FOR CONTRACT NO.: 04-152724

INFORMATION HANDOUT

1) MATERIAL RECOMMENDATION
DATED AUGUST 8, 2012

2) GEOTECHNICAL DESIGN REPORT
DATED JANUARY 29, 2013

3) SUPPLEMENTAL STRUCTURAL SECTION RECOMMENDATIONS
DATED JULY 25, 2013

4) FOUNDATION REPORT FOR FOUR SOIL NAIL WALLS
DATED AUGUST 13, 2013

5) STORM WATER DATA REPORT
DATED AUGUST 29, 2013

6) SITE INVESTIGATION REPORT
DATED SEPTEMBER 17, 2013

7) FOUNDATION REPORT FOR PROPOSED RETAINING WALLS
DATED OCTOBER 8, 2013

8) U.S. FISH AND WILDLIFE SERVICE-LETTER OF CONCURRENCE-FILE #08ESMF00-2013-I-0362-1
DATED APRIL 19, 2013

9) WATER QUALITY INFORMATION HANDOUT

10) GEOTECHNICAL DESIGN REPORT FOR 11 CCTVS, 1 CMS, AND 4 SIGNALS
DATED NOVEMBER 22, 2013

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. GHULAM POPAL
Branch Chief
Design SHOPP

Date: July 25, 2013

File: 4-CC-4 PM 8.0/25.0
4-CC-242 PM 0.0/3.4
EA 0412000628 (04-152721)
Install Ramp Metering
& TOS Elements
FPI Project

Attention: Emarnan Pongpairoj
Katie Chounramany

From: BRIAN W. BARBER
Materials Design Engineer
Office of Engineering Services - Materials B

Subject: Supplemental Structural Section Recommendations-PS&E

This memorandum is in response your July 17, 2013 memorandum requesting supplemental Full-Depth HMA pavement structural section design recommendations in preparation of a PS&E for a Freeway Performance Initiative (FPI) project (EA 152721) to install ramp metering and TOS at various locations on Route CC-4 from West Alhambra Avenue to East of Loveridge Road (PM 8.0 to PM 25.0) and on Route 242 from Route 680 to Route 4 (PM 0.0 to PM 3.4) in Contra Costa County.

Work will also include widening and restriping ramps to add extra lane(s) for storage and/or preferential vehicles, maintenance vehicle pullouts, CHP