1(d). Common trigger tasks include, but are not limited to, manual scraping or sanding, heat gun applications, power tool cleaning, spray painting with lead paint, abrasive blasting, welding, cutting, grinding, and torch burning. Contractors should consult the Cal/OSHA lead standard for additional guidance. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work.

Paint that has become separated from the substrate requires segregation for waste disposal purposes: to separate potentially hazardous waste (Category III concentrated lead such as loose paint, paint sludge, vacuum debris, and vacuum filters) from non-hazardous demolition debris (Category II intact lead-painted architectural components such as doors, windows, framework, cladding, and trim). Category I waste is low lead waste (typically non-hazardous) such as construction materials, filtered wash water, and plastic sheeting. Contractors are responsible for informing the landfill of the contractor's intent to dispose of RCRA waste, California hazardous waste, and/or intact architectural components containing LCP. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

ASBESTOS AND PAINT SURVEY REPORT

1.0 INTRODUCTION

This Asbestos and Paint Survey Report was prepared for the High Street Overhead Replacement Project. This report documents the investigation sampling methods laboratory analytical data.

1.1 Site Description and Proposed Improvements

The Site consists of the High Street Overhead (Bridge 33-0404) between kilometer posts (KP) 43.5 and 45.5 on State Route (SR) 880 in Oakland, Alameda County, California. It is understood that Caltrans proposes replacement of the bridge. The Site location is depicted on the Vicinity Map, Figure 1.

1.2 Purpose

The primary objective of the survey was to determine and quantify asbestos and lead-containing paint (LCP) on the subject bridge. The information obtained from this investigation will be used by Caltrans for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos and LCP disturbance activities.

2.0 BACKGROUND

2.1 Asbestos

The *Code of Federal Regulations (CFR),* 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Federal Occupational Safety and Health Administration (FED OSHA) classify asbestos-containing material (ACM) as any material or product that contains *greater than* 1% asbestos. Nonfriable ACM is classified by NESHAP as either Category I or Category II material defined as follows:

- **Category I** – asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products.
- **Category II** – all remaining types of non-friable asbestos-containing material not included in Category I that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated asbestos-containing material (RACM), a hazardous waste, is classified as any manufactured material that contains *greater than* 1% asbestos by dry weight *and* is:

- Friable; or
- Category I material that has become friable; or
- Category I material that has been subjected to sanding grinding, cutting or abrading; or
- Category II non-friable material that has a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing *any* amount of asbestos are subject to certain requirements of the Cal/OSHA asbestos standard contained in Title 8, CCR Section 1529. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of a material exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAP regulations (40 CFR Part 61, Subpart M). RACM (friable ACM and nonfriable ACM that will become friable during demolition operations) must be removed from structures prior to demolition. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in structures during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that may make it cost ineffective to do so. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (Title 8, CCR 341.6).

2.2 Lead Paint

Construction activities (including demolition) that disturb materials or paints containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, §35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from a component. Demolition of a deteriorated LCP component would require waste characterization and appropriate disposal. Intact LCP on a component is currently accepted by most landfill facilities; however, contractors are responsible for segregating and characterizing waste streams prior to disposal.

For a solid waste containing lead, the waste is classified as California hazardous when: 1) the total lead content exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the soluble lead content exceeds the respective Soluble Threshold Limit Concentration (STLC) of 5 milligrams per liter (mg/l) based on the standard Waste Extraction Test (WET). A waste has the potential for exceeding the lead STLC when the waste's total lead content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when total lead is detected at a concentration greater than or equal to 50 mg/kg, and assuming that 100 percent of the total lead is soluble, soluble lead analysis is required. Lead-containing waste is classified as "Resource, Conservation, and Recovery Act" (RCRA) hazardous, or Federal hazardous, when the soluble lead content exceeds the Federal regulatory level of 5 mg/l based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste. Per Section 25157.8 of the California Health and Safety Code (HSC), on or after January 1, 1999, no person shall dispose waste that contains total lead in excess of 350 mg/kg to land other than a Class I hazardous waste disposal facility.

Potential hazards exist to workers who remove or cut through LCP coatings during demolition. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with lead-containing paint. Torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with LCP. Guidelines regarding regulatory provisions for construction work where workers may be exposed to lead are presented in the Title 8, CCR, Section 1532.1.

