

# **INFORMATION HANDOUT**

**For Contract No. 04-1SS524**

**At 04-SCI-280-R2.6**

**Identified by**

**Project ID 0412000543**

04-1SS524  
04-SCI-280-R2.6  
Project ID 0412000543

## **MATERIALS INFORMATION**

Geotechnical Design Report for Embankment Settlement & Pavement Cracks Memorandum, dated November 27, 2013

Preliminary Site Investigation Report, Southbound I-280 to Southbound SR-87 Connector Ramp, San Jose, CA, dated July 2014

# Memorandum

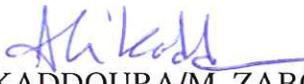
*Flex your power!  
Be energy efficient!*

To: MR. TUNG LY  
District Office Chief  
Design Santa Clara

Date: November 27, 2013

Attention: H. Nikzad  
Z. Mangat

File: 04-SCL-280 PM 2.6  
Project ID: 12000543-0  
04-1SS521  
Storm Damage Repair

From:   
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Associate Materials & Research Engineers  
Office of Geotechnical Design – West  
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Division of Engineering Services

Subject: GEOTECHNICAL DESIGN REPORT (GDR) FOR EMBANKMENT SETTLEMENT & PAVEMENT CRACKS

## 1. INTRODUCTION

This is in response to your request dated August 22, 2013 requesting for our recommendation for the pavement cracking and settlement on the connector ramp between southbound Route 280 (PM 2.6) and southbound Route 87 (PM 5.1) in the City of San Jose in Santa Clara County. This memorandum provides our foundation recommendation for the above referenced project

The problem area is about 630 ft long within the width of the connector lane and shoulders (about 27 ft wide). There is a longitudinal crack about one foot away from the existing AC dike that runs along the existing MBGR for the entire length of the problem area. The crack is about 2 inches wide and 1 ft deep. The side slope of the hillside embankment is about 2:1.

### 1.1 Background/As-Built Plans

The existing connector ramp is constructed with about 25 ft -30 ft high embankment over the original ground with side slope of about 2:1. We were unable to find the date at which this fill was placed. However, based on As-Built Plans (Contract # 04-208401), 2.1 ft thick structural section was constructed in 1969. The connector ramp consists of one 12-foot wide lane, 5 feet wide left shoulder, and 10 feet wide right shoulder with super cross slope of about 10% towards the MBGR

At this time, from the available information on file, we were unable to determine whether the embankment fill was surcharged to mitigate the expected settlement due to the placement of the fill.

MR. TUNG LY  
Attn: Nikzad/Mangat  
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According to field Maintenance, this connector ramp has had similar issues in the past and based on the As-Built Plans, in 1992 (Contract No. 04-487044), under CCO #12, the existing pavement structural section was excavated to the depth of about 4.5 ft and replaced with new fill including a 2.1 feet thick new pavement section including an ATPB layer and edge drain.

## 1.2 Conclusions

Based on the above, we conclude the following:

- Based on our joint site visit with our geologist, review of our subsurface investigation and As-Built LOTB sheets, we believe that problem at this location is not due to the slope/slide failure. The pavement cracking/settlement issue appears to be primarily due to the combination of foundation settlement, settlement within the embankment itself, centrifugal forces due to moving traffic, and the existing edge drain.
- We back calculated the post construction settlement time due to the 30 ft high embankment fill and is estimated to be about 20 years. Since the original fill was placed prior to 1969, it is reasonable to conclude that the settlement is completed. However, the rise in groundwater as a result of SCVWD groundwater recharge program could be the reason for the recent settlement problem.
- The above mentioned 630 ft longitudinal crack is located right above the existing edge drain. This implies that the primary reason for this surficial crack may be due to the presence of ATPB layer and the edge drain.
- The water in the edge drain has to travel a very long distance (500'±) to drain over the slope or into the existing DI. However, based on our experience, we believe most of the water collected by the edge drain seeps into the embankment rather than reaching the outlets or the DI's, saturating the embankment fill. We believe, this has caused settlements within the embankment fill in addition to the post construction foundation settlement due to SCVWD recharge program.
- The ATPB layer and the edge drain consist of granular material (one size crushed rock) bonded with sticky tar, so it has minimal lateral resistance capacity. Considering this, the continuous post construction foundation settlement, the embankment 10% cross slope, centrifugal forces due to moving traffic and close proximity of the edge drain to the embankment slope, the 630 ft longitudinal pavement crack has occurred at this location.
- Based on the lab test results, it appears the foundations soils are relatively saturated (moisture content varies from 8% to 52.1%) and above optimum moisture content, as well as the presence of expansive soils (Plasticity Index varies between 15 and 29).

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- The departure slabs of the connector ramp at Minor Ave OC have settled about 5 inches. Refer to the attached Photo Exhibit A.

## **2. SCOPE OF WORK**

The following tasks were performed for the preparation of this Foundation Report:

- Field mapping
- Field geotechnical exploration, including drilling five borings
- Review of the previously prepared memorandums by this office
- Laboratory testing on selected samples for Moisture Content, Atterberg limits and Corrosion

## **3. REGIONAL AND SITE GEOLOGIC SETTING**

### **3.1 Regional Geologic Overview**

The project is located in the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges (2,000 to 4,000, occasionally 6,000 feet elevation above sea level), and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The Coast Ranges are composed of thick Cenozoic sedimentary and volcanic strata overlying Mesozoic metamorphic basement rock. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The Coast Ranges are subparallel to the active San Andreas Fault, which is more than 600 miles long, extending from Pt. Arena to the Gulf of California.

### **3.2 Site Geology**

According to the geologic map of the area, the project is underlain by Holocene-aged (present to 10,000 years) levee deposits (Qh1) and Quaternary-age (present to 2.6 million years) older alluvial fan deposits (Qhf2) (Wentworth and others, 1999). The levee deposits are described as loose, moderately to well-sorted sandy or clayey silt grading to sandy or silty clay. These deposits are porous and permeable and provide conduits for transport of ground water. Levee deposits border stream channels, usually both banks, and slope away to flatter floodplains and basins. The older alluvial fan deposits are described as brown dense gravely and clayey sand or clayey gravel that fines upward to sandy clay. These deposits display various sorting qualities. All of these deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher topographic position, greater degree of dissection, and stronger profile development. They are less permeable than younger deposits, and locally contain fresh water mollusks and extinct Pleistocene vertebrate fossils. The relevant portion of the map is included as Figure 1, Geologic Map.

### **3.3 Seismicity**

Geologists and seismologists recognize the San Francisco Bay Area as one of the most active seismic regions in the United States. There are three major faults that trend in a northwest direction through the Bay Area, which have generated about 12 earthquakes per century large enough to cause significant structural damage. These earthquakes occur on faults that are part of the San Andreas Fault system that extends for at least 700 miles along the California Coast, and includes the San Andreas, Hayward, and Calaveras Faults. The San Andreas Fault is located approximately 17.95 miles southwest of the site. The Hayward and Calaveras Faults are located approximately 6.3 and 9.1 miles northeast of the site, respectively (See Figure 2, San Francisco Bay Region Earthquake Probability Map). Additionally, according to the Caltrans ARS v1.0.4, the Silver Creek Fault is mapped 2.5 miles northeast of the site.

Seismologic and geologic experts convened by the U. S. Geological Survey concluded that there is a 62 percent probability for at least one "large" earthquake of magnitude 6.7 or greater in the Bay Area before 2032. They also maintain that there could be more than one earthquake of this magnitude and that numerous "moderate" earthquakes of about magnitude 6 are probable before 2032. The San Andreas Fault is estimated to have a 21 percent probability of producing a magnitude 6.7 or larger earthquake by the Year 2032 (WGCEP, 2003). The probability of the Hayward, Calaveras, and Greenville Faults producing a similar size earthquake during the same time period is 27 percent, 11 percent and 3 percent, respectively (See Figure 2, San Francisco Bay Region Earthquake Probability Map).

### **3.4 Geologic Hazards**

The site may be affected by activity along any of the active faults discussed above. Earthquake induced hazards can be categorized as primary and secondary seismic effects.

Primary seismic effects such as ground rupture or surface deformation resulting from differential movement along a fault trace are not expected to occur on the site since there are no active faults mapped within the project limits.

Secondary seismic effects result from various soil responses to ground acceleration. These effects result from activity of any nearby active faults.

Liquefaction of Natural Ground – Liquefaction is a process by which soil deposits below the water table temporarily lose strength and behave as a viscous liquid rather than a solid, typically during a moderate to large earthquake. In general, very loose to medium dense, clean fine- to medium-grained sand and very soft to firm; low plasticity silts that are relatively free of clay are most susceptible to liquefaction. Earthquake-induced ground shaking can cause these loose or soft materials to densify, resulting in increased pore water pressures and an upward movement of groundwater that may result in a liquefied condition. Depending on the weight of the structure,

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the depth to the liquefied stratum, and the nature of the overlying soils, structures situated above such temporarily liquefied soils may sink or tilt, causing significant structural damage.

According to the Liquefaction Susceptibility Map, the project is located in an area where historic occurrence of liquefaction, or local, geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) (see Figure 3, Seismic Hazard Map-Liquefaction Susceptibility Map).

Cracking – Lurch cracks may develop in the silty and clayey soil overlying the site. The potential for lurch cracking will be higher in the rainy periods when the soil is saturated. In our opinion, the hazard from cracking will be considered minimal, provided that it is designed and constructed in accordance with the recommendations of this report.

Differential Compaction – During moderate and large earthquakes, soft or loose, natural or fill soils can become densified and consolidate, often unevenly across a site. Based on our subsurface investigation, it appears that portions of the existing fill material below the roadway are loose and, in our opinion, may be subject to differential compaction. In our opinion, differential compaction of the fill should not have an impact on the proposed project, provided that it is designed and constructed in accordance with the recommendations of this report.

Ground Shaking - As noted in the Seismicity section above, moderate to large earthquakes are probable along several active faults in the greater Bay Area. Therefore, strong ground shaking should be expected at some time during the design life of the proposed development. The improvements should be designed in accordance with current earthquake resistant standards.

Shrink Swell –Since the site is underlain by clay and silts there is a moderate shrink swell potential. The soil expansion and/or contraction can cause foundations to shift and roadways to crack. Suitable base material will be needed. In cut areas, underdrains may be warranted in order to keep moisture from moving beneath roadways.

#### **4. FOUNDATION SOIL AND GROUNDWATER**

Five Power borings (R-13-001, R-13-002, A-13-003, A-13-004 and A-13-005) were drilled utilizing 6 inches hollow stem auger and rotary wash drilling methods with Standard Penetration Test (SPT) sampling in September 2013, within the project limits to the depths of 51.5 ft, 36.5 ft, 36.5 ft, 31.5 and 25.5 ft, respectively. The boring describe the subsurface soils as approximately 45 feet of very soft to hard sandy lean clay (of which there are about 30 ft of embankment fill). Boring R-13-001 describes the remainder of the subsurface soils as stiff elastic silt. The

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unconfined compressive strength of the clayey soils (using a pocket penetrometer) was estimated to range between 0.75 and 4.0 tsf. The SPT blow counts range from less than 1 (push) to 17 blows per foot. Boring R-13-001 was converted to Slide Indicator/Piezometer in order to monitor the ground water and any future roadway movement.

Groundwater was encountered in borings R-13-001 and R-13-002 at the depths of 42.65 and 20 ft below roadway surface (MSL 494 ft) during drilling and measured a few days later. Refer to the Log of Test Boring Sheets (LOTB) for details. The LOTB sheets will be forwarded to you when completed and should be included with the contract plans.

## **5. RECOMMENDATIONS**

Based on the above, and since the possibility of slope failure is eliminated at this time (we will monitor the recently installed SI for any future roadway movement), we recommend the following:

### **5.1 Existing PCC leave Slab**

In order to stabilize the foundation soil beneath the existing leave PCC slab, we recommend using soil densification with expanded polyurethane material. Expanded polyurethane material (Permeation grouting) refers to the soil improvement technique of injecting under pressure a foam grout to densify and compact the surrounding soil or fill and lift structure. This high density expanded polyurethane foam with a nominal free rise density of 3 pounds will expand up to 20 times its original liquid form, exerting an upward anisotropic lifting force of approximately 3 kips per square foot. This technique can also be used to lift the existing PCC leave slab to its original position.

The advantage of using this material is that it is an impermeable lightweight material, thus, it would not add much weight to the foundation soils and it would also act as a sealant at the joint eliminating the seepage problem.

According to our field measurement, a 5- inch PCC departure slab lifting may be necessary.

We recommend injecting polyurethane material by drilling 5/8-inch to ¾-inch holes on approximate 4-foot centers.

For leave slab lifting purposes, 1200 pounds of polyurethane material is required to lift the 5 inches PCC drop.

The polyurethane material quantities are estimated as follows:

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The total estimated area for PCC slab that require lifting is 480 square feet. We recommend three injection points per grout hole at the depths of 5 ft, 10 feet, and 15 feet. The estimated number of grout holes is 30.

A total of about 4500 pounds for soil densification and 1000 pounds is required for 5 inches lifting of the PCC leave slab.

The total geotechnical estimated cost is \$50,000.00 (5500 pounds x \$8.00/pound) = \$44,000.00 and about \$6,000.00 of mobilization cost. See attached Photo Exhibit B for preliminary grout holes.

Please consult with District Materials Branch and Office of Structures Design about need of the leave slab replacement.

## 5.2 Roadway Embankment

- Remove the existing structural section including MBGR and excavate to the depth of 4.5 ft below roadway surface into the existing embankment fill. The limits of excavation are between Stations 14+16 and 19+95. Please note that if PCC leave slab is determined to be replaced, the existing slab should be removed after soil densification described above has been completed.
- Replace the excavated area with the geosynthetic reinforced embankment (as per Section 19-6.02B of the Standard Specifications), using geosynthetic reinforcement with Long Term Design Strength of 1500 lb/ft, and glass grid/pavement reinforcement fabric (as per Materials Branch recommendation). This will bond the structural section and the foundation soils together and resist against any future differential settlement (if any) and the pavement cracking. Refer to the Attached Exhibit C for details.

ATPB layer and edge drain should not be used in the new proposed structural section.

We will work with Materials section for the design of the structural section at design time.

## 7. CORROSION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643.

The Department currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

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The following table provides our corrosion test summary based on the laboratory test results on the soil samples from boring A-13-003:

<i>Boring</i>	<i>SIC Number (TL-101)</i>	<i>Sample Depth</i>	<i>Resistivity (Ohm-Cm)</i>	<i>pH</i>	<i>Chloride Content (ppm)</i>	<i>Sulfate Content (ppm)</i>
A-13-003	C634130	25'-35'	899	7.0	N/A	N/A

The test results indicate that the site is NOT corrosive.

#### 8. DISCLAIMER

The recommendations contained in this report are based on specific project information regarding structure type, location, and design loads that have been provided by the Office of West. If any conceptual changes are made during final project design, the Office of Geotechnical Design-West, Branch A should review those changes to determine if these foundation recommendations are still applicable.

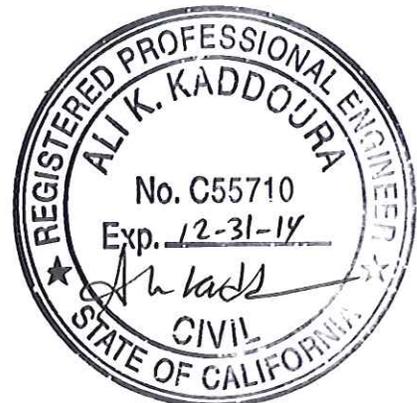
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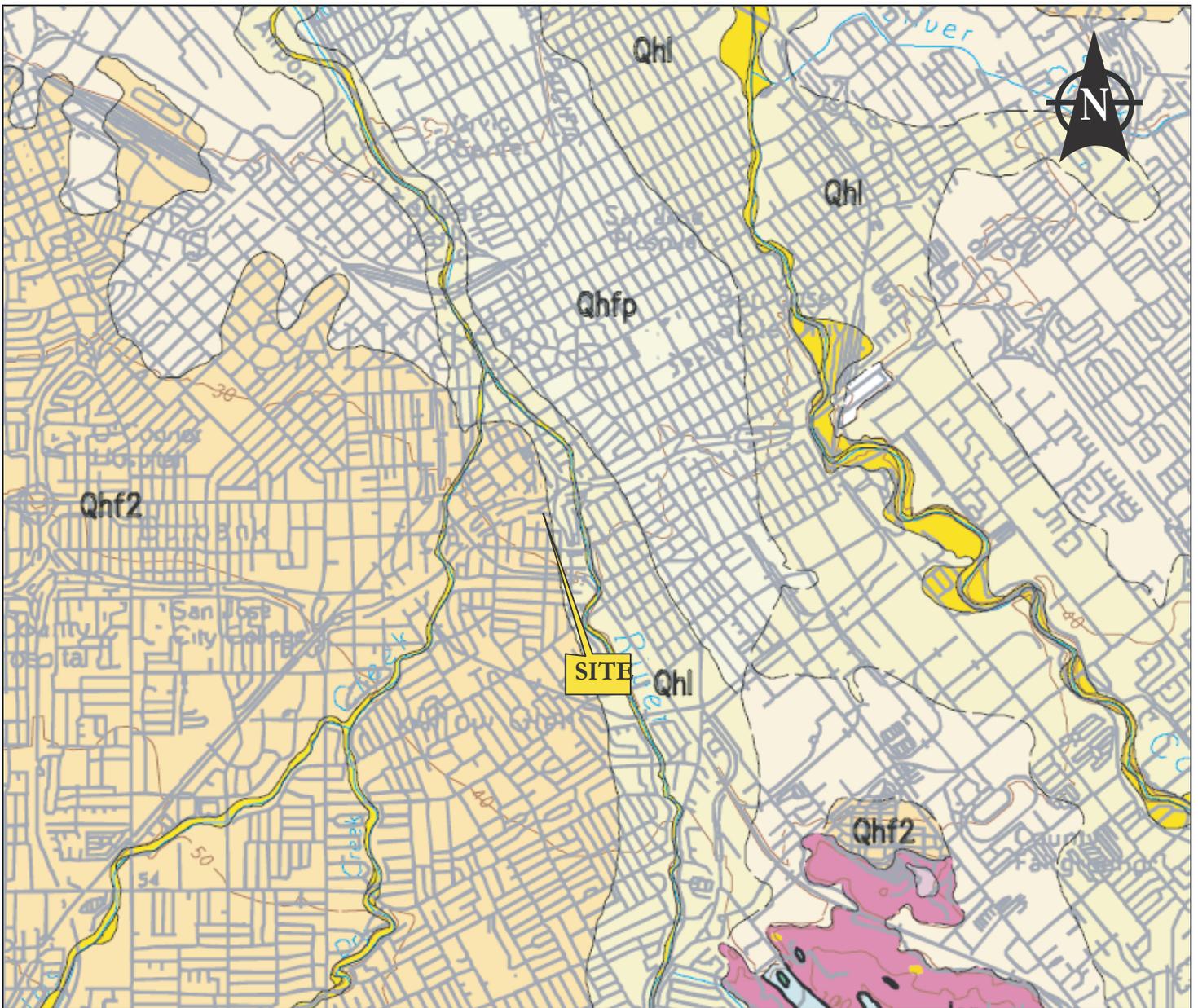
Any questions regarding the above recommendations should be directed to the attention of Ali Kaddoura/Mohammad Zabolzadeh at 510-286-4676/4831 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

Attachments:

- c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), RShira (GS Corporate), RE pending File (Structure Construction), John Stayton (DES OE), RWoo (District ME), DEI-Tawansy (District PM), MAZimi (District Senior) ZMangat (District PE)

Zabolzadeh-Kaddoura/mm/ISS521-SCI 280 PM 2.6 GDR



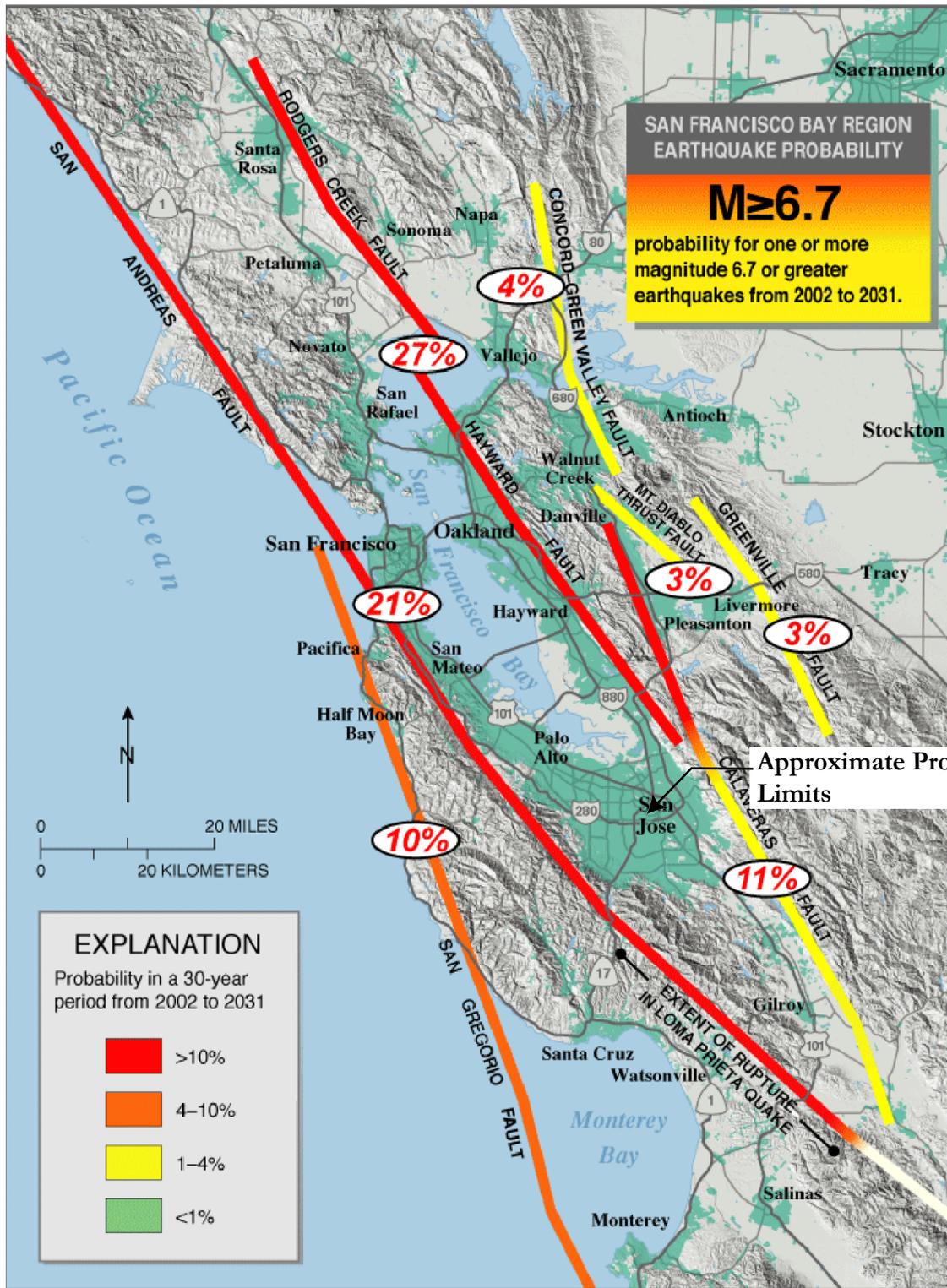


**LEGEND**

- Qh1 Levee deposits (HOLOCENE)
- Qhfp Flood plain deposits (HOLOCENE)
- Qhf2 Older Alluvial Fan Deposits

Base: Preliminary Geologic Map of The San Jose 60 x 60-Minute Quadrangle, California  
 (Wentworth and others, 1999)  
 Not to scale

	<b>STORM DAMAGE</b> <b>HIGHWAY 280/87, POST MILE 2.6/5.1</b> <b>SANTA CLARA COUNTY, CALIFORNIA</b>	<b>VICINITY</b> <b>GEOLOGIC MAP</b>
	NOVEMBER 2013	Efis #: 0412000543



**SAN FRANCISCO BAY REGION  
EARTHQUAKE PROBABILITY**

**M ≥ 6.7**

probability for one or more  
magnitude 6.7 or greater  
earthquakes from 2002 to 2031.

**EXPLANATION**

Probability in a 30-year period from 2002 to 2031

- >10%
- 4-10%
- 1-4%
- <1%

Approximate Project Limits



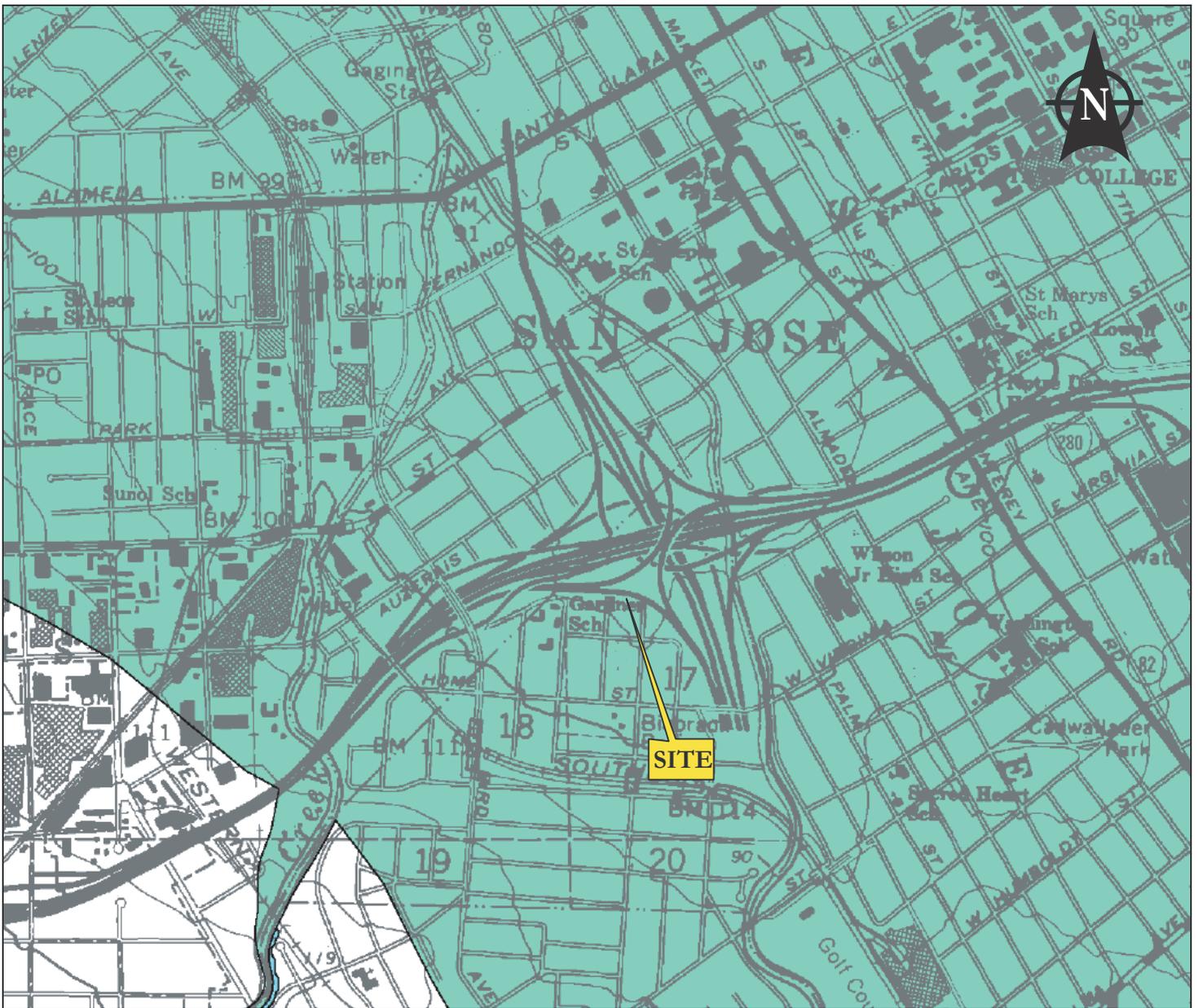
**STORM DAMAGE**  
**HIGHWAY 280/87, POST MILE 2.6/5.1**  
**SANTA CLARA COUNTY, CALIFORNIA**

**SF BAY REGION**  
**EARTHQUAKE**  
**PROBABILITY**

NOVEMBER 2013

Efis #: 0412000543

FIGURE 2



**LEGEND**



Areas where historic occurrence of liquefaction, or local, geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

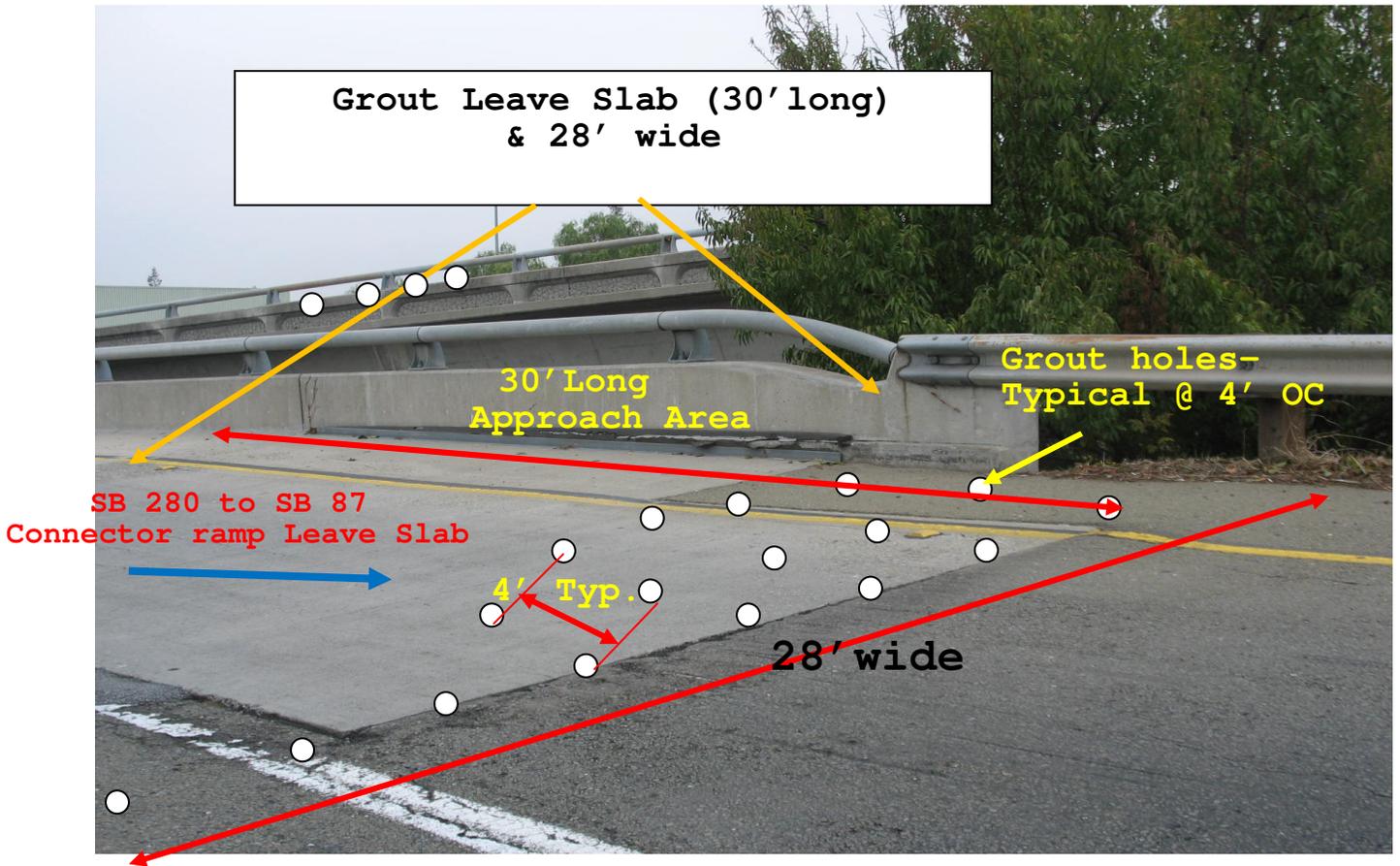


Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Base: State of California Seismic Hazard Zone Map for the San Jose West 7.5 Minute Quadrangle, CGS 2003.  
Not to scale

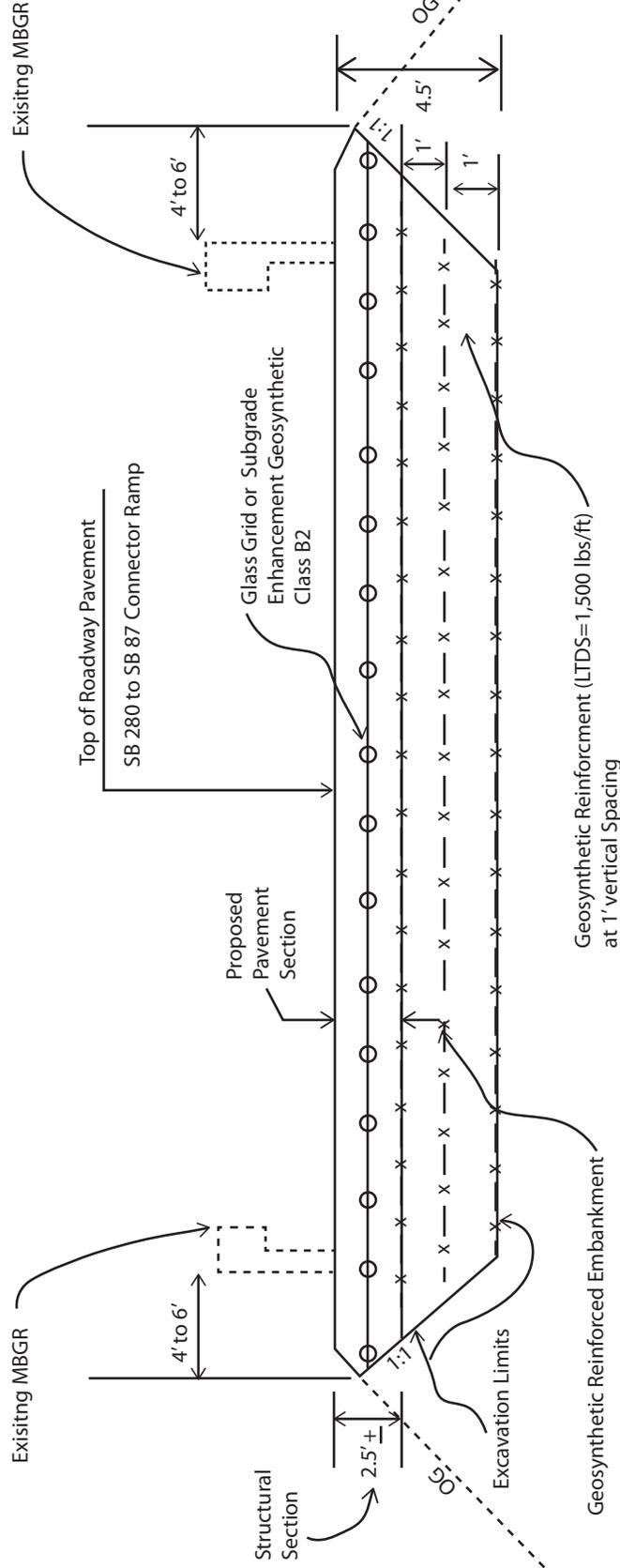
	<b>STORM DAMAGE</b> HIGHWAY 280/87, POST MILE 2.6/5.1 SANTA CLARA COUNTY, CALIFORNIA		<b>STATE SEISMIC HAZARD MAP</b>
	NOVEMBER 2013	Efis #: 0412000543	FIGURE 3