3.0 SCOPE OF SERVICES

The following scope of services was performed:

3.1 Pre-Field Activities

- Prepared a Health and Safety Plan, dated May 25, 2005, to provide guidelines on personal safety during the field activities.
- Prepared a Workplan, dated May 26, 2005, to summarize the scope of services to be performed by Geocon.
- Retained the services of EMSL, a Caltrans-approved laboratory, to perform the asbestos analyses.
- Retained the services of ATL, a Caltrans-approved laboratory, to perform the lead paint analyses.

Architectural drawings or previous survey reports of the subject bridge were not available for review by Geocon.

3.2 Field Activities

Mr. David Watts, a California-Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2005), and Certified Lead Paint Inspector/Assessor and Project Monitor with the California Department of Health Services (DHS), certification numbers I-1734 and M-1734 (expiration December 4, 2005) performed the asbestos and LCP survey of the Site on May 26, 2005. A total of nine bulk samples of suspect ACM were collected. A total of two bulk samples of suspect LCP were collected.

4.0 INVESTIGATIVE METHODS

4.1 Asbestos

Bulk asbestos samples were collected after first wetting the material with a light mist of water. The samples were then cut from the substrate and transferred to labeled containers and sealed. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed). Geocon asbestos sample identification numbers, material descriptions, approximate quantities, friability assessments, conditions, and photo references are summarized on Table 1. Approximate sample locations are presented on the Site Plan, Figure 2. Photos of the materials sampled are presented in Appendix A.

Geocon relinquished bulk asbestos samples for asbestos analysis using standard chain-of-custody documentation. Asbestos content was determined using EPA Test Method 600/R-93/116 for polarized light microscopy (PLM). Laboratory analyses were performed within a standard turn-around-time.

4.2 Lead Paint

Bulk paint samples were collected using techniques presented in U.S. Department of Housing and Urban Development (HUD) guidelines. In addition, each painted area was evaluated for evidence of deterioration such as flaking or cracking.

> *It was <u>not</u> Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with HUD guidelines. HUD protocol generally requires a very extensive sampling strategy that includes sampling of paint on each surface type.*

Geocon paint sample identification numbers, paint descriptions, approximate peeling/flaking quantities, and photo references are summarized on Table 2. Approximate sample locations are presented on the Site Plan, Figure 2. Photos of the materials sampled are presented in Appendix A.

Geocon relinquished bulk paint samples for lead analysis using standard chain-of-custody documentation. Total lead content was determined using EPA Test Method 6010B. Laboratory analyses were performed within a standard turn-around-time.

5.0 INVESTIGATIVE RESULTS

5.1 Asbestos

The laboratory analyses indicated the following:

- Asbestos was not detected in samples of expansion joint materials collected during the bridge survey.
- Chrysotile asbestos at a concentration of 3% was detected in nonfriable thread compound used on the bridge barrier rail posts. Geocon was not able to quantify the thread compound due to safety concerns (i.e., traffic).
- Chrysotile asbestos at a concentration of 60% was detected in nonfriable asbestos sheet packing used as bridge barrier rail shims. Geocon was not able to quantify the barrier rail shims due to safety concerns (i.e., traffic).

Geocon asbestos sample laboratory results are summarized on Table 1. Reproductions of the asbestos laboratory report and chain-of-custody documentation are presented in Appendix B.

5.2 Lead Paint

The laboratory analyses indicated that bulk samples of green paint collected from steel bridge girders exhibited total lead concentrations of 71,000 mg/kg and 150,000 mg/kg. The paint was observed to be intact. Geocon paint sample laboratory results are summarized on Table 2. Reproductions of the lead laboratory report and chain-of-custody documentation are presented in Appendix B.

6.0 CONCLUSIONS

6.1 Asbestos

NESHAP regulations do not require that thread compound (a Category II nonfriable material) and barrier rail shims (a Category I nonfriable material) be removed prior to demolition or treated as hazardous waste. However, the disturbance of these materials is still covered by the Cal/OSHA asbestos standard (Title 8, CCR Section 1529). Geocon recommends that a licensed demolition contractor registered with Cal/OSHA for asbestos-related work (or a licensed and certified asbestos abatement contractor) perform demolition activities if the asbestos-containing materials identified during this survey are left in place during demolition. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos-containing waste. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

Geocon also recommends the notification of other contractors (that will be conducting renovation, demolition, or related activities) of the presence of asbestos (i.e., provide the contractor[s] with a copy of this report and a list of asbestos removed by asbestos abatement contractor[s] during subsequent abatement activities). These contractors should be instructed not to disturb asbestos during their work.