Polyurethane Material Grout  
 (15' deep and 28' wide - 3  
 injection points/hole @ 5',  
 10' & 15' depth) for entire  
 width of Bridge (Typical  
 Pattern)

**EXHIBIT B-PCC Leave Slab**  
 04-SCL-280 PM 2.6  
 (SB 280 to SB 87 Connector)  
 04-1SS520  
 November 2013



## TYPICAL X- SECTION

**SCALE**  
Not to Scale



**DIVISION OF  
ENGINEERING SERVICES  
GEOTECHNICAL SERVICES**  
GEOTECHNICAL DESIGN - WEST - BRANCH B

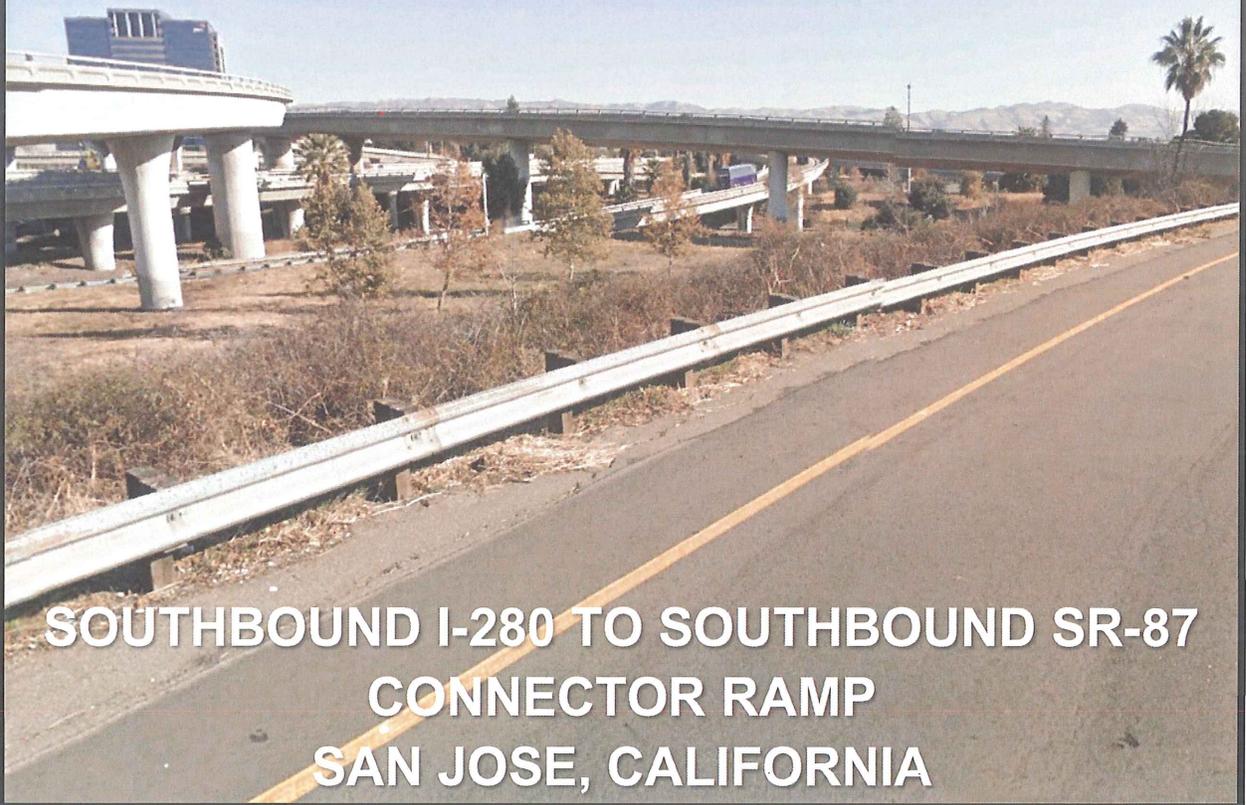
**Geosynthetic Reinforced Embankment**

**04-SCL-280      0412000543-0**

**PM. 2.6      NOVEMBER 2013**

**Exhibit C**

# PRELIMINARY SITE INVESTIGATION REPORT



## SOUTHBOUND I-280 TO SOUTHBOUND SR-87 CONNECTOR RAMP SAN JOSE, CALIFORNIA

***PREPARED FOR:***

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



***PREPARED BY:***

GEOCON CONSULTANTS, INC.  
6671 BRISA STREET  
LIVERMORE, CALIFORNIA



GEOCON PROJECT NO. E8721-02-10  
CALTRANS EA 04-1SS521  
CALTRANS PROJECT NO. 04-1200-0543-1

JULY 2014

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## PROJECT TEAM

Contact	Affiliation	Responsibility
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Baojia Ke 510.895.3675 510.895.3680 fax <a href="mailto:sanleandrolab@emsl.com">sanleandrolab@emsl.com</a>	EMSL Analytical, Inc. 2235 Polvorosa Ave., Suite 230 San Leandro, California 94577 ( <i>Geocon Subcontractor</i> )	Soil Sample Analysis

## REPORT LIMITATIONS

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.

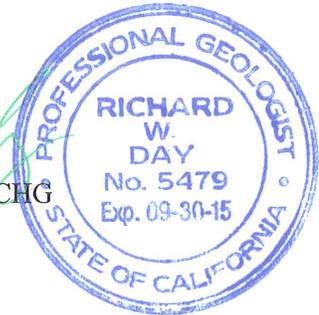
This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts 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.

  
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Senior Staff Scientist

  
Richard Day, CEG, CHG  
Senior Geologist



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District Branch Chief

Approved By:

  
Allen Baradar, PE  
District Office Chief

# PRELIMINARY SITE INVESTIGATION REPORT

## 1.0 INTRODUCTION

This Preliminary Site Investigation Report for the Interstate 280 (I-280) to State Route 87 (SR-87) connector ramp project in San Jose, Santa Clara County, California was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A4336 and Task Order No. 10 (TO-10), EA 04-1SS521.

### 1.1 Project Description and Proposed Improvements

The project proposes to remove and replace an existing structural section of the connector ramp from southbound (SB) I-280 to SB SR-87 in San Jose, California. Work will take place within Caltrans right-of-way. The project location is depicted on the attached Vicinity Map, Figure 1.

### 1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of California Assessment Manual (CAM 17) metals, total petroleum hydrocarbons as diesel (TPHd), as motor oil (TPHmo), and as gasoline (TPHg), and naturally occurring asbestos (NOA) in soil within the project limits.

The information obtained from this investigation will be used by Caltrans to evaluate soil handling practices, worker health and safety, and soil reuse and disposal options.

## 2.0 BACKGROUND

### 2.1 Hazardous Waste Determination Criteria

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

For waste containing metals, the waste is classified as California hazardous when: 1) the representative total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the representative soluble metal content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that

100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the representative soluble metal content equals or exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

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

## 2.2 Environmental Screening Levels

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

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

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

The respective ESLs are listed at the end of Tables 3 and 4 for comparative purposes.

## 2.3 Naturally Occurring Asbestos

As defined in current California Air Resources Board (CARB) rules, serpentine material refers to any material that contains at least 10% serpentine, and asbestos-containing serpentine refers to serpentine materials with an asbestos content greater than 5% as determined by CARB Test Method 435 (CARB 435). The use of serpentine material for road surfacing is prohibited in California by Title 17 of the California Code of Regulations (CCR) Section 93106, Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Application (ATCM 93106), unless the material has been tested and determined to have an asbestos content of less than 0.25%. Materials found to contain asbestos of 0.25% or more are considered to be designated waste if transported offsite, requiring disposal at a landfill facility designated to accept asbestos waste. Alternatively, asbestos-containing materials may be reused onsite if buried beneath a minimum 6 inches of soil.

The CARB specifies mitigation practices for construction, grading, quarrying, and surface mining operations that contain natural occurrences of asbestos outlined in Title 17, Section 93105, Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM 93105). Based on Part (e) Subpart (2) of ATCM 93105 an asbestos dust mitigation plan is required and must be implemented for a project if NOA is disturbed after the start of construction. Additionally, ATCM 93105 specifies that the air pollution control district (APCD) must be notified and an asbestos dust mitigation plan submitted to the APCD. The ATCM states that air monitoring may be required on the property. NOA potentially poses a health hazard when it becomes an airborne particulate.

The construction/maintenance activities mentioned above could disturb NOA-laden debris and soil, thereby potentially creating an airborne 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 respirators with high-efficiency particulate air (HEPA) filters during construction activities.

### 3.0 SCOPE OF SERVICES

The scope of services performed under TO-10, EA 04-1SS521 included the following:

#### 3.1 Pre-field Activities

- Prepared the Preliminary Site Investigation Workplan and Health and Safety Plan, dated June 2014.
- Retained the services of Advanced Technology Laboratories, Las Vegas, Nevada (ATL-LV), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL, Inc., a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of soil samples.

#### 3.2 Field Activities

The field investigation was performed on June 19, 2014, by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced 20 soil borings at the project location using hand-auger drilling techniques. The borings were advanced to a maximum depth of 4.5 feet.

The following samples were collected:

- 20 soil samples for CAM 17 metals analysis
- 39 samples for total lead analysis
- 19 samples for TPHd and TPHmo analyses
- 20 samples for TPHg analysis
- 19 samples for pH analysis
- 20 soil samples for NOA analysis
- 3 equipment rinse blanks for total lead analysis

Samples were transported to ATL-LV and EMSL for analysis under standard chain-of-custody (COC) documentation.

## 4.0 INVESTIGATIVE METHODS

### 4.1 Sampling Procedures

Soil samples were collected under the direction of the on-site Task Order Managers at depths of 0 to 0.5, 1.5 to 2, and 4 to 4.5 feet. Refusal was encountered at 3 feet in boring B4. Groundwater was not encountered during the investigation. Boring coordinates are presented on Table 1. The Site Plan, Figure 2, shows the boring locations.

Samples were collected using a hand-auger. The samples were placed in stainless steel tubes and sealed with Teflon tape and plastic lids prior to being stored in a chest cooled with ice.

Sample containers were labeled and transported to Caltrans-approved, certified environmental laboratories using standard COC documentation. Soil borings were backfilled to surface with soil cuttings.

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water. The equipment rinse blank was collected by pouring deionized water over the cleaned sampling equipment and collecting it into a sample container for laboratory analysis. Decontamination water was disposed of to the ground surface within Caltrans right-of-way in a manner not to create runoff, away from drain inlets or potential water bodies.

### 4.2 Laboratory Analyses

Laboratory analyses were performed by ATL-LV and EMSL under expedited turnaround-time (TAT) per the Task Order Manager. The laboratory reports and COC documentation are included in Appendix A.

The samples were analyzed as follows:

- 20 samples for CAM 17 metals using EPA Test Methods 6010 ICAP and 7471
- 39 samples for total lead using EPA Test Method 6010 ICAP
- 19 samples for TPHd using EPA Test Method 8015B
- 19 samples for TPHmo using EPA Test Method 8015B
- 20 samples for TPHg using EPA Test Method 8015B
- 19 samples for pH using EPA Test Method 9045C
- 20 samples for NOA using CARB 435

Three QA/QC equipment rinse blank samples were analyzed for total lead using EPA Test Method 6010 ICAP.

### **4.3 Laboratory QA/QC**

QA/QC procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures 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 spike made at ten times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratory, the COC documentation was reviewed for accuracy and completeness.

## **5.0 INVESTIGATIVE RESULTS**

### **5.1 Subsurface Conditions**

Observations during field activities that indicated that soil in the area generally consisted of dark brown fill material, black clay, and gravel to a depth of 4.5 feet. Groundwater was not encountered.

### **5.2 Laboratory Analytical Results**

The analytical results are summarized in Tables 2 through 5, and are summarized below:

#### **Sample Results:**

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, molybdenum, silver, and thallium.
- Total chromium was reported at concentrations ranging from 58 to 260 mg/kg.
- Total mercury was reported at concentrations of up to 3.9 mg/kg.
- Total nickel was reported at concentrations ranging from 88 to 610 mg/kg.
- Remaining CAM 17 metals were reported in the samples at total concentrations below 10 times their respective STLCS.
- WET chromium was reported at concentrations ranging from 0.36 to 1.6 mg/l.
- WET mercury was not detected at or above the reporting limit of 0.00050 mg/l.

- WET nickel was reported at concentrations ranging from 4.1 to 9.0 mg/l.
- TPHd was reported at concentrations ranging from 4.2 to 21 mg/kg.
- TPHmo was reported at concentrations ranging from 7.4 to 82 mg/kg.
- TPHg was not detected at or above the laboratory reporting limit of 1.0 mg/kg.
- pH ranged from 4.6 to 8.2.
- NOA was detected at concentrations of up to 10.00% Chrysotile.

QA/QC Sample Results:

- Total lead was not detected at or above the laboratory reporting limit of 0.0050 mg/l in the equipment rinse blank samples.

### 5.3 Laboratory Quality Assurance/Quality Control

We reviewed the QA/QC results provided with the laboratory analytical reports. The data indicate non-detect results for the method blanks at or above reporting limits. The spike/surrogate was diluted out for several samples due to matrix interference. The RPD for several duplicate samples was outside acceptance criteria; therefore, calculations were based on raw values. Remaining samples and internal laboratory QA/QC samples showed acceptable recoveries and relative percent differences (RPDs). Based on this limited data review, no additional qualifications of the soil data are necessary, and the data are of sufficient quality for the purposes of this report.

## 6.0 CONCLUSIONS

### 6.1 CAM 17 Metals

With the exceptions of chromium, mercury, and nickel, CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs. Concentrations of WET chromium, WET mercury, and WET nickel were below the STLCs for these compounds. Therefore, soil would be classified as non-hazardous based on CAM 17 metals concentrations.

The CAM 17 metals concentrations in site soil were compared to ESLs. Arsenic, cobalt, and nickel were reported at concentrations greater than one or more ESL values. Statistical methods were used to calculate the upper confidence limit (UCL) of the arithmetic mean of the total arsenic, cobalt, and nickel concentrations. The upper one-sided 95% UCL of the arithmetic mean is defined as the value that, when calculated repeatedly for randomly drawn subsets of site data, equals or exceeds the true mean 95% of the time. The UCL of the arithmetic mean concentration is used as the mean concentration because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The 95% UCL, therefore, accounts for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCL moves closer to the true mean.

Non-parametric bootstrap techniques were used to calculate the 95% UCLs. The bootstrap test results are included in Appendix B. ESLs, UCL, and published background concentrations for arsenic, cobalt, and nickel are summarized in the table below.

Metal	Maximum	95% UCL	Shallow Soil Residential ESL	Shallow Soil Commercial/ Industrial ESL	Worker Direct Exposure ESL	Published Background Mean <sup>1</sup>	Published Background Range <sup>1</sup>
Arsenic	15	6.69	0.39	1.6	10	3.5	0.6 to 11.0
Cobalt	36	17.8	23	80	49	14.9	2.7-46.9
Nickel	610	191	150	150	6,100	57	9 to 509

Concentrations reported in mg/kg

<sup>1</sup> Kearney Foundation of Soil Science, March 1996

The 95% UCL arsenic concentration is greater than the residential and commercial land use ESLs; however, it is less than the construction exposure ESL and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The 95% UCL cobalt concentration is below the residential and commercial land use ESLs, the construction exposure ESL, and is within the published background range.

The 95% UCL nickel concentration is above the residential and commercial land use ESLs, however, it is below the construction exposure ESL and within the published background range.

Based on the reported results for arsenic, cobalt, and nickel, reuse or disposal of excavated soil may be restricted depending on proposed use.

Metals results for soil samples are summarized in Table 3.

## **6.2 Organic Compounds**

TPHg was not detected in the samples at or above the laboratory reporting limit of 1.0 mg/l.

TPHd was reported at concentrations ranging from 4.2 mg/kg to 21 mg/kg, below the ESLs.

TPHmo was reported at concentrations ranging from 7.4 mg/kg to 82 mg/kg, below the ESLs.

A summary of petroleum hydrocarbon concentrations in site soil is presented in Table 4.

## **6.3 Naturally Occurring Asbestos**

Twenty soil samples were collected from the site and analyzed for asbestos by CARB Test Method 435 using polarized light microscopy (PLM) and at a target sensitivity of 0.25% asbestos. Chrysotile asbestos was reported at concentrations ranging from 0.25% to 10.00% in seven samples. Five samples were reported to contain trace (<0.25%) chrysotile asbestos. Asbestos fibers were not observed in the remaining eight samples.