6.2 Lead Paint

Geocon recommends that paint applied to the bridge girders be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on LCP sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some industrial paints.

Construction activities (including demolition) that disturb materials containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR Section 1532.1. Geocon recommends the use of personnel who have lead-related construction certification as supervisors or workers, as appropriate, from the California DHS for personnel performing "trigger tasks" as defined in Title 8 CCR Section 1532.1(d). Common trigger tasks include, but are not limited to, manual scraping or sanding, heat gun applications, power tool cleaning, spray painting with lead paint, abrasive blasting, welding, cutting, grinding, and torch burning. Contractors should consult the Cal/OSHA lead standard for additional guidance. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work.

Paint that has become separated from the substrate requires segregation for waste disposal purposes: to separate potentially hazardous waste (Category III concentrated lead such as loose paint, paint sludge, vacuum debris, and vacuum filters) from non-hazardous demolition debris (Category II intact lead-painted architectural components such as doors, windows, framework, cladding, and trim). Category I waste is low lead waste (typically non-hazardous) such as construction materials, filtered wash water, and plastic sheeting. Contractors are responsible for informing the landfill of the contractor's intent to dispose of RCRA waste, California hazardous waste, and/or intact architectural components containing LCP. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

TABLE 1
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - ASBESTOS
HIGH STREET OVERHEAD (BRIDGE 33-0404)

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Sample No.	Description of Material	Approximate Quantity	Friable	Condition	Site Photo	Asbestos Concentration
0404-1A	Expansion joint material	NA	NA	NA	3 & 6	ND
0404-1B						ND
0404-1C						ND
0404-2A	Thread compound	unable to safely quantify	No	Good	4 & 7	**3% chrysotile**
0404-2B						**3% chrysotile**
0404-2C						**3% chrysotile**
0404-3A	Barrier rail shims	unable to safely quantify	No	Good	7	**60% chrysotile**
0404-3B						**60% chrysotile**
0404-3C						**60% chrysotile**

Notes:

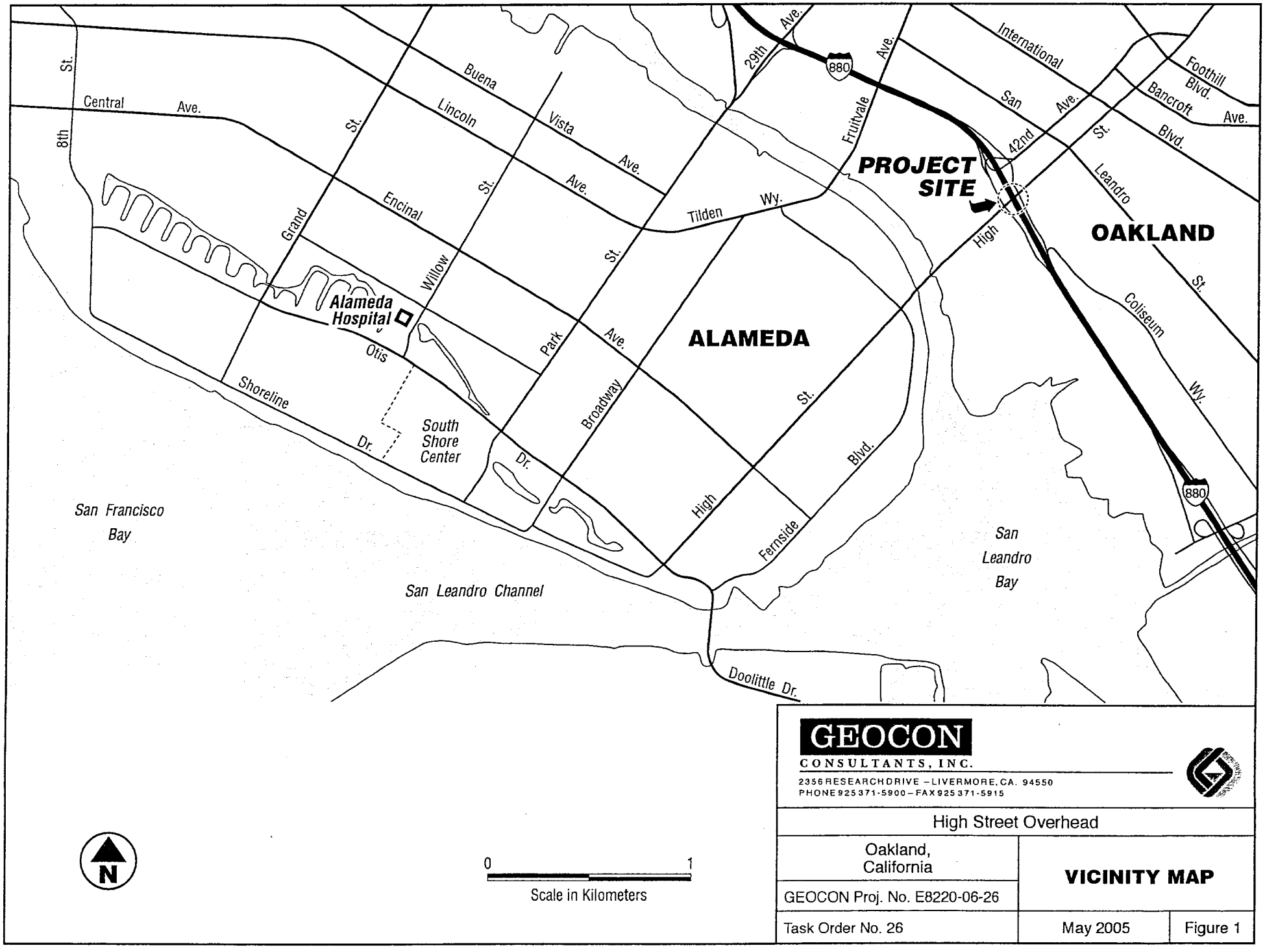
NA = Not applicable (no asbestos detected)

ND = Not detected

TABLE 2
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - PAINT
HIGH STREET OVERHEAD (BRIDGE 33-0404)

Sample No.	Paint Description	Approximate Quantity Peeling/Flaking	Site Photo	Total Lead (mg/kg)
0404-P1	Green paint (girders)	Intact	5, 6, 8, & 9	71,000
0404-P2				150,000

Notes:
mg/kg = milligrams per kilogram (EPA 6010)