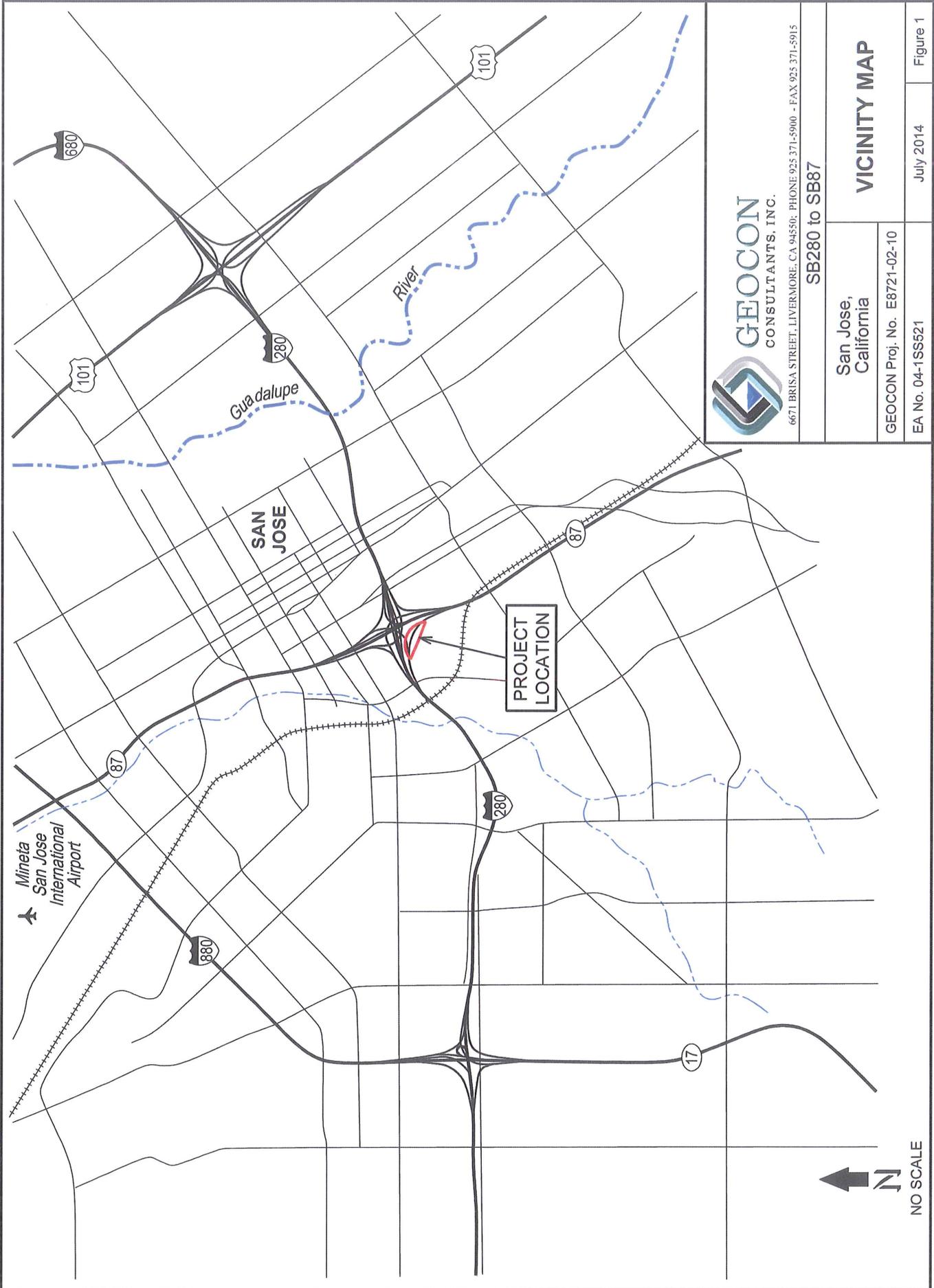
ATCM 93105 sets forth measures to be followed for the investigation and control of naturally occurring asbestos for construction sites. Because NOA was reported at concentrations exceeding the regulatory threshold of 0.25%, regulations regarding site work should be consulted. Soil reuse and disposal may be restricted based on asbestos content.

Additionally, it is Caltrans policy that a contractor have an asbestos compliance plan in place on projects where personnel may be in contact with materials known to contain NOA and that wet methods be used to minimize the potential for airborne asbestos.

A summary of NOA results is included in Table 5.

#### **6.4 Worker Protection**

The contractor(s) should prepare a project-specific health and safety plan and asbestos compliance plan to prevent or minimize worker exposure to metals and NOA in soil. The plan(s) should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soil.



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**SB280 to SB87**

San Jose,  
California

**VICINITY MAP**

GEOCON Proj. No. E8721-02-10

EA No. 04-1SS521

July 2014

Figure 1



NO SCALE

**TABLE 1**  
**Boring Coordinates**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

<b>Boring</b>	<b>Latitude</b>	<b>Longitude</b>
B1	37.321496264	-121.891657196
B2	37.321726785	-121.891857698
B3	37.321954076	-121.892077108
B4	37.322172534	-121.892346950
B5	37.322315654	-121.892591013
B6	37.322461104	-121.892931160
B7	37.322535290	-121.893203242
B8	37.322603866	-121.893591048
B9	37.322616185	-121.894218655
B10	37.322594352	-121.894554204
B11	37.322602078	-121.894832286
B12	37.322682423	-121.894695018
B13	37.322687999	-121.894222611
B14	37.322684552	-121.893571350
B15	37.322630261	-121.893234151
B16	37.322536660	-121.892891400
B17	37.322408407	-121.892588781
B18	37.322233278	-121.892295351
B19	37.322107637	-121.892119134
B20	37.321883533	-121.891886615

**TABLE 2**  
**Summary of Lead and pH Results**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	pH
B1-0.5	0 to 0.5	14	---
B1-2.0	1.5 to 2	11	8.1
B1-4.5	4 to 4.5	6.6	---
B2-0.5	0 to 0.5	11	---
B2-2.0	1.5 to 2	16	---
B2-4.5	4 to 4.5	8.7	8.2
B3-0.5	0 to 0.5	12	---
B3-2.0	1.5 to 2	14	---
B3-4.5	4 to 4.5	11	8.1
B4-0.5	0 to 0.5	15	---
B4-2.0	1.5 to 2	5.8	---
B5-0.5	0 to 0.5	13	---
B5-2.0	1.5 to 2	9.7	8.1
B5-4.5	4 to 4.5	15	---
B6-0.5	0 to 0.5	13	---
B6-2.0	1.5 to 2	14	---
B6-4.5	4 to 4.5	7.0	7.7
B7-0.5	0 to 0.5	11	---
B7-2.0	1.5 to 2	14	---
B7-4.5	4 to 4.5	11	7.5
B8-0.5	0 to 0.5	26	---
B8-2.0	1.5 to 2	10	---
B8-4.5	4 to 4.5	5.9	5.5
B9-0.5	0 to 0.5	18	---
B9-2.0	1.5 to 2	11	---
B9-4.5	4 to 4.5	11	4.6
B10-0.5	0 to 0.5	28	---
B10-2.0	1.5 to 2	9.6	8.1
B10-4.5	4 to 4.5	8.6	---
B11-0.5	0 to 0.5	16	---
B11-2.0	1.5 to 2	<5.0	---
B11-4.5	4 to 4.5	9.9	7.8
B12-0.5	0 to 0.5	20	---
B12-2.0	1.5 to 2	<5.0	---
B12-4.5	4 to 4.5	7.6	5.4

**TABLE 2**  
**Summary of Lead and pH Results**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	pH
B13-0.5	0 to 0.5	24	---
B13-2.0	1.5 to 2	12	---
B13-4.5	4 to 4.5	7.9	5.8
B14-0.5	0 to 0.5	13	---
B14-2.0	1.5 to 2	14	---
B14-4.5	4 to 4.5	7.1	6.8
B15-0.5	0 to 0.5	13	---
B15-2.0	1.5 to 2	8.4	7.9
B15-4.5	4 to 4.5	6.1	---
B16-0.5	0 to 0.5	8.8	---
B16-2.0	1.5 to 2	9.7	---
B16-4.5	4 to 4.5	11	8.2
B17-0.5	0 to 0.5	12	---
B17-2.0	1.5 to 2	11	---
B17-4.5	4 to 4.5	8.3	8.2
B18-0.5	0 to 0.5	9.9	---
B18-2.0	1.5 to 2	7.6	---
B18-4.5	4 to 4.5	<5.0	8.1
B19-0.5	0 to 0.5	13	---
B19-2.0	1.5 to 2	7.0	---
B19-4.5	4 to 4.5	6.9	8.2
B20-0.5	0 to 0.5	15	---
B20-2.0	1.5 to 2	9.7	8.0
B20-4.5	4 to 4.5	14	---
EB1		<0.0050 mg/l	
EB2		<0.0050 mg/l	
EB3		<0.0050 mg/l	
<b>Hazardous Waste Criteria</b>			
	TTL (mg/kg)	1,000	---
	STL (mg/l)	5.0	---
	TCLP (mg/l)	5.0	---

**Notes:**

mg/kg = milligrams per kilogram  
mg/l = milligrams per liter  
TCLP = Toxicity Characteristic Leaching Procedure  
TTL = Total Threshold Limit Concentration  
STL = Soluble Threshold Limit Concentration

TABLE 3  
 Summary of CAM 17 Metals Results  
 Southbound I-280 to Southbound SR-87  
 San Jose, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
B1-0.5	0 to 0.5	<2.0	5.7	170	<1.0	<1.0	65 <i>0.68</i>	14	36	14	0.81	<1.0	100	1.2	<1.0	<1.0	44	93
B2-0.5	0 to 0.5	<2.0	4.0	160	<1.0	<1.0	76 <i>0.52</i>	14	25	11	0.48	<1.0	120	1.2	<1.0	<1.0	39	66
B3-0.5	0 to 0.5	<2.0	14	200	<1.0	<1.0	68 <i>0.36</i>	14	46	12	0.34	<1.0	99	1.3	<1.0	<1.0	42	110
B4-0.5	0 to 0.5	<2.0	15	180	<1.0	<1.0	65 <i>0.55</i>	14	52	15	0.27	<1.0	92	1.2	<1.0	<1.0	43	110
B5-0.5	0 to 0.5	<2.0	4.9	150	<1.0	<1.0	74 <i>0.61</i>	14	29	13	0.38	<1.0	140	1.1	<1.0	<1.0	43	75
B6-0.5	0 to 0.5	<2.0	4.1	170	<1.0	<1.0	63 <i>0.50</i>	12	28	13	0.3	<1.0	96	1.1	<1.0	<1.0	39	86
B7-0.5	0 to 0.5	<2.0	3.7	150	<1.0	<1.0	58 <i>0.53</i>	12	25	11	0.27	<1.0	88	<1.0	<1.0	<1.0	37	71
B8-0.5	0 to 0.5	<2.0	5.0	180	<1.0	<1.0	72 <i>0.65</i>	15	33	26	1.1	<1.0	110	1.4	<1.0	<1.0	46	100
B9-0.5	0 to 0.5	<2.0	6.4	190	<1.0	<1.0	62 <i>0.82</i>	13	41	18	0.34	<1.0	96	<1.0	<1.0	<1.0	42	130
B10-0.5	0 to 0.5	<2.0	4.8	180	<1.0	<1.0	100 <i>0.79</i>	21	30	28	0.92	<1.0	240 <i>4.1</i>	<1.0	<1.0	<1.0	41	77
B11-0.5	0 to 0.5	<2.0	5.1	100	<1.0	<1.0	260 <i>1.6</i>	36	22	16	0.44	<1.0	610 <i>9.0</i>	1.1	<1.0	<1.0	34	64
B12-0.5	0 to 0.5	<2.0	3.4	140	<1.0	<1.0	67 <i>0.43</i>	13	28	20	<0.10	<1.0	110	1.1	<1.0	<1.0	37	110
B13-0.5	0 to 0.5	<2.0	3.0	110	<1.0	<1.0	71 <i>0.57</i>	15	23	24	<0.099	<1.0	140	1.4	<1.0	<1.0	37	60
B14-0.5	0 to 0.5	<2.0	4.5	140	<1.0	<1.0	66 <i>0.48</i>	14	27	13	0.47	<1.0	120	1.1	<1.0	<1.0	43	66



**TABLE 4**  
**Summary of Petroleum Hydrocarbons Results**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
B1-2.0	1.5 to 2	---	---	<1.0
B1-4.5	4 to 4.5	8.5	17	---
B2-2.0	1.5 to 2	---	---	<1.0
B2-4.5	4 to 4.5	17	81	---
B3-2.0	1.5 to 2	---	---	<1.0
B3-4.5	4 to 4.5	6.6	19	---
B4-2.0	1.5 to 2	---	---	<1.0
B5-2.0	1.5 to 2	---	---	<1.0
B5-4.5	4 to 4.5	11	32	---
B6-2.0	1.5 to 2	---	---	<1.0
B6-4.5	4 to 4.5	5.8	11	---
B7-2.0	1.5 to 2	---	---	<1.0
B7-4.5	4 to 4.5	7.6	17	---
B8-2.0	1.5 to 2	---	---	<1.0
B8-4.5	4 to 4.5	5.3	8.3	---
B9-2.0	1.5 to 2	---	---	<1.0
B9-4.5	4 to 4.5	7.9	15	---
B10-2.0	1.5 to 2	---	---	<1.0
B10-4.5	4 to 4.5	4.5	7.9	---
B11-2.0	1.5 to 2	---	---	<1.0
B11-4.5	4 to 4.5	7.3	20	---
B12-2.0	1.5 to 2	---	---	<1.0
B12-4.5	4 to 4.5	4.2	7.4	---
B13-2.0	1.5 to 2	---	---	<1.0
B13-4.5	4 to 4.5	9.3	18	---
B14-2.0	1.5 to 2	---	---	<1.0
B14-4.5	4 to 4.5	5.2	9.4	---
B15-2.0	1.5 to 2	---	---	<1.0
B15-4.5	4 to 4.5	5.3	11	---

**TABLE 4**  
**Summary of Petroleum Hydrocarbons Results**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
B16-2.0	1.5 to 2	---	---	<1.0
B16-4.5	4 to 4.5	12	40	---
B17-2.0	1.5 to 2	---	---	<1.0
B17-4.5	4 to 4.5	9.7	34	---
B18-2.0	1.5 to 2	---	---	<1.0
B18-4.5	4 to 4.5	6.3	17	---
B19-2.0	1.5 to 2	---	---	<1.0
B19-4.5	4 to 4.5	21	82	---
B20-2.0	1.5 to 2	---	---	<1.0
B20-4.5	4 to 4.5	15	62	---
<b>ESLs</b>				
	Residential	100	100	100
	Commercial/Industrial	110	500	500
	Construction Exposure	900	28,000	2,700

Notes:

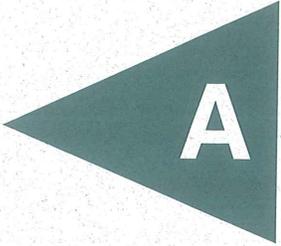
mg/kg = milligrams per kilogram  
TPHd = Total petroleum hydrocarbons as diesel  
TPHmo = Total petroleum hydrocarbons as motor oil  
TPHg = Total petroleum hydrocarbons as gasoline  
ND = Not Detected  
--- = Not analyzed  
< = Not detected above the stated laboratory reporting limit  
ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, December 2013.

**TABLE 5**  
**Summary of NOA Results**  
**Southbound I-280 to Southbound SR-87**  
**San Jose, California**

Sample ID	Sample Depth (feet)	Asbestos Content
B1-2.0	1.5 to 2	ND
B2-2.0	1.5 to 2	<0.25% Chrysotile
B3-2.0	1.5 to 2	ND
B4-2.0	1.5 to 2	ND
B5-2.0	1.5 to 2	ND
B6-2.0	1.5 to 2	ND
B7-2.0	1.5 to 2	<0.25% Chrysotile
B8-2.0	1.5 to 2	ND
B9-2.0	1.5 to 2	ND
B10-2.0	1.5 to 2	7.50% Chrysotile
B11-2.0	1.5 to 2	<0.25% Chrysotile
B12-2.0	1.5 to 2	10.00% Chrysotile
B13-2.0	1.5 to 2	ND
B14-2.0	1.5 to 2	1.50% Chrysotile
B15-2.0	1.5 to 2	<0.25% Chrysotile
B16-2.0	1.5 to 2	3.00% Chrysotile
B17-2.0	1.5 to 2	0.25% Chrysotile
B18-2.0	1.5 to 2	<0.25% Chrysotile
B19-2.0	1.5 to 2	0.50% Chrysotile
B20-2.0	1.5 to 2	1.75% Chrysotile

ND = None detected at 0.25% target analytical sensitivity.

# APPENDIX



A

June 25, 2014

Luann Beadle  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
TEL: 925-371-5900 Ext 403  
FAX: (925) 371-5915

CA-ELAP No.: 2676  
NV Cert. No.: NV-00922

Workorder No.: N012794

RE: SR 280SB/87 SB PM 2.6, E8721-02-10

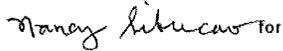
Attention: Luann Beadle

Enclosed are the results for sample(s) received on June 21, 2014 by ASSET 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 (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.  
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 - Las Vegas.