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High Street Overhead

Oakland, California

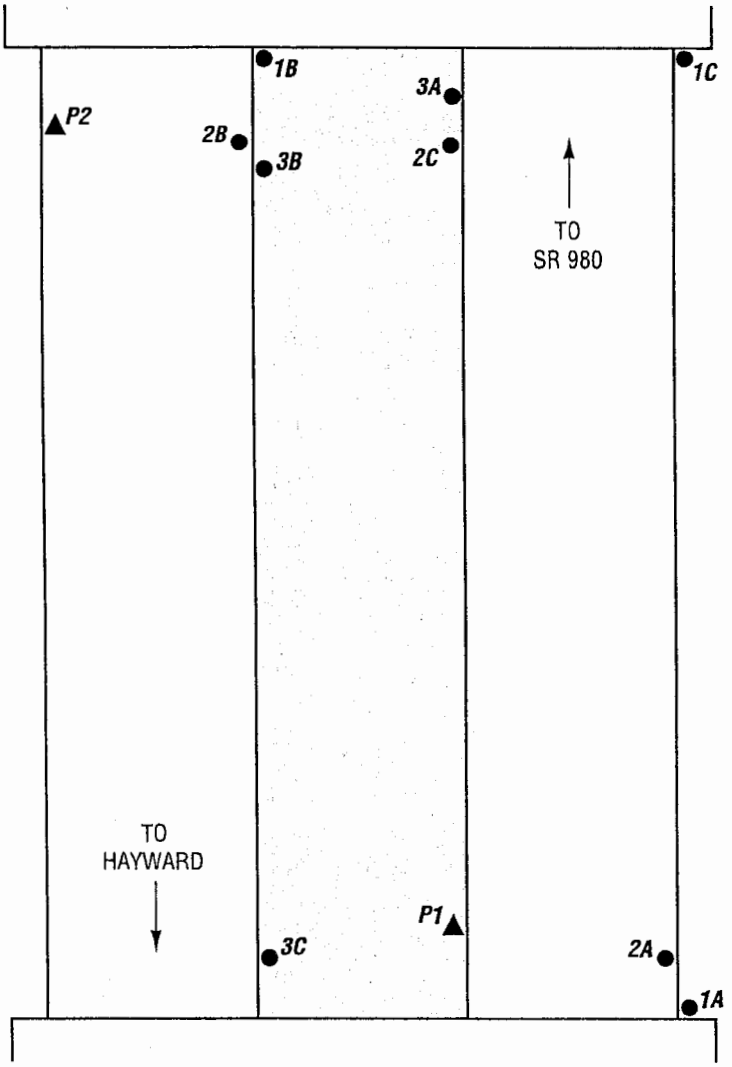
VICINITY MAP

GEOCON Proj. No. E8220-06-26

Task Order No. 26

May 2005

Figure 1



NO SCALE

LEGEND:

- ● Approximate Asbestos Sample Location
- ▲ Approximate Paint Sample Location

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High Street Overhead (Bridge 33-0404)		
Oakland, California	**SITE PLAN**	
GEOCON Proj. No. E8220-06-26		
Task Order No. 26	June 2005	Figure 2

APPENDIX A

Photo 1 – High Street Overhead (Bridge 33-0404)

Photo 2 – Deck joint seal (non-suspect)

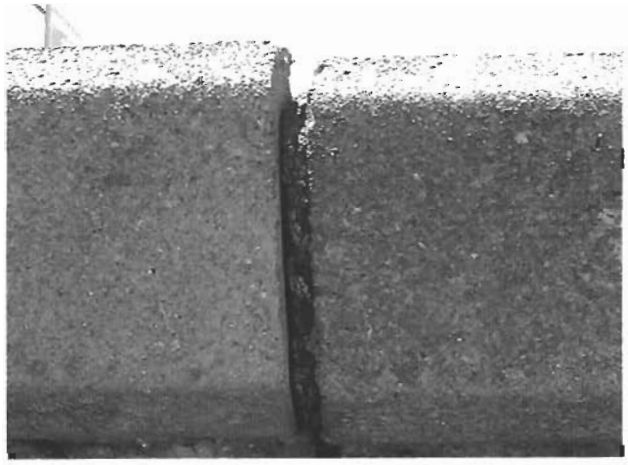

Photo 3 – Span expansion joint

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SITE PHOTOS 1, 2, & 3		
High Street Overhead (Bridge 33-0404) Oakland, California		
E8220-06-26	Task Order No. 26	June 2005

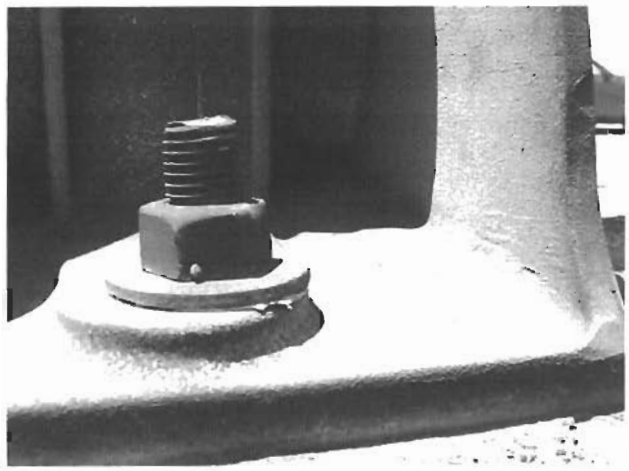

Photo 4 – Thread compound on barrier rail posts

Photo 5 – Girders

Photo 6 – Abutment expansion joint

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SITE PHOTOS 4, 5, & 6		
High Street Overhead (Bridge 33-0404) Oakland, California		
E8220-06-26	Task Order No. 26	June 2005