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**CLIENT:** Geocon Consultants, Inc.  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab Order:** N012794  
**Contract No:**

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N012794-001A	B8-0.5	Soil	6/19/2014 10:25:00 AM	6/21/2014	
N012794-002A	B8-2.0	Soil	6/19/2014 10:30:00 AM	6/21/2014	
N012794-003A	B8-4.5	Soil	6/19/2014 10:35:00 AM	6/21/2014	
N012794-004A	B7-0.5	Soil	6/19/2014 10:37:00 AM	6/21/2014	
N012794-005A	B7-2.0	Soil	6/19/2014 10:42:00 AM	6/21/2014	
N012794-006A	B7-4.5	Soil	6/19/2014 10:47:00 AM	6/21/2014	
N012794-007A	B6-0.5	Soil	6/19/2014 10:50:00 AM	6/21/2014	
N012794-008A	B6-2.0	Soil	6/19/2014 10:55:00 AM	6/21/2014	
N012794-009A	B6-4.5	Soil	6/19/2014 11:00:00 AM	6/21/2014	
N012794-010A	B5-0.5	Soil	6/19/2014 11:04:00 AM	6/21/2014	
N012794-011A	B5-2.0	Soil	6/19/2014 11:09:00 AM	6/21/2014	
N012794-012A	B5-4.5	Soil	6/19/2014 11:14:00 AM	6/21/2014	
N012794-013A	B4-0.5	Soil	6/19/2014 11:25:00 AM	6/21/2014	
N012794-014A	B4-2.0	Soil	6/19/2014 11:30:00 AM	6/21/2014	
N012794-015A	B3-0.5	Soil	6/19/2014 11:45:00 AM	6/21/2014	
N012794-016A	B3-2.0	Soil	6/19/2014 11:50:00 AM	6/21/2014	
N012794-017A	B3-4.5	Soil	6/19/2014 11:55:00 AM	6/21/2014	
N012794-018A	B2-0.5	Soil	6/19/2014 12:00:00 PM	6/21/2014	
N012794-019A	B2-2.0	Soil	6/19/2014 12:10:00 PM	6/21/2014	
N012794-020A	B2-4.5	Soil	6/19/2014 12:25:00 PM	6/21/2014	
N012794-021A	B1-0.5	Soil	6/19/2014 12:20:00 PM	6/21/2014	
N012794-022A	B1-2.0	Soil	6/19/2014 12:30:00 PM	6/21/2014	
N012794-023A	B1-4.5	Soil	6/19/2014 12:45:00 PM	6/21/2014	
N012794-024A	B9-0.5	Soil	6/19/2014 1:00:00 PM	6/21/2014	
N012794-025A	B9-2.0	Soil	6/19/2014 1:05:00 PM	6/21/2014	
N012794-026A	B9-4.5	Soil	6/19/2014 1:15:00 PM	6/21/2014	
N012794-027A	B10-0.5	Soil	6/19/2014 1:25:00 PM	6/21/2014	
N012794-028A	B10-2.0	Soil	6/19/2014 1:35:00 PM	6/21/2014	
N012794-029A	B10-4.5	Soil	6/19/2014 1:40:00 PM	6/21/2014	

---

**CLIENT:** Geocon Consultants, Inc.  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab Order:** N012794  
**Contract No:**

---

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N012794-060A	EB1	Water	6/19/2014 9:50:00 AM	6/21/2014	
N012794-061A	EB2	Water	6/19/2014 10:50:00 AM	6/21/2014	
N012794-062A	EB3	Water	6/19/2014 11:50:00 AM	6/21/2014	

---

**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B8-2.0
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 10:30:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-002		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID:	GC4_140623A	QC Batch:	E14VS048	PrepDate:		Analyst:	QBM
GRO		ND	1.0	mg/Kg	1		6/23/2014 05:36 PM
Surr:	Chlorobenzene - d5	95.2	57-134	%REC	1		6/23/2014 05:36 PM

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID:	ICP2_140624A	QC Batch:	45927	PrepDate:	6/23/2014	Analyst:	CEI
Lead		10	5.0	mg/Kg	1		6/24/2014 09:03 AM

---

**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

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B7-0.5
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 10:37:00 AM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-004	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
<b>EPA 7471</b>			<b>EPA 7471A</b>			
RunID: AA1_140623A	QC Batch: 45931				PrepDate: 6/23/2014	Analyst: LCC
Mercury	0.27	0.099		mg/Kg	1	6/23/2014 01:05 PM
<b>ICP METALS</b>						
<b>EPA 3050B</b>			<b>EPA 6010B</b>			
RunID: ICP2_140623A	QC Batch: 45926				PrepDate: 6/23/2014	Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 04:00 PM
Arsenic	3.7	1.0		mg/Kg	1	6/23/2014 04:00 PM
Barium	150	1.0		mg/Kg	1	6/23/2014 04:00 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Chromium	58	1.0		mg/Kg	1	6/23/2014 04:00 PM
Cobalt	12	1.0		mg/Kg	1	6/23/2014 04:00 PM
Copper	25	2.0		mg/Kg	1	6/23/2014 04:00 PM
Lead	11	1.0		mg/Kg	1	6/23/2014 04:00 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Nickel	88	1.0		mg/Kg	1	6/23/2014 04:00 PM
Selenium	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 04:00 PM
Vanadium	37	1.0		mg/Kg	1	6/23/2014 04:00 PM
Zinc	71	1.0		mg/Kg	1	6/23/2014 04:00 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B7-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 10:47:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-006		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
<b>EPA 9045C</b>						
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	7.5	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
<b>EPA 3550B</b>						
<b>EPA 8015B</b>						
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	7.6	1.0		mg/Kg	1	6/23/2014 07:16 PM
ORO	17	1.0		mg/Kg	1	6/23/2014 07:16 PM
Surr: p-Terphenyl	75.0	50-122		%REC	1	6/23/2014 07:16 PM
<b>LEAD BY ICP</b>						
<b>EPA 3050B</b>						
<b>EPA 6010B</b>						
RunID: ICP2_140624A	QC Batch: 45927			PrepDate:	6/23/2014	Analyst: CEI
Lead	11	5.0		mg/Kg	1	6/24/2014 09:19 AM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

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<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B6-2.0
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 10:55:00 AM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-008	

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID: GC4_140623A	QC Batch: E14VS048	PrepDate:	Analyst: <b>QBM</b>		
GRO	ND	1.0	mg/Kg	1	6/23/2014 07:29 PM
Surr: Chlorobenzene - d5	92.7	57-134	%REC	1	6/23/2014 07:29 PM

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140624A	QC Batch: 45927	PrepDate: 6/23/2014	Analyst: <b>CEI</b>		
Lead	14	5.0	mg/Kg	1	6/24/2014 09:22 AM

---

**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

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B5-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:04:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-010		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471**

**EPA 7471A**

RunID: AA1_140623A	QC Batch: 45931				PrepDate: 6/23/2014	Analyst: LCC
Mercury	0.38	0.10		mg/Kg	1	6/23/2014 01:10 PM

**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140623A	QC Batch: 45926				PrepDate: 6/23/2014	Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 04:26 PM
Arsenic	4.9	1.0		mg/Kg	1	6/23/2014 04:26 PM
Barium	150	1.0		mg/Kg	1	6/23/2014 04:26 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 04:26 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 04:26 PM
Chromium	74	1.0		mg/Kg	1	6/23/2014 04:26 PM
Cobalt	14	1.0		mg/Kg	1	6/23/2014 04:26 PM
Copper	29	2.0		mg/Kg	1	6/23/2014 04:26 PM
Lead	13	1.0		mg/Kg	1	6/23/2014 04:26 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 04:26 PM
Nickel	140	1.0		mg/Kg	1	6/23/2014 04:26 PM
Selenium	1.1	1.0		mg/Kg	1	6/24/2014 02:31 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 04:26 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 04:26 PM
Vanadium	43	1.0		mg/Kg	1	6/23/2014 04:26 PM
Zinc	75	1.0		mg/Kg	1	6/23/2014 04:26 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B5-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:14:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-012		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
	<b>EPA 3550B</b>			<b>EPA 8015B</b>		
RunID: GC3_140623A	QC Batch: 45934				PrepDate: 6/23/2014	Analyst: MDM
DRO	11	1.0		mg/Kg	1	6/23/2014 08:08 PM
ORO	32	1.0		mg/Kg	1	6/23/2014 08:08 PM
Surr: p-Terphenyl	81.0	50-122		%REC	1	6/23/2014 08:08 PM
<b>LEAD BY ICP</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140624A	QC Batch: 45927				PrepDate: 6/23/2014	Analyst: CEI
Lead	15	5.0		mg/Kg	1	6/24/2014 09:34 AM

<b>Qualifiers:</b>	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		

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**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

---

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B4-2.0
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 11:30:00 AM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-014	

---

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID: GC4_140623A	QC Batch: E14VS048	PrepDate:	Analyst: <b>QBM</b>		
GRO	ND	1.0	mg/Kg	1	6/23/2014 08:26 PM
Surr: Chlorobenzene - d5	104	57-134	%REC	1	6/23/2014 08:26 PM

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140624A	QC Batch: 45927	PrepDate:	6/23/2014	Analyst: <b>CEI</b>	
Lead	5.8	5.0	mg/Kg	1	6/24/2014 09:38 AM

---

**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

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**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

---

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B3-2.0
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:50:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-016		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID: GC4_140623A	QC Batch: E14VS048	PrepDate:	Analyst: <b>QBM</b>		
GRO	ND	1.0	mg/Kg	1	6/23/2014 11:02 PM
Surr: Chlorobenzene - d5	87.6	57-134	%REC	1	6/23/2014 11:02 PM

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140624A	QC Batch: 45927	PrepDate:	6/23/2014	Analyst: <b>CEI</b>	
Lead	14	5.0	mg/Kg	1	6/24/2014 09:42 AM

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<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B2-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 12:00:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-018		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
	<b>EPA 7471</b>			<b>EPA 7471A</b>		
RunID: AA1_140623A	QC Batch: 45931			PrepDate:	6/23/2014	Analyst: LCC
Mercury	0.48	0.099		mg/Kg	1	6/23/2014 01:24 PM
<b>ICP METALS</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140623A	QC Batch: 45926			PrepDate:	6/23/2014	Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 04:45 PM
Arsenic	4.0	1.0		mg/Kg	1	6/23/2014 04:45 PM
Barium	160	1.0		mg/Kg	1	6/23/2014 04:45 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 04:45 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 04:45 PM
Chromium	76	1.0		mg/Kg	1	6/23/2014 04:45 PM
Cobalt	14	1.0		mg/Kg	1	6/23/2014 04:45 PM
Copper	25	2.0		mg/Kg	1	6/23/2014 04:45 PM
Lead	11	1.0		mg/Kg	1	6/23/2014 04:45 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 04:45 PM
Nickel	120	1.0		mg/Kg	1	6/23/2014 04:45 PM
Selenium	1.2	1.0		mg/Kg	1	6/23/2014 04:45 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 04:45 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 04:45 PM
Vanadium	39	1.0		mg/Kg	1	6/23/2014 04:45 PM
Zinc	66	1.0		mg/Kg	1	6/23/2014 04:45 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B2-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 12:25:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-020		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	8.2	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 3550B</b>		
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	17	1.0		mg/Kg	1	6/23/2014 09:00 PM
ORO	81	1.0		mg/Kg	1	6/23/2014 09:00 PM
Surr: p-Terphenyl	85.9	50-122		%REC	1	6/23/2014 09:00 PM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
RunID: ICP2_140624A	QC Batch: 45927			PrepDate:	6/23/2014	Analyst: CEI
Lead	8.7	5.0		mg/Kg	1	6/24/2014 10:09 AM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B9-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 1:00:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-024		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
	<b>EPA 7471</b>			<b>EPA 7471A</b>		
RunID: AA1_140623A	QC Batch: 45931			PrepDate: 6/23/2014		Analyst: LCC
Mercury	0.34	0.10		mg/Kg	1	6/23/2014 01:29 PM
<b>ICP METALS</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140623A	QC Batch: 45926			PrepDate: 6/23/2014		Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 04:58 PM
Arsenic	6.4	1.0		mg/Kg	1	6/23/2014 04:58 PM
Barium	190	1.0		mg/Kg	1	6/23/2014 04:58 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Chromium	62	1.0		mg/Kg	1	6/23/2014 04:58 PM
Cobalt	13	1.0		mg/Kg	1	6/23/2014 04:58 PM
Copper	41	2.0		mg/Kg	1	6/23/2014 04:58 PM
Lead	18	1.0		mg/Kg	1	6/23/2014 04:58 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Nickel	96	1.0		mg/Kg	1	6/23/2014 04:58 PM
Selenium	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 04:58 PM
Vanadium	42	1.0		mg/Kg	1	6/23/2014 04:58 PM
Zinc	130	1.0		mg/Kg	1	6/23/2014 04:58 PM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B9-4.5
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 1:15:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-026	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	4.6	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 3550B</b>		
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	7.9	1.0		mg/Kg	1	6/23/2014 09:52 PM
ORO	15	1.0		mg/Kg	1	6/23/2014 09:52 PM
Surr: p-Terphenyl	89.1	50-122		%REC	1	6/23/2014 09:52 PM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
RunID: ICP2_140624A	QC Batch: 45927			PrepDate:	6/23/2014	Analyst: CEI
Lead	11	5.0		mg/Kg	1	6/24/2014 10:24 AM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B10-2.0
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 1:35:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-028	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
<b>EPA 9045C</b>						
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	8.1	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>GASOLINE RANGE ORGANICS BY GC/FID</b>						
<b>EPA 8015B</b>						
RunID: GC4_140623A	QC Batch: E14VS048			PrepDate:		Analyst: QBM
GRO	ND	1.0		mg/Kg	1	6/24/2014 01:28 AM
Surr: Chlorobenzene - d5	110	57-134		%REC	1	6/24/2014 01:28 AM
<b>LEAD BY ICP</b>						
<b>EPA 3050B</b>						
<b>EPA 6010B</b>						
RunID: ICP2_140624A	QC Batch: 45927			PrepDate:	6/23/2014	Analyst: CEI
Lead	9.6	5.0		mg/Kg	1	6/24/2014 10:28 AM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B11-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:00:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-030		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
	<b>EPA 7471</b>			<b>EPA 7471A</b>		
RunID: AA1_140623A	QC Batch: 45931			PrepDate: 6/23/2014		Analyst: LCC
Mercury	0.44	0.10		mg/Kg	1	6/23/2014 01:38 PM
<b>ICP METALS</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140623A	QC Batch: 45926			PrepDate: 6/23/2014		Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 05:11 PM
Arsenic	5.1	1.0		mg/Kg	1	6/23/2014 05:11 PM
Barium	100	1.0		mg/Kg	1	6/23/2014 05:11 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 05:11 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 05:11 PM
Chromium	260	1.0		mg/Kg	1	6/23/2014 05:11 PM
Cobalt	36	1.0		mg/Kg	1	6/23/2014 05:11 PM
Copper	22	2.0		mg/Kg	1	6/23/2014 05:11 PM
Lead	16	1.0		mg/Kg	1	6/23/2014 05:11 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 05:11 PM
Nickel	610	1.0		mg/Kg	1	6/23/2014 05:11 PM
Selenium	1.1	1.0		mg/Kg	1	6/24/2014 02:39 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 05:11 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 05:11 PM
Vanadium	34	1.0		mg/Kg	1	6/23/2014 05:11 PM
Zinc	64	1.0		mg/Kg	1	6/23/2014 05:11 PM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B11-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:10:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-032		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	7.8	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 3550B</b>		
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	7.3	1.0		mg/Kg	1	6/23/2014 10:44 PM
ORO	20	1.0		mg/Kg	1	6/23/2014 10:44 PM
Surr: p-Terphenyl	72.2	50-122		%REC	1	6/23/2014 10:44 PM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: CEI
Lead	9.9	5.0		mg/Kg	1	6/24/2014 10:59 AM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab ID:** N012794-034

**Client Sample ID:** B12-2.0  
**Collection Date:** 6/19/2014 2:12:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>GASOLINE RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 8015B</b>		
RunID: GC4_140624A	QC Batch: E14VS049			PrepDate:	Analyst: <b>QBM</b>	
GRO	ND	1.0		mg/Kg	1	6/24/2014 12:08 PM
Surr: Chlorobenzene - d5	102	57-134		%REC	1	6/24/2014 12:08 PM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: <b>CEI</b>
Lead	ND	5.0		mg/Kg	1	6/24/2014 11:22 AM
				<b>EPA 6010B</b>		

**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

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B13-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:15:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-036		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471**

**EPA 7471A**

RunID: AA1_140623A	QC Batch: 45931	PrepDate: 6/23/2014	Analyst: LCC
Mercury	ND	0.099	mg/Kg

**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140623A	QC Batch: 45926	PrepDate: 6/23/2014	Analyst: SF
Antimony	ND	2.0	mg/Kg
Arsenic	3.0	1.0	mg/Kg
Barium	110	1.0	mg/Kg
Beryllium	ND	1.0	mg/Kg
Cadmium	ND	1.0	mg/Kg
Chromium	71	1.0	mg/Kg
Cobalt	15	1.0	mg/Kg
Copper	23	2.0	mg/Kg
Lead	24	1.0	mg/Kg
Molybdenum	ND	1.0	mg/Kg
Nickel	140	1.0	mg/Kg
Selenium	1.4	1.0	mg/Kg
Silver	ND	1.0	mg/Kg
Thallium	ND	1.0	mg/Kg
Vanadium	37	1.0	mg/Kg
Zinc	60	1.0	mg/Kg

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B13-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:25:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-038		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
<b>EPA 9045C</b>						
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	5.8	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
<b>EPA 3550B</b>						
<b>EPA 8015B</b>						
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	9.3	1.0		mg/Kg	1	6/24/2014 02:36 AM
ORO	18	1.0		mg/Kg	1	6/24/2014 02:36 AM
Surr: p-Terphenyl	75.8	50-122		%REC	1	6/24/2014 02:36 AM
<b>LEAD BY ICP</b>						
<b>EPA 3050B</b>						
<b>EPA 6010B</b>						
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: CEI
Lead	7.9	5.0		mg/Kg	1	6/24/2014 11:41 AM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab ID:** N012794-040

**Client Sample ID:** B14-2.0  
**Collection Date:** 6/19/2014 2:50:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID: GC4_140624A	QC Batch: E14VS049	PrepDate:	Analyst: QBM
GRO	ND	1.0	mg/Kg
Surr: Chlorobenzene - d5	73.6	57-134	%REC

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140624A	QC Batch: 45928	PrepDate: 6/23/2014	Analyst: CEI
Lead	14	5.0	mg/Kg

**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

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B15-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:47:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-042		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
	<b>EPA 7471</b>			<b>EPA 7471A</b>		
RunID: AA1_140623A	QC Batch: 45931				PrepDate: 6/23/2014	Analyst: LCC
Mercury	3.7	1.0		mg/Kg	10	6/23/2014 02:51 PM
<b>ICP METALS</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140623A	QC Batch: 45926				PrepDate: 6/23/2014	Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 06:00 PM
Arsenic	4.7	1.0		mg/Kg	1	6/23/2014 06:00 PM
Barium	160	1.0		mg/Kg	1	6/23/2014 06:00 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 06:00 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 06:00 PM
Chromium	89	1.0		mg/Kg	1	6/23/2014 06:00 PM
Cobalt	17	1.0		mg/Kg	1	6/23/2014 06:00 PM
Copper	31	2.0		mg/Kg	1	6/23/2014 06:00 PM
Lead	13	1.0		mg/Kg	1	6/23/2014 06:00 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 06:00 PM
Nickel	150	1.0		mg/Kg	1	6/23/2014 06:00 PM
Selenium	1.1	1.0		mg/Kg	1	6/23/2014 06:00 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 06:00 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 06:00 PM
Vanadium	46	1.0		mg/Kg	1	6/23/2014 06:00 PM
Zinc	76	1.0		mg/Kg	1	6/23/2014 06:00 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab ID:** N012794-044

**Client Sample ID:** B15-4.5  
**Collection Date:** 6/19/2014 2:57:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
<b>EPA 3550B</b>			<b>EPA 8015B</b>			
RunID: GC3_140623A	QC Batch: 45934				PrepDate: 6/23/2014	Analyst: MDM
DRO	5.3	1.0		mg/Kg	1	6/24/2014 03:28 AM
ORO	11	1.0		mg/Kg	1	6/24/2014 03:28 AM
Surr: p-Terphenyl	81.7	50-122		%REC	1	6/24/2014 03:28 AM
<b>LEAD BY ICP</b>						
<b>EPA 3050B</b>			<b>EPA 6010B</b>			
RunID: ICP2_140624A	QC Batch: 45928				PrepDate: 6/23/2014	Analyst: CEI
Lead	6.1	5.0		mg/Kg	1	6/24/2014 11:57 AM

**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

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B16-2.0
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 3:15:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-046		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B**

RunID: GC4_140624A	QC Batch: E14VS049	PrepDate:	Analyst: QBM		
GRO	ND	1.0	mg/Kg	1	6/24/2014 11:39 AM
Surr: Chlorobenzene - d5	92.8	57-134	%REC	1	6/24/2014 11:39 AM

**LEAD BY ICP**

**EPA 3050B**

**EPA 6010B**

RunID: ICP2_140624A	QC Batch: 45928	PrepDate: 6/23/2014	Analyst: CEI		
Lead	9.7	5.0	mg/Kg	1	6/24/2014 12:01 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B17-0.5
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 3:12:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-048	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
<b>EPA 7471</b>			<b>EPA 7471A</b>			
RunID: AA1_140623A	QC Batch: 45931				PrepDate: 6/23/2014	Analyst: LCC
Mercury	0.52	0.099		mg/Kg	1	6/23/2014 02:06 PM
<b>ICP METALS</b>						
<b>EPA 3050B</b>			<b>EPA 6010B</b>			
RunID: ICP2_140623A	QC Batch: 45926				PrepDate: 6/23/2014	Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 06:13 PM
Arsenic	3.4	1.0		mg/Kg	1	6/23/2014 06:13 PM
Barium	190	1.0		mg/Kg	1	6/23/2014 06:13 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 06:13 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 06:13 PM
Chromium	70	1.0		mg/Kg	1	6/23/2014 06:13 PM
Cobalt	14	1.0		mg/Kg	1	6/23/2014 06:13 PM
Copper	28	2.0		mg/Kg	1	6/23/2014 06:13 PM
Lead	12	1.0		mg/Kg	1	6/23/2014 06:13 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 06:13 PM
Nickel	96	1.0		mg/Kg	1	6/23/2014 06:13 PM
Selenium	1.1	1.0		mg/Kg	1	6/23/2014 06:13 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 06:13 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 06:13 PM
Vanadium	45	1.0		mg/Kg	1	6/23/2014 06:13 PM
Zinc	67	1.0		mg/Kg	1	6/23/2014 06:13 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B17-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 3:22:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-050		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	8.2	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 3550B</b>		
				<b>EPA 8015B</b>		
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	9.7	1.0		mg/Kg	1	6/24/2014 04:20 AM
ORO	34	1.0		mg/Kg	1	6/24/2014 04:20 AM
Surr: p-Terphenyl	94.0	50-122		%REC	1	6/24/2014 04:20 AM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
				<b>EPA 6010B</b>		
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: CEI
Lead	8.3	5.0		mg/Kg	1	6/24/2014 12:28 PM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B18-2.0
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 3:35:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-052	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>GASOLINE RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 8015B</b>		
RunID: GC4_140624A	QC Batch: E14VS049			PrepDate:		Analyst: <b>QBM</b>
GRO	ND	1.0		mg/Kg	1	6/24/2014 02:35 PM
Surr: Chlorobenzene - d5	89.8	57-134		%REC	1	6/24/2014 02:35 PM
<b>LEAD BY ICP</b>						
				<b>EPA 6010B</b>		
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: <b>CEI</b>
Lead	7.6	5.0		mg/Kg	1	6/24/2014 12:32 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B19-0.5
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 3:32:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-054	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY COLD VAPOR TECHNIQUE</b>						
	<b>EPA 7471</b>			<b>EPA 7471A</b>		
RunID: AA1_140623A	QC Batch: 45931			PrepDate: 6/23/2014		Analyst: LCC
Mercury	0.56	0.10		mg/Kg	1	6/23/2014 02:11 PM
<b>ICP METALS</b>						
	<b>EPA 3050B</b>			<b>EPA 6010B</b>		
RunID: ICP2_140623A	QC Batch: 45926			PrepDate: 6/23/2014		Analyst: SF
Antimony	ND	2.0		mg/Kg	1	6/23/2014 06:25 PM
Arsenic	4.2	1.0		mg/Kg	1	6/23/2014 06:25 PM
Barium	150	1.0		mg/Kg	1	6/23/2014 06:25 PM
Beryllium	ND	1.0		mg/Kg	1	6/23/2014 06:25 PM
Cadmium	ND	1.0		mg/Kg	1	6/23/2014 06:25 PM
Chromium	80	1.0		mg/Kg	1	6/23/2014 06:25 PM
Cobalt	15	1.0		mg/Kg	1	6/23/2014 06:25 PM
Copper	30	2.0		mg/Kg	1	6/23/2014 06:25 PM
Lead	13	1.0		mg/Kg	1	6/23/2014 06:25 PM
Molybdenum	ND	1.0		mg/Kg	1	6/23/2014 06:25 PM
Nickel	130	1.0		mg/Kg	1	6/23/2014 06:25 PM
Selenium	1.1	1.0		mg/Kg	1	6/23/2014 06:25 PM
Silver	ND	1.0		mg/Kg	1	6/23/2014 06:25 PM
Thallium	ND	1.0		mg/Kg	1	6/23/2014 06:25 PM
Vanadium	44	1.0		mg/Kg	1	6/23/2014 06:25 PM
Zinc	84	1.0		mg/Kg	1	6/23/2014 06:25 PM

<b>Qualifiers:</b>	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	

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B19-4.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 3:42:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-056		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	8.2	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>DIESEL &amp; MOTOR OIL RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 3550B</b>		<b>EPA 8015B</b>
RunID: GC3_140623A	QC Batch: 45934			PrepDate:	6/23/2014	Analyst: MDM
DRO	21	1.0		mg/Kg	1	6/24/2014 05:11 AM
ORO	82	1.0		mg/Kg	1	6/24/2014 05:11 AM
Surr: p-Terphenyl	82.8	50-122		%REC	1	6/24/2014 05:11 AM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		<b>EPA 6010B</b>
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: CEI
Lead	6.9	5.0		mg/Kg	1	6/24/2014 12:44 PM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

<b>CLIENT:</b> Geocon Consultants, Inc.	<b>Client Sample ID:</b> B20-2.0
<b>Lab Order:</b> N012794	<b>Collection Date:</b> 6/19/2014 3:45:00 PM
<b>Project:</b> SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b> SOIL
<b>Lab ID:</b> N012794-058	

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>PH</b>						
				<b>EPA 9045C</b>		
RunID: WETCHEM_140624A	QC Batch: R93891			PrepDate:		Analyst: LCC
pH	8.0	0.10		pH Units	1	6/24/2014
Temp. at time of pH Analysis	25	0		pH Units	1	6/24/2014
<b>GASOLINE RANGE ORGANICS BY GC/FID</b>						
				<b>EPA 8015B</b>		
RunID: GC4_140624A	QC Batch: E14VS049			PrepDate:		Analyst: QBM
GRO	ND	1.0		mg/Kg	1	6/24/2014 06:02 PM
Surr: Chlorobenzene - d5	96.0	57-134		%REC	1	6/24/2014 06:02 PM
<b>LEAD BY ICP</b>						
				<b>EPA 3050B</b>		
RunID: ICP2_140624A	QC Batch: 45928			PrepDate:	6/23/2014	Analyst: CEI
Lead	9.7	5.0		mg/Kg	1	6/24/2014 12:47 PM

<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	EB1
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 9:50:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N012794-060		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>ICP METALS</b>						
	<b>EPA 3010A</b>		<b>EPA 6010B</b>			
RunID: ICP2_140624C	QC Batch: 45929			PrepDate: 6/24/2014		Analyst: CEI
Lead	ND	0.0050		mg/L	1	6/24/2014 04:34 PM

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<b>Qualifiers:</b>	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		

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**ANALYTICAL RESULTS**

Print Date: 25-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	EB3
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:50:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N012794-062		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>ICP METALS</b>						
	<b>EPA 3010A</b>		<b>EPA 6010B</b>			
RunID: ICP2_140624C	QC Batch: 45929			PrepDate: 6/24/2014		Analyst: CEI
Lead	ND	0.0050		mg/L	1	6/24/2014 05:09 PM

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<b>Qualifiers:</b>	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		

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**ANALYTICAL QC SUMMARY REPORT**

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** N012794

**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 6010\_S

Sample ID	MB2-45926	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93879
Client ID:	PBS	Batch ID:	45926	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/23/2014	SeqNo:	1796565
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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-45926	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93879
Client ID:	LCSS	Batch ID:	45926	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/23/2014	SeqNo:	1796566
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	23.429	2.0	25.00	0	93.7	80	120				
Arsenic	23.910	1.0	25.00	0	95.6	80	120				
Barium	24.671	1.0	25.00	0	98.7	80	120				
Beryllium	24.445	1.0	25.00	0	97.8	80	120				
Cadmium	24.076	1.0	25.00	0	96.3	80	120				
Chromium	23.992	1.0	25.00	0	96.0	80	120				
Cobalt	24.945	1.0	25.00	0	99.8	80	120				
Copper	25.111	2.0	25.00	0	100	80	120				
Lead	24.819	1.0	25.00	0	99.3	80	120				
Molybdenum	24.537	1.0	25.00	0	98.1	80	120				
Nickel	24.566	1.0	25.00	0	98.3	80	120				
Selenium	22.510	1.0	25.00	0	90.0	80	120				
Silver	24.114	1.0	25.00	0	96.5	80	120				
Thallium	25.130	1.0	25.00	0	101	80	120				
Vanadium	24.376	1.0	25.00	0	97.5	80	120				
Zinc	23.898	1.0	25.00	0	95.6	80	120				

**Qualifiers:**

B Analyte detected in the associated Method Blank  
 ND Not Detected at the Reporting Limit  
 DO Surrogate Diluted Out

E Value above quantitation range  
 R RPD outside accepted recovery limits  
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H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference

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**ANALYTICAL QC SUMMARY REPORT**

CLIENT: Geocon Consultants, Inc.  
 Work Order: N012794

Project: SR 280SB/87 SB PM 2.6, E8721-02-10

TestCode: 6010\_S

Sample ID	N012794-001A-MS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93879
Client ID:	ZZZZZZ	Batch ID:	45926	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/23/2014	SeqNo:	1796571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.095	1.0	24.88	0.2778	59.6	75	125				S
Nickel	118.417	1.0	24.88	107.1	45.6	75	125				S
Selenium	17.758	1.0	24.88	1.408	65.7	75	125				S
Silver	13.797	1.0	24.88	0	55.5	75	125				S
Thallium	15.957	1.0	24.88	0	64.1	75	125				S
Vanadium	68.924	1.0	24.88	46.02	92.1	75	125				S
Zinc	113.825	1.0	24.88	104.0	39.6	75	125				S

Sample ID	N012794-001A-MSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93879
Client ID:	ZZZZZZ	Batch ID:	45926	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/23/2014	SeqNo:	1796572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0	25.04	0	0	75	125	0	0	20	S
Arsenic	24.139	1.0	25.04	5.040	76.3	75	125	22.75	5.91	20	S
Barium	200.298	1.0	25.04	177.8	90.0	75	125	213.6	6.45	20	S
Beryllium	19.745	1.0	25.04	0.4243	77.2	75	125	18.64	5.78	20	S
Cadmium	18.696	1.0	25.04	0	74.7	75	125	17.11	8.86	20	S
Chromium	85.502	1.0	25.04	72.26	52.9	75	125	85.50	0.00358	20	S
Cobalt	33.068	1.0	25.04	14.85	72.8	75	125	31.71	4.19	20	S
Copper	53.310	2.0	25.04	33.03	81.0	75	125	52.04	2.40	20	S
Lead	35.849	1.0	25.04	26.10	38.9	75	125	34.26	4.53	20	S
Molybdenum	15.915	1.0	25.04	0.2778	62.5	75	125	15.10	5.29	20	S
Nickel	123.939	1.0	25.04	107.1	67.4	75	125	118.4	4.56	20	S
Selenium	18.913	1.0	25.04	1.408	69.9	75	125	17.76	6.30	20	S
Silver	15.012	1.0	25.04	0	60.0	75	125	13.80	8.43	20	S
Thallium	17.499	1.0	25.04	0	69.9	75	125	15.96	9.22	20	S
Vanadium	70.360	1.0	25.04	46.02	97.2	75	125	68.92	2.06	20	S
Zinc	116.504	1.0	25.04	104.0	50.0	75	125	113.8	2.33	20	S

**Qualifiers:**

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- E Value above quantitation range
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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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**ANALYTICAL QC SUMMARY REPORT**

**CLIENT:** Gecon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 6010\_S

Sample ID: **N012794-030A-MS**    SampType: **MS**    TestCode: **6010\_S**    Units: **mg/Kg**    Prep Date: **6/23/2014**    RunNo: **93879**  
 Client ID: **ZZZZZ**    Batch ID: **45926**    TestNo: **EPA 6010B**    EPA **3050B**    Analysis Date: **6/23/2014**    SeqNo: **1796588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	16.580	1.0	24.88	0	66.7	75	125				S
Nickel	639.489	1.0	24.88	610.0	119	75	125				
Selenium	20.304	1.0	24.88	1.196	76.8	75	125				
Silver	16.712	1.0	24.88	0	67.2	75	125				S
Thallium	18.261	1.0	24.88	0	73.4	75	125				S
Vanadium	55.711	1.0	24.88	33.77	88.2	75	125				
Zinc	86.269	1.0	24.88	64.18	88.8	75	125				

**Qualifiers:**  
 B Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_SPB

CLIENT: Geocon Consultants, Inc.  
 Work Order: N012794  
 Project: SR 280SB/87 SB PM 2.6, E8721-02-10

Sample ID	N012794-003A-MSD	Sample Type	MSD	TestCode	6010_SPB	Units	mg/Kg	Prep Date	6/23/2014	RunNo	93893												
Client ID	ZZZZZZ	Batch ID	45927	TestNo	EPA 6010B	EPA	3050B	Analysis Date	6/24/2014	SeqNo	1796849												
Analyte	Lead	Result	25.455	PQL	5.0	SPK value	24.91	SPK Ref Val	5.933	%REC	78.4	LowLimit	75	HighLimit	125	RPD Ref Val	26.23	%RPD	3.01	RPDLimit	20	Qual	

Sample ID	N012794-017A-DUP	Sample Type	DUP	TestCode	6010_SPB	Units	mg/Kg	Prep Date	6/23/2014	RunNo	93893												
Client ID	ZZZZZZ	Batch ID	45927	TestNo	EPA 6010B	EPA	3050B	Analysis Date	6/24/2014	SeqNo	1796862												
Analyte	Lead	Result	11.634	PQL	5.0	SPK value	11.01	SPK Ref Val	5.50	%REC	11.01	LowLimit	75	HighLimit	125	RPD Ref Val	26.23	%RPD	5.50	RPDLimit	20	Qual	

Sample ID	N012794-017A-MS	Sample Type	MS	TestCode	6010_SPB	Units	mg/Kg	Prep Date	6/23/2014	RunNo	93893												
Client ID	ZZZZZZ	Batch ID	45927	TestNo	EPA 6010B	EPA	3050B	Analysis Date	6/24/2014	SeqNo	1796865												
Analyte	Lead	Result	29.053	PQL	5.0	SPK value	24.98	SPK Ref Val	11.01	%REC	72.2	LowLimit	75	HighLimit	125	RPD Ref Val	26.23	%RPD	72.2	RPDLimit	20	Qual	S

**Qualifiers:**

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

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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 6010\_SPB

Sample ID	N012794-032A-MSD	SampType:	MSD	TestCode:	6010_SPB	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93893		
Client ID:	ZZZZZZ	Batch ID:	45928	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/24/2014	SeqNo:	1796885		
Analyte		Result	27.168	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead				5.0	24.88	9.895	69.4	75	125	27.67	1.82	20	S

Sample ID	N012794-047A-DUP	SampType:	DUP	TestCode:	6010_SPB	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93893		
Client ID:	ZZZZZZ	Batch ID:	45928	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/24/2014	SeqNo:	1796935		
Analyte		Result	11.285	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead				5.0				11.15		1.18	20		

Sample ID	N012794-047A-MS	SampType:	MS	TestCode:	6010_SPB	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93893		
Client ID:	ZZZZZZ	Batch ID:	45928	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	6/24/2014	SeqNo:	1796938		
Analyte		Result	29.691	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead				5.0	24.94	11.15	74.3	75	125				S