Photo 7 – Thread compound and barrier rail shims

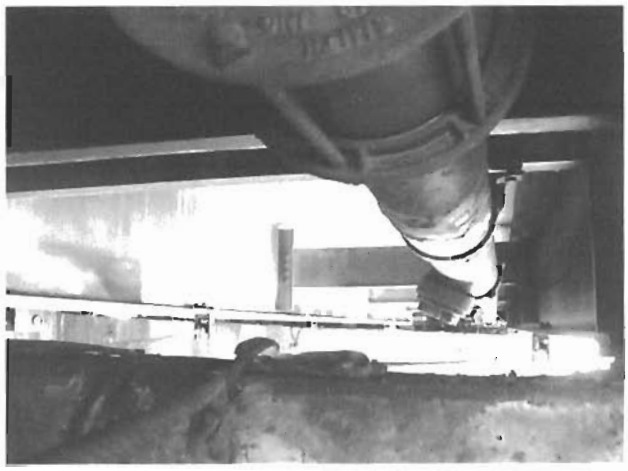

Photo 8 – Girders and piping

Photo 9 – North abutment

APPENDIX B

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Customer ID: GECN21
Customer PO: E8220-06-26
Received: 05/27/05 1:52 PM
EMSL Order: 090501614

EMSL Proj: GEC9-58
Analysis Date: 6/6/2005
Report Date: 6/8/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Location**	**Appearance**	**%**	**Fibrous**	**% Non-Fibrous**	**% Type**
1A, Expansion joint material *090501614-0001*	Bridge 0404	Black Fibrous Heterogeneous	80%	Cellulose	20% Non-fibrous (other)	**None Detected**
1B, Expansion joint material *090501614-0002*	Bridge 0404	Black Fibrous Homogeneous	80%	Cellulose	20% Non-fibrous (other)	**None Detected**
1C, Expansion joint material *090501614-0003*	Bridge 0404	Black Fibrous Homogeneous	80%	Cellulose	20% Non-fibrous (other)	**None Detected**
2A, Thread compound *090501614-0004*	Bridge 0404	Gray Non-Fibrous Homogeneous			97% Non-fibrous (other)	**3% Chrysotile**
2B, Thread compound *090501614-0005*	Bridge 0404	Gray Non-Fibrous Homogeneous			97% Non-fibrous (other)	**3% Chrysotile**
2C, Thread compound *090501614-0006*	Bridge 0404	Gray Non-Fibrous Homogeneous			97% Non-fibrous (other)	**3% Chrysotile**
3A, Barrier rail shims *090501614-0007*	Bridge 0404	Gray Fibrous Homogeneous			40% Non-fibrous (other)	**60% Chrysotile**

Analyst(s)

Jeremy Malson (9)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.

Analysis performed by EMSL Milpitas (NVLAP #101048-3)

EMSL Analytical, Inc
382 South Abbott Avenue, Milpitas, CA 95035
Phone: (408) 934-7010 Fax: (408) 934-7015 Email: milpitaslab@emsl.com

Attn: **David Watts**
Geocon
2356 Research Drive
Livermore, CA 94550

Fax: (925) 371-5915 Phone: (925) 371-5900
Project: **E8220-06-26 / Bridge 33-0404, Oakland, CA**

Customer ID: GECN21
Customer PO: E8220-06-26
Received: 05/27/05 1:52 PM
EMSL Order: 090501614

EMSL Proj: GEC9-58
Analysis Date: 6/6/2005
Report Date: 6/8/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
3B, Barrier rail shims *090501614-0008*	Bridge 0404	Gray Fibrous Homogeneous		40% Non-fibrous (other)	**60% Chrysotile**
3C, Barrier rail shims *090501614-0009*	Bridge 0404	Gray Fibrous Homogeneous		40% Non-fibrous (other)	**60% Chrysotile**

Analyst(s)

Jeremy Malson (9)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.
Analysis performed by EMSL Milpitas (NVLAP #101048-3)

0 0 0 1 0 1 4

Chain of Custody Form

Project No.: E8220-06-26 Client Name: GEOCON Analyze sample sets until positive: ☐ Yes ☑ No

Report Results to: D. WATTS Office Location: LIVERMORE, CA Analytical Fee (per sample): $PLM Date(s) Inspected: 5/26/2005

Consultants Ph. #: (925) 371-5900 Consultants Fax #: (925) 371-5915 Other Comments: 7-WORKDAY TAT