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
DO	Surrogate Diluted Out	Calculations are based on raw values	
<b>Advanced Technology Laboratories, Inc.</b>			
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		H	Holding times for preparation or analysis exceeded
		S	Spike/Surrogate outside of limits due to matrix interference
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**ANALYTICAL QC SUMMARY REPORT**

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode: 7471\_S**

Sample ID	MB2-45931	SampType:	MBLK	TestCode:	7471_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93875		
Client ID:	PBS	Batch ID:	45931	TestNo:	EPA 7471A	EPA	7471	Analysis Date:	6/23/2014	SeqNo:	1796272		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			ND	0.10									

Sample ID	MB2-45931	SampType:	MBLK	TestCode:	7471_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93875		
Client ID:	PBS	Batch ID:	45931	TestNo:	EPA 7471A	EPA	7471	Analysis Date:	6/23/2014	SeqNo:	1796273		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			ND	0.10									

Sample ID	LCS-45931	SampType:	LCS	TestCode:	7471_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93875		
Client ID:	LCSS	Batch ID:	45931	TestNo:	EPA 7471A	EPA	7471	Analysis Date:	6/23/2014	SeqNo:	1796274		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			0.382	0.10	0.4188	0	91.3	80	120				

Sample ID	N012794-001A-MS	SampType:	MS	TestCode:	7471_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93875		
Client ID:	ZZZZZZ	Batch ID:	45931	TestNo:	EPA 7471A	EPA	7471	Analysis Date:	6/23/2014	SeqNo:	1796275		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			0.835	0.099	0.4126	1.113	-67.3	75	125				S

Sample ID	N012794-001A-MSD	SampType:	MSD	TestCode:	7471_S	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93875		
Client ID:	ZZZZZZ	Batch ID:	45931	TestNo:	EPA 7471A	EPA	7471	Analysis Date:	6/23/2014	SeqNo:	1796276		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			0.836	0.099	0.4126	1.113	-67.1	75	125	0.8351	0.101	20	S

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

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**ANALYTICAL QC SUMMARY REPORT**

**CLIENT:** Gecon Consultants, Inc.

**Work Order:** N012794

**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 8015\_S\_DM LL

Sample ID	LCS-45934	SampType:	LCS	TestCode:	8015_S_DM L	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93882
Client ID:	LCSS	Batch ID:	45934	TestNo:	EPA 8015B	EPA	3550B	Analysis Date:	6/23/2014	SeqNo:	1796639
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	71.863	1.0	83.30	0	86.3	53	120				
Surr: p-Terphenyl	6.952		6.670		104	50	122				

Sample ID	N012794-003A-DUP	SampType:	DUP	TestCode:	8015_S_DM L	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93882
Client ID:	ZZZZZZ	Batch ID:	45934	TestNo:	EPA 8015B	EPA	3550B	Analysis Date:	6/23/2014	SeqNo:	1796642
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	4.147	1.0						5.325	24.9	20	R
ORO	5.834	1.0						8.311	35.0	20	R
Surr: p-Terphenyl	6.813		6.659		102	50	122		0		

Sample ID	N012794-003A-MS	SampType:	MS	TestCode:	8015_S_DM L	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93882
Client ID:	ZZZZZZ	Batch ID:	45934	TestNo:	EPA 8015B	EPA	3550B	Analysis Date:	6/23/2014	SeqNo:	1796652
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	71.788	1.0	83.49	5.325	79.6	24	120				
Surr: p-Terphenyl	6.914		6.686		103	50	122				

Sample ID	N012794-003A-MSD	SampType:	MSD	TestCode:	8015_S_DM L	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93882
Client ID:	ZZZZZZ	Batch ID:	45934	TestNo:	EPA 8015B	EPA	3550B	Analysis Date:	6/23/2014	SeqNo:	1796653
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	70.666	1.0	83.16	5.325	78.6	24	120	71.79	1.58	20	
Surr: p-Terphenyl	6.888		6.659		103	50	122		0		

Sample ID	MB1-45934	SampType:	MBLK	TestCode:	8015_S_DM L	Units:	mg/Kg	Prep Date:	6/23/2014	RunNo:	93882
Client ID:	PBS	Batch ID:	45934	TestNo:	EPA 8015B	EPA	3550B	Analysis Date:	6/23/2014	SeqNo:	1796835
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

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

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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode: 8015GAS\_S**

Sample ID	E140623LCS	SampType:	LCS	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:	RunNo:	93877			
Client ID:	LCSS	Batch ID:	E14VS048	TestNo:	EPA 8015B			Analysis Date:	6/23/2014	SeqNo:	1796417		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		5.151		1.0	5.000	0	103	76	130				
Surr:	Chlorobenzene - d5	105.030			100.0		105	57	134				

Sample ID	E140623MB1	SampType:	MBLK	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:	RunNo:	93877			
Client ID:	PBS	Batch ID:	E14VS048	TestNo:	EPA 8015B			Analysis Date:	6/23/2014	SeqNo:	1796418		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		0.068		1.0			97.1	57	134				
Surr:	Chlorobenzene - d5	97.062			100.0								

Sample ID	N012786-001AMS	SampType:	MS	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:	RunNo:	93877			
Client ID:	ZZZZZZ	Batch ID:	E14VS048	TestNo:	EPA 8015B			Analysis Date:	6/23/2014	SeqNo:	1796428		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		5.043		1.0	5.000	0.07400	99.4	53	136				
Surr:	Chlorobenzene - d5	109.816			100.0		110	57	134				

Sample ID	N012786-001AMSD	SampType:	MSD	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:	RunNo:	93877			
Client ID:	ZZZZZZ	Batch ID:	E14VS048	TestNo:	EPA 8015B			Analysis Date:	6/23/2014	SeqNo:	1796429		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		5.155		1.0	5.000	0.07400	102	53	136	5.043	2.20	20	
Surr:	Chlorobenzene - d5	107.645			100.0		108	57	134		0		

Sample ID	N012794-005ADUP	SampType:	DUP	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:	RunNo:	93877			
Client ID:	ZZZZZZ	Batch ID:	E14VS048	TestNo:	EPA 8015B			Analysis Date:	6/23/2014	SeqNo:	1796655		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		0.057		1.0						0.04700	0	20	

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

**Advanced Technology Laboratories, Inc.**  
 dba **ASSET Laboratories**  
 Calculations are based on raw values  
 3151 W. Post Rd, Las Vegas, NV 89118  
 P: 702.307.2659 F: 702.307.2691  
[www.assetlaboratories.com](http://www.assetlaboratories.com)

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS\_S

CLIENT: Gecon Consultants, Inc.

Work Order: N012794

Project: SR 280SB/87 SB PM 2.6, E8721-02-10

Sample ID	E140624LCS	SampType:	LCS	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:		RunNo:	93905		
Client ID:	LCSS	Batch ID:	E14VS049	TestNo:	EPA 8015B			Analysis Date:	6/24/2014	SeqNo:	1797162		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		5.277		1.0	5.000	0	106	76	130				
Surr:	Chlorobenzene - d5	102.906			100.0		103	57	134				

Sample ID	E140624MB1	SampType:	MBLK	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:		RunNo:	93905		
Client ID:	PBS	Batch ID:	E14VS049	TestNo:	EPA 8015B			Analysis Date:	6/24/2014	SeqNo:	1797163		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		0.061		1.0			93.3	57	134				
Surr:	Chlorobenzene - d5	93.312			100.0								

Sample ID	N012794-034ADUP	SampType:	DUP	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:		RunNo:	93905		
Client ID:	ZZZZZ	Batch ID:	E14VS049	TestNo:	EPA 8015B			Analysis Date:	6/24/2014	SeqNo:	1797172		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		0.035		1.0			104	57	134	0.03300	0	20	
Surr:	Chlorobenzene - d5	104.201			100.0						0		

Sample ID	N012794-046AMS	SampType:	MS	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:		RunNo:	93905		
Client ID:	ZZZZZ	Batch ID:	E14VS049	TestNo:	EPA 8015B			Analysis Date:	6/24/2014	SeqNo:	1797173		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		5.131		1.0	5.000	0.04500	102	53	136				
Surr:	Chlorobenzene - d5	100.991			100.0		101	57	134				

Sample ID	N012794-046AMSD	SampType:	MSD	TestCode:	8015GAS_S	Units:	mg/Kg	Prep Date:		RunNo:	93905		
Client ID:	ZZZZZ	Batch ID:	E14VS049	TestNo:	EPA 8015B			Analysis Date:	6/24/2014	SeqNo:	1797174		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO		4.935		1.0	5.000	0.04500	97.8	53	136	5.131	3.89	20	

**Qualifiers:**

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

**Advanced Technology Laboratories, Inc.**  
**dba ASSET Laboratories**

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# ANALYTICAL QC SUMMARY REPORT

TestCode: 9045\_S

CLIENT: Geocon Consultants, Inc.  
 Work Order: N012794  
 Project: SR 280SB/87 SB PM 2.6, E8721-02-10

Sample ID: N012794-032A-DUP	Sample Type: DUP	TestCode: 9045_S	Units: pH Units	Prep Date:	RunNo: 93891						
Client ID: ZZZZZZ	Batch ID: R93891	TestNo: EPA 9045C		Analysis Date: 6/24/2014	SeqNo: 1796815						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.760	0.10						7.780	0.257	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

Sample ID: N012794-058A-DUP	Sample Type: DUP	TestCode: 9045_S	Units: pH Units	Prep Date:	RunNo: 93891						
Client ID: ZZZZZZ	Batch ID: R93891	TestNo: EPA 9045C		Analysis Date: 6/24/2014	SeqNo: 1796825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.960	0.10						8.030	0.876	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

**Qualifiers:**

B Analyte detected in the associated Method Blank  
 ND Not Detected at the Reporting Limit  
 DO Surrogate Diluted Out

**Advanced Technology Laboratories, Inc.**  
 dba **ASSET Laboratories**

E Value above quantitation range  
 R RPD outside accepted recovery limits  
 Calculations are based on raw values  
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[www.assetlaboratories.com](http://www.assetlaboratories.com)

H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference

# CHAIN OF CUSTODY RECORD

**ASSET Laboratories**  
 3151-3153 W. Post Rd.  
 Las Vegas, NV 89118  
 Tel: (702) 307-2659 • Fax: (702) 307-2691

**FOR LABORATORY USE ONLY**

Method of Transport:  CHILLED  4 SEALED

Client: ATL

1. CHILLED  4 SEALED  Y  N

2. HEADSPACE (VOA)  N  # OF SPLS MATCH COC  Y  N

3. CONTAINER INTACT  Y  N  6 PRESERVED  Y  N

Sample Condition Upon Receipt

Sample: *10/20/14* Date: *10/20/14*

Received by: *[Signature]* Date: *10/20/14* Time: *1500*

Received by: *[Signature]* Date: *10/21/14* Time: *1500*

Received by: *[Signature]* Date: *10/21/14* Time: *1500*

Project Name: SR 280SB187 SB PM 2.6 Project #: E8721-02-10

City: Livermore State: CA Zip Code: 94550

Address: 6671 Brisa Street

City: Livermore State: CA Zip: *94550*

Special Instructions/Comments:  
 Caltrans Contract 04A4336  
 48-hr TAT  
 Homogenize metals samples

QA/QC

RTNE	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>
SWRCB	<input type="checkbox"/>
Logcode	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

Container(s) TAT # Type

WATER 1 17 T C

GROUND WATER

WASTEWATER

SOIL

Matrix

Matrix	TPH (9015M)	TPH (9015M)	TPH (9045)	Total (90100)	GA 17 Metals
WATER	X	X	X	X	X
GROUND WATER	X	X	X	X	X
WASTEWATER	X	X	X	X	X
SOIL	X	X	X	X	X

Bill To: *[Signature]* Date: *10/20/14*

Attn: *[Signature]* Date: *10/20/14*

Co: *[Signature]* Date: *10/20/14*

Addr: *[Signature]* Date: *10/20/14*

City: *[Signature]* State: *[Signature]* Zip: *[Signature]*

Send Report To: *[Signature]* Date: *10/20/14*

Attn: *[Signature]* Date: *10/20/14*

Co: *[Signature]* Date: *10/20/14*

Addr: *[Signature]* Date: *10/20/14*

City: *[Signature]* State: *[Signature]* Zip: *[Signature]*

Sample/Records: *[Signature]* Date: *10/20/14*

Project Mgr./Submitter: *[Signature]* Date: *10/20/14*

Print Name: *[Signature]* Date: *10/20/14*

Signature: *[Signature]* Date: *10/20/14*

Sample Description

LAB USE ONLY	Sample ID / Location	Date	Time
<i>NS12794-21</i>	<i>B2-4.5</i>	<i>6/17/14</i>	<i>1225</i>
<i>-22</i>	<i>B1-0.5</i>		<i>1220</i>
<i>-23</i>	<i>2.0</i>		<i>1230</i>
<i>-24</i>	<i>4.5</i>		<i>1245</i>
<i>-25</i>	<i>B9-0.5</i>		<i>1300</i>
<i>-26</i>	<i>2.0</i>		<i>1305</i>
<i>-27</i>	<i>4.5</i>		<i>1315</i>
<i>-28</i>	<i>B10-0.5</i>		<i>1325</i>
<i>-29</i>	<i>2.0</i>		<i>1335</i>
<i>-30</i>	<i>4.5</i>		<i>1340</i>
<i>-31</i>	<i>B11-0.5</i>		<i>1400</i>
<i>-32</i>	<i>2.0</i>		<i>1405</i>
<i>-33</i>	<i>B12-0.5</i>		<i>1410</i>
<i>-34</i>	<i>4.5</i>		<i>1407</i>
<i>-35</i>	<i>2.0</i>		<i>1410</i>
<i>-36</i>	<i>4.5</i>		<i>1417</i>
<i>-37</i>	<i>B13-0.5</i>		<i>1415</i>
<i>-38</i>	<i>2.0</i>		<i>1420</i>
<i>-39</i>	<i>4.5</i>		<i>1425</i>
<i>-40</i>	<i>B14-0.5</i>		<i>1440</i>

TAT:  A = Overnight 5-24 hrs  B = Emergency Next Workday  C = Critical 2 Workdays  D = Urgent 3 Workdays  E = Routine 7 Workdays

Preservatives: H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 7=7n(AC), O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>

I hereby authorize ATL to perform the work indicated below. 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)

LAB USE ONLY: *NS12794-21*

Sample ID / Location: *B2-4.5* Date: *6/17/14* Time: *1225*

*-22* *B1-0.5* *1220*

*-23* *2.0* *1230*

*-24* *4.5* *1245*

*-25* *B9-0.5* *1300*

*-26* *2.0* *1305*

*-27* *4.5* *1315*

*-28* *B10-0.5* *1325*

*-29* *2.0* *1335*

*-30* *4.5* *1340*

*-31* *B11-0.5* *1400*

*-32* *2.0* *1405*

*-33* *B12-0.5* *1410*

*-34* *4.5* *1407*

*-35* *2.0* *1410*

*-36* *4.5* *1417*

*-37* *B13-0.5* *1415*

*-38* *2.0* *1420*

*-39* *4.5* *1425*

*-40* *B14-0.5* *1440*

TAT:  A = Overnight 5-24 hrs  B = Emergency Next Workday  C = Critical 2 Workdays  D = Urgent 3 Workdays  E = Routine 7 Workdays

Preservatives: H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 7=7n(AC), O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>

Cons: T=Truho V=VOC I=Isar R=Tarlar  
 C=Class P=Plastic M=Metal

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

*Tube no + labeled lot to analyze re. on B11-4.5*

# CHAIN OF CUSTODY RECORD

**ASSET Laboratories**  
3151-3153 W. Post Rd.  
Las Vegas, NV 89118  
Tel: (702) 307-2659 • Fax: (702) 307-2691

**FOR LABORATORY USE ONLY**

Method of Transport:  CHILLED  N  4 SEALED  Y  N

Client: ATL  ATL  CA OverN  FedEx  Other: GSD

Sample Condition Upon Receipt:  N  4  N/A  N  5 # OF SPLS MATCH COC  Y  N  6 PRESERVED  Y  N

Project Name: SR 280SB/87 SB PM 2.6  
Project #: E8721-02-10  
Date: 6/20/14  
Time: 1500

Sampler: M. Gjirca  
Received by: (Signature and Printed Name) M. Gjirca  
Date: 6/20/14  
Time: 1500

Received by: (Signature and Printed Name) [Signature]  
Date: 6/20/14  
Time: 1500

Received by: (Signature and Printed Name) [Signature]  
Date: 6/20/14  
Time: 1500

Client: Geocoin  
Attention: Luann Beadle  
Address: 6671 Brisa Street  
City: Livermore State: CA Zip Code: 94550  
Tel: 925-371-5900 Fax: 925-371-5915

Project Name: SR 280SB/87 SB PM 2.6  
Project #: E8721-02-10  
Date: 6/20/14  
Time: 1500

Sampler: M. Gjirca  
Received by: (Signature and Printed Name) M. Gjirca  
Date: 6/20/14  
Time: 1500

Received by: (Signature and Printed Name) [Signature]  
Date: 6/20/14  
Time: 1500

Received by: (Signature and Printed Name) [Signature]  
Date: 6/20/14  
Time: 1500

Special Instructions/Comments:  
Caltrans Contract 04A4336  
48-hr TAT  
Homogenize metals samples

Send Report To:  
Attn: \_\_\_\_\_  
Co: \_\_\_\_\_  
Addr: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Bill To:  
Attn: \_\_\_\_\_  
Co: \_\_\_\_\_  
Addr: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Cycle for Add Analysis(es) Requested: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below. 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)

LAB USE ONLY:	Sample ID / Location	Date	Time
NON244-60	EB 1	6/19/14	950
-61	EB 2	↓	1050
-62	EB 3	↓	1150

Container(s)	TAT #	Type	REMARKS
SOIL	1	P	
WATER	1	P	
GROUND WATER	1	P	
WASTEWATER	1	P	

QA/QC:  RTNE  CT  SWRCB Logcode  OTHER

Container Types: T=Tube V=VOA L=Liter P=Pinnt J=Jar B=Bedlar G=Glass P=Plastic M=Metal  
 TAT:  A = Overnight ≤ 24 hrs  B = Emergency Next Workday  C = Critical 2 Workdays  D = Urgent 3 Workdays  E = Routine 7 Workdays  
 Preservatives: H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub>

**amanda cortes**

---

**From:** amanda cortes [[amanda.cortes@assetlaboratories.com](mailto:amanda.cortes@assetlaboratories.com)]  
**Sent:** Monday, June 23, 2014 10:46 AM  
**To:** 'Luann Beadle'  
**Cc:** '[marlon@atl-labs.com](mailto:marlon@atl-labs.com)'; '[samplecontrol@atl-labs.com](mailto:samplecontrol@atl-labs.com)'  
**Subject:** RE: SR 280SB/87 SB PM 2.6

Hello, Luann.