Site Name: BRIDGE 33-0404 Building No. ——— Site Address: OAKLAND, CA

Material Code	Sample Number: Site No.	Sample Number: Bldg. No.	Sample Number: Material Link No.	Samples Collected: A	B	C	D	E	F	G	H	I	J	K	Not Sampled	Material Description
		0404	1	X	X	X										EXPANSION JOINT MATERIAL
		0404	2	X	X	X										THREAD COMPOUND
		0404	3	X	X	X										BARRIER RAIL SHIMS

Relinquished by: Print Name: D. WATTS Signature: D WATTS Date/Time: 5/27/2005 1350 Received by: Print Name: D Wells Signature: D Wells Date/Time: 5/27/05 1350

Relinquished by: Print Name: Signature: Date/Time: Received by: Print Name: Signature: Date/Time:

Flooring
- CFT = Ceramic floor tile grout/mastic (M)
- F = Floor material-Generic(M)
- FMAS = Floor mastic(M)
- FT = Vinyl composite tile floor (M)
- FS = Vinyl composite sheet floor (M)
- FLC = Floor leveling compound (M)
- TERR = Terrazzo flooring (M)

Wall/Ceiling/Other
- ACOU = Textured acoustical (sprayed) (S)
- BBM = Baseboard mastic (M)
- CM = Ceiling (unspecified type) (M)
- CS = Ceiling (unspecified type) (S)
- CP = Ceiling panel - Lay-in (M)
- CMAS = Ceiling mastic (M)
- CT = Ceiling tile - Splined or nailed (M)
- CTG = Ceiling tile - Glued (M)
- CWT = Ceramic wall tile grout & mastic(M)
- DEBM = Debris (unspecified) (M)
- DEBS = Debris (unspecified) (S)
- DEBT = Debris (unspecified) (TSI)
- DOOR = Door core insulation - Fire door (M)
- OFM = Other friable material (M)
- OFS = Other friable material (S)
- ONFM = Other nonfriable material (M)
- ONFS = Other nonfriable materials (S)
- PL = Plaster (wall or ceiling) (S)
- SHR = Sheetrock (no joint compound) (M)
- SHRJC = Sheetrock with joint compound (M)
- STUC = Stucco (S)
- FP = Structural fireproofing (S)
- TRAN = Transite panel (M)
- TX = Surface texturing on walls/ceiling (S)
- WM = Wall (unspecified type) (M)
- WS = Wall (unspecified type) (S)
- WT = Wall tile - Splined or nailed (M)
- WTG = Wall tile - Glued on (M)

Piping/TSI
- FI = Fitting insulation (type not specified) (TSI)
- FICHW = Fitting - Chilled water system (TSI)
- FICON = Fitting - Condensate (TSI)
- FIDCW = Fitting - Domestic cold water (TSI)
- FIDHW = Fitting - Domestic hot water (TSI)
- FIHHW = Fitting - Heating hot water (TSI)
- FISTM = Fitting - Steam (TSI)
- DI = Duct insulation (TSI)
- DTAPE = HVAC - Duct joint tape/compound (M)
- DFLEX = HVAC - Flexible duct/flex duct joint (M)
- DFLUE = Mech. equipment - Flue insulation (TSI)
- MGSKT = Mech. equipment-Gasket (M)
- MTANK = Mech. equipment-Tank insulation (TSI)
- PI = Pipe insulation (type not specified) (TSI)
- PICHW = Pipe insulation-Chilled water system (TSI)
- PICON = Pipe insulation-Condensate (TSI)
- PIDCW = Pipe insulation-Domestic cold water (TSI)
- PIDHW = Pipe insulation-Domestic hot water (TSI)
- PIHHW = Pipe insulation-Heating hot water (TSI)
- PISTM = Pipe insulation-Steam (TSI)
- PTRAN = Pipe-Transite (M)

Roofing
- RF = Roofing material (M)
- RFAG = Asphalt and gravel (M)
- RFAT = Asphalt roof tile (M)
- RFFLS = Flashing (M)
- RFFLT = Felt material (M)
- RFMAS = Penetration mastic (M)
- RFROL = Rolled sheet type (M)
- RTRAN = Transite shingle (M)

(M) = Miscellaneous material
(S) = Surfacing material
(TSI) = Thermal System Insulation

9

June 10, 2005

RECEIVED
JUN 20 2005
By

ACCREDITED IN ACCORDANCE WITH ilac

Dave Watts
Geocon Consultants, Inc.
2356 Research Drive
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196