I will log and label the remaining tube as B11-4.5. Thank you for the revised COC, it will be included in the final review. No problem, we will CC Chris Giuntoli on the final report.

Thanks!  
Amanda

---

**From:** Luann Beadle [<mailto:beadle@geoconinc.com>]  
**Sent:** Monday, June 23, 2014 10:25 AM  
**To:** amanda cortes  
**Subject:** RE: SR 280SB/87 SB PM 2.6

Hi Amanda,

Thanks. Please report it as B11-4.5. Attached is the revised COC. Also, could you please cc results to Chris Giuntoli? I will be out Th-Fri and he'll be covering those days.

Thank you,  
Luann

I will be on vacation June 26<sup>th</sup> and 27<sup>th</sup>



**Luann Beadle** | Senior Staff Scientist  
**Geocon Consultants, Inc.**  
6671 Brisa Street, Livermore, CA 94550  
Office: 925.371.5900, ext. 403 Direct: 925.961.5272 Mobile: 925.395.1669  
[beadle@geoconinc.com](mailto:beadle@geoconinc.com)

---

**From:** amanda cortes [<mailto:amanda.cortes@assetlaboratories.com>]  
**Sent:** Monday, June 23, 2014 10:15 AM  
**To:** Luann Beadle  
**Cc:** '[marlon@atl-labs.com](mailto:marlon@atl-labs.com)'; '[samplecontrol@atl-labs.com](mailto:samplecontrol@atl-labs.com)'  
**Subject:** RE: SR 280SB/87 SB PM 2.6

Hi, Luann.

All samples were accounted for except B11-4.5. By process of elimination (labeling all the other tubes), this tube was the only one remaining so was labeled as B11-4.5. All other samples are accounted for.

---

**From:** Luann Beadle [<mailto:beadle@geoconinc.com>]  
**Sent:** Monday, June 23, 2014 10:09 AM

PLEASE PRESS FIRMLY

**1 FROM**

DATE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

SENDER'S NAME \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

STATE/ROOM/ZIP/CITY CODE \_\_\_\_\_

COMPANY \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

**3** YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

**SPECIAL INSTRUCTIONS**



**4 SHIPPING AIR BILL**

PACKAGE INFORMATION

LETTER (MAX 8 OZ)

PACKAGE (WT) \_\_\_\_\_

DECLARED VALUE \$ \_\_\_\_\_

COD AMOUNT \$ \_\_\_\_\_  
(CASH NOT ACCEPTED)

**5 DELIVERY SERVICE**  **PRIORITY OVERNIGHT BY 10:30 AM**  **EARLY PRIORITY BY 8:00 AM**  **SATURDAY DELIVERY**

\*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

**6 RELEASE SIGNATURE** \_\_\_\_\_

SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

**8 PICK UP INFORMATION** \_\_\_\_\_

TIME \_\_\_\_\_ DRIVER # \_\_\_\_\_ ROUTE # \_\_\_\_\_

**9 GSO TRACKING NUMBER** **106237274**

PEEL OFF HERE

106237274

---

**CLIENT:** Geocon Consultants, Inc.  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab Order:** N012794

---

**CASE NARRATIVE**

Analytical Comments for EPA 6010B-STLC:

Dilution was necessary due to matrix.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Nickel possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS) and Matrix Spike Duplicate (MSD) is outside criteria ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 7470A\_STLC:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

---

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B7-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 10:37:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-004		

---

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.53	0.050 mg/L	5	6/27/2014 06:03 PM

---

<b>Qualifiers:</b>	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	



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691  
[www.assetlaboratories.com](http://www.assetlaboratories.com)

**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

---

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B5-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:04:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-010		

---

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.61	0.050 mg/L	5	6/27/2014 06:22 PM

---

<b>Qualifiers:</b>	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		



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**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

---

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B3-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 11:45:00 AM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-015		

---

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.36	0.050 mg/L	5	6/27/2014 04:40 PM

---

<b>Qualifiers:</b>	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		



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**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B1-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 12:20:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-021		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.68	0.050 mg/L	5	6/27/2014 06:30 PM

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<b>Qualifiers:</b>	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		



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**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B10-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 1:25:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-027		

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<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.79	0.050 mg/L	5	6/27/2014 04:55 PM
Nickel	4.1	0.050 mg/L	5	6/27/2014 04:55 PM

---

<b>Qualifiers:</b>	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		



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**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B12-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:07:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-033		

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<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.43	0.050 mg/L	5	6/27/2014 05:08 PM

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<b>Qualifiers:</b>	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	



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**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

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<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	B14-0.5
<b>Lab Order:</b>	N012794	<b>Collection Date:</b>	6/19/2014 2:45:00 PM
<b>Project:</b>	SR 280SB/87 SB PM 2.6, E8721-02-10	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N012794-039		

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948	PrepDate	Analyst: CEI	
Chromium	0.48	0.050 mg/L	5	6/27/2014 05:16 PM

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<b>Qualifiers:</b>	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		



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CLIENT: Geocon Consultants, Inc.  
 Lab Order: N012794  
 Project: SR 280SB/87 SB PM 2.6, E8721-02-10  
 Lab ID: N012794-045

Client Sample ID: B16-0.5  
 Collection Date: 6/19/2014 3:10:00 PM  
 Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>MERCURY BY WET EXTRACTION</b>						
<b>WET/ EPA 7470A</b>						
RunID: AA1_140630A	QC Batch: 45965			PrepDate	6/30/2014	Analyst: LCC
Mercury	ND	0.50		µg/L	1	6/30/2014 10:42 AM
<b>ICP METALS BY STLC</b>						
<b>WET/ EPA 6010B</b>						
RunID: ICP2_140627B	QC Batch: R93948			PrepDate		Analyst: CEI
Chromium	0.88	0.050		mg/L	5	6/27/2014 05:31 PM
Nickel	5.0	0.050		mg/L	5	6/27/2014 05:31 PM

**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



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**ANALYTICAL RESULTS**

Print Date: 30-Jun-14

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10  
**Lab ID:** N012794-051

**Client Sample ID:** B18-0.5  
**Collection Date:** 6/19/2014 3:30:00 PM  
**Matrix:** SOIL

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Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS BY STLC**

**WET/ EPA 6010B**

RunID: ICP2_140627B	QC Batch: R93948				PrepDate	Analyst: CEI
Chromium	0.55	0.050		mg/L	5	6/27/2014 05:40 PM

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<b>Qualifiers:</b>	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		



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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** Gecon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 6010\_ST

Sample ID	N012794-030A-DUP	SampleType:	DUP	TestCode:	6010_ST	Units:	mg/L	Prep Date:		RunNo:	93948
Client ID:	ZZZZZZ	Batch ID:	R93948	TestNo:	WET/ EPA 60						
				Analysis Date:	6/27/2014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.660	0.050						1.640	1.21	20	
Nickel	9.214	0.050						8.957	2.83	20	

Sample ID	N012794-004A-MS	SampleType:	MS	TestCode:	6010_ST	Units:	mg/L	Prep Date:		RunNo:	93948
Client ID:	ZZZZZZ	Batch ID:	R93948	TestNo:	WET/ EPA 60						
				Analysis Date:	6/27/2014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3.321	0.050	2.500	0.5276	112	75	125				
Nickel	4.585	0.050	2.500	1.795	112	75	125				

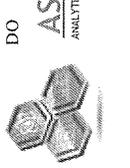
Sample ID	N012794-004A-MSD	SampleType:	MSD	TestCode:	6010_ST	Units:	mg/L	Prep Date:		RunNo:	93948
Client ID:	ZZZZZZ	Batch ID:	R93948	TestNo:	WET/ EPA 60						
				Analysis Date:	6/27/2014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.545	0.050	2.500	0.5276	80.7	75	125	3.321	26.5	20	R
Nickel	3.481	0.050	2.500	1.795	67.5	75	125	4.585	27.4	20	SR

Sample ID	N012794-004A-DUP	SampleType:	DUP	TestCode:	6010_ST	Units:	mg/L	Prep Date:		RunNo:	93948
Client ID:	ZZZZZZ	Batch ID:	R93948	TestNo:	WET/ EPA 60						
				Analysis Date:	6/27/2014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.522	0.050						0.5276	1.00	20	
Nickel	1.772	0.050						1.795	1.24	20	

Sample ID	N012794-004A-DUP	SampleType:	DUP	TestCode:	6010_ST	Units:	mg/L	Prep Date:		RunNo:	93948
Client ID:	ZZZZZZ	Batch ID:	R93948	TestNo:	WET/ EPA 60						
				Analysis Date:	6/27/2014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.522	0.050						0.5276	1.00	20	
Nickel	1.772	0.050						1.795	1.24	20	

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

Calculations are based on raw values  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** N012794  
**Project:** SR 280SB/87 SB PM 2.6, E8721-02-10

**TestCode:** 7470\_ST

Sample ID	N012794-042A-MS	SampType: MS	TestCode: 7470_ST	Units: µg/L	Prep Date: 6/30/2014	RunNo: 93955					
Client ID:	ZZZZZZ	Batch ID: 45965	TestNo: WET/ EPA 74		Analysis Date: 6/30/2014	SeqNo: 1798489					
Analyte		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.50	5.000	0.05020	37.6	70	130				S
Sample ID	N012794-042A-MSD	SampType: MSD	TestCode: 7470_ST	Units: µg/L	Prep Date: 6/30/2014	RunNo: 93955					
Client ID:	ZZZZZZ	Batch ID: 45965	TestNo: WET/ EPA 74		Analysis Date: 6/30/2014	SeqNo: 1798490					
Analyte		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.50	5.000	0.05020	44.3	70	130	1.930	15.9	20	S

**Qualifiers:**

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

Calculations are based on raw values



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**Asbestos Chain of Custody**  
EMSL Order Number (Lab Use Only):

[Empty box for Order Number]

EMSL ANALYTICAL, INC.  
200 ROUTE 130 NORTH  
GINNAMINSON, NJ 08077  
PHONE: (800) 220-3675  
FAX: (856) 786-5974

Company: <u>Geocon</u>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: <u>6671 Brize St</u>		Third Party Billing requires written authorization from third party	
City: <u>Livermore</u>	State/Province: <u>CA</u>	Zip/Postal Code: <u>94550</u>	Country: <u>USA</u>
Report To (Name): <u>L. Beadle</u>		Telephone #: <u>925-371-5900</u>	
Email Address: <u>Beadle@geoconinc.com</u>		Fax #: <u>925-371-5915</u>	Purchase Order:
Project Name/Number: <u>SR2805B/878B</u>		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: <u>CA</u>		Connecticut Samples: <input type="checkbox"/> Commercial <input type="checkbox"/> Residential	

**Turnaround Time (TAT) Options\* - Please Check**

3 Hour  6 Hour  24 Hour  48 Hour  72 Hour  96 Hour  1 Week  2 Week

\*For TEM Air 3 hr through 6 hr, please call ahead to schedule. \*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)	<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	<b>TEM- Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> TEM Qual. via Filtration Technique <input type="checkbox"/> TEM Qual. via Drop-Mount Technique <b>Other:</b> <input type="checkbox"/>
--	--	--

Check For Positive Stop - Clearly Identify Homogenous Group      Filter Pore Size (Air Samples):  0.8µm  0.45µm

Samplers Name: Mike O'Brien      Samplers Signature: [Signature]

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
B8-2.0 NOA	Soil	ziplock	6/19/14/ 1030
B7-2.0 NOA			1042
B6-2.0 NOA			1055
B5-2.0 NOA			1109
B4-2.0 NOA			1130
B3-2.0 NOA			1150
B2-2.0 NOA			1210
B1-2.0 NOA			1230

Client Sample # (s): 20      Total # of Samples: \_\_\_\_\_

Relinquished (Client): [Signature]      Date: 6/20/14      Time: 1430

Received (Lab): robin      Date: 6-23-14      Time: 1130

Comments/Special Instructions:  
CalTrans Contract # 04A 4336

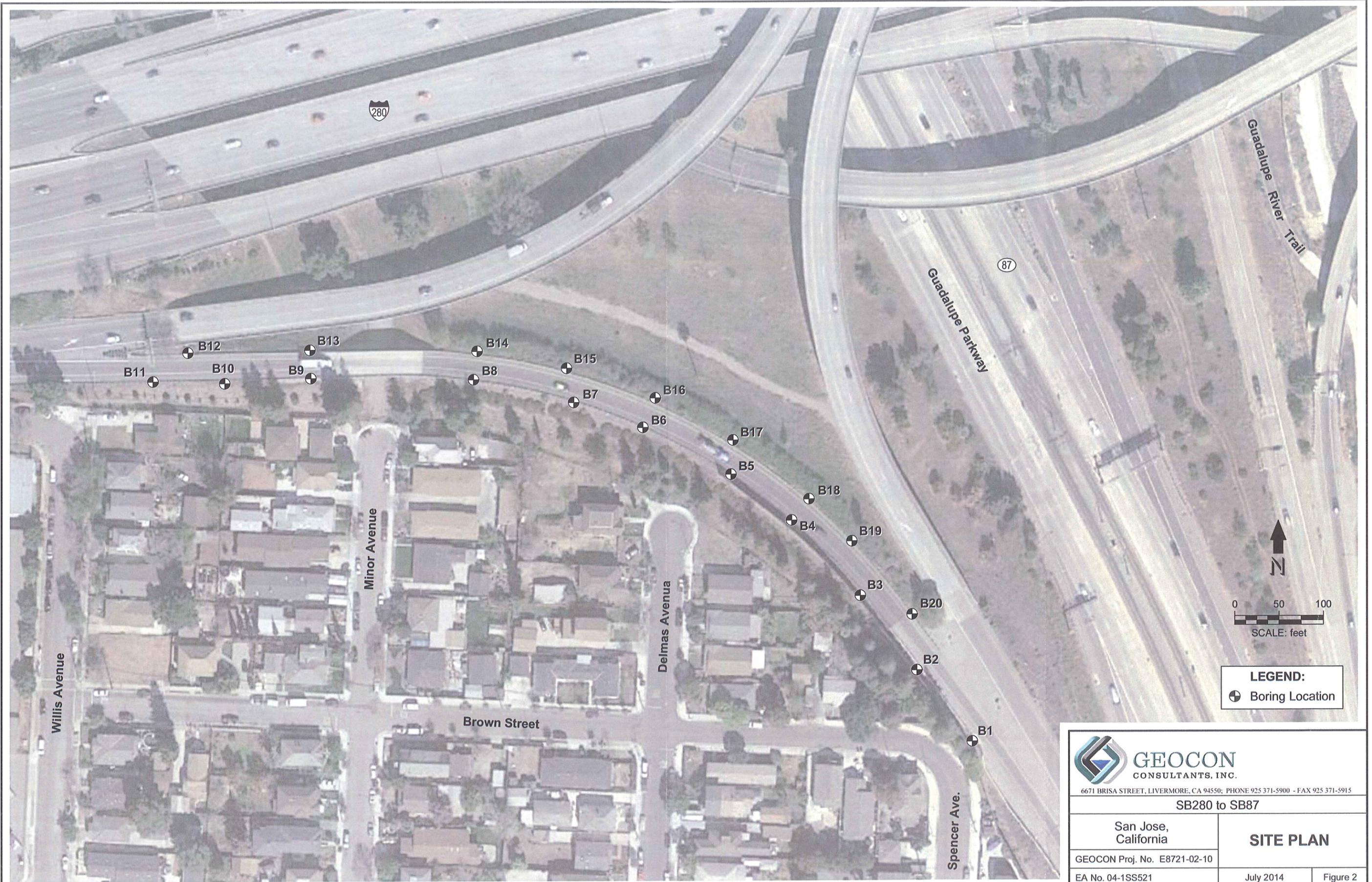
APPENDIX

**B**

<b>As</b>	
Number of Valid Observations	20
Number of Distinct Observations	18
Minimum	3
Maximum	15
Mean	5.485
Median	4.75
SD	3.202
Variance	10.25
Coefficient of Variation	0.584
Skewness	2.535
Mean of log data	1.6
SD of log data	0.414
<b>95% Standard Bootstrap UCL</b>	<b>6.69</b>

<b>Co</b>	
Number of Valid Observations	20
Number of Distinct Observations	8
Minimum	12
Maximum	36
Mean	15.9
Median	14
SD	5.271
Variance	27.78
Coefficient of Variation	0.331
Skewness	3.235
Mean of log data	2.731
SD of log data	0.247
<b>95% Standard Bootstrap UCL</b>	<b>17.8</b>

<b>Ni</b>	
Number of Valid Observations	20
Number of Distinct Observations	13
Minimum	88
Maximum	610
Mean	150.4
Median	120
SD	114.9
Variance	13208
Coefficient of Variation	0.764
Skewness	3.723
Mean of log data	4.88
SD of log data	0.447
<b>95% Standard Bootstrap UCL</b>	<b>191</b>



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SB280 to SB87	
San Jose, California	<b>SITE PLAN</b>
GEOCON Proj. No. E8721-02-10	
EA No. 04-1SS521	July 2014    Figure 2