Workorder No.: 076823

RE: BRIDGE 33-0404, E8220-06-26

Attention: Dave Watts

Enclosed are the results for sample(s) received on June 01, 2005 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

CLIENT: Geocon Consultants, Inc. **Lab Order:** 076823
Project: BRIDGE 33-0404, E8220-06-26

Lab ID: 076823-001 **Collection Date:** 5/26/2005 1:10:00 PM
Client Sample ID: 0404-P1 **Matrix:** PAINT

Analyte	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	(EPA 3050B)			**EPA 6010B**		
RunID: ICP6_050608B	QC Batch: 23015			PrepDate: 6/7/2005		Analyst: **NS**
Lead	71000	100		mg/Kg	100	6/8/2005

Lab ID: 076823-002 **Collection Date:** 5/26/2005 1:51:00 PM
Client Sample ID: 0404-P2 **Matrix:** PAINT

Analyte	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	(EPA 3050B)			**EPA 6010B**		
RunID: ICP6_050608B	QC Batch: 23015			PrepDate: 6/7/2005		Analyst: **NS**
Lead	150000	200		mg/Kg	100	6/8/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H-Sample exceding holding time

Results are wet unless othewise specified

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: *10-Jun-05*

CLIENT: Geocon Consultants, Inc.
Work Order: 076823
Project: BRIDGE 33-0404, E8220-06-26

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-23015**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/7/2005**	Run ID: **ICP6_050608B**
Client ID: **ZZZZZ**	Batch ID: **23015**	TestNo: **EPA 6010B**	**(EPA 3050B)**	Analysis Date: **6/8/2005**	SeqNo: **745627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0	0	0	0	0	0	0	0		

Sample ID: **LCS-23015**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/7/2005**	Run ID: **ICP6_050608B**
Client ID: **ZZZZZ**	Batch ID: **23015**	TestNo: **EPA 6010B**	**(EPA 3050B)**	Analysis Date: **6/8/2005**	SeqNo: **745628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	54.09	1.0	50	0	108	80	120	0	0		

Sample ID: **076885-013AMS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/7/2005**	Run ID: **ICP6_050608B**
Client ID: **ZZZZZ**	Batch ID: **23015**	TestNo: **EPA 6010B**	**(EPA 3050B)**	Analysis Date: **6/8/2005**	SeqNo: **745754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	197.3	1.0	125	91.07	85	47	125	0	0		

Sample ID: **076885-013AMSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/7/2005**	Run ID: **ICP6_050608B**
Client ID: **ZZZZZ**	Batch ID: **23015**	TestNo: **EPA 6010B**	**(EPA 3050B)**	Analysis Date: **6/8/2005**	SeqNo: **745755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	139.6	1.0	125	91.07	38.9	47	125	197.3	34.3	20	SR

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
Calculations are based on raw values
DO- Surrogate dilute out
H - Sample exceeded holding time

Page 1 of 1

CHAIN OF CUSTODY RECORD

Pg 1 of 1

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

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: MH Date: 6/1/05

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: CAR

Sample Condition Upon Receipt
1. CHILLED 11.2 Y☑ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N/A☐ 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☐ N☑

Client: GEOCON
Attn: D. WATTS
Address: 2356 RESEARCH DR
City LIVERMORE State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: BRIDGE 33-0404 Project #: E8220-06-26 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name) D. WATTS Date: 5/26/05 Time: 1645 Received by: (Signature and Printed Name) M. HAKO Date: 5/26/05 Time: 1645

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: 6/1/05 Time: 0841

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:
D. WATTS 5/24/05
Print Name Date
Signature

Send Report To:
Attn:
Co: SEE "CLIENT"
Address
City State Zip

Bill To:
Attn:
Co:
Address
City State Zip

Special Instructions/Comments:
TOTAL Pb (PRINT - 6010)

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 : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal) (Pb), 8015B (GRO) / BTEX, 8015B (DRO), PRINT (Pb-6010)

SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER

PRESERVATION

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

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	REMARKS
	076823-01	0404-P1	5/24/05	1310	E	1	Bg P	
	02	" P2	↓	1351	E	1	Bg P	

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr 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=$Na_2S_2O_3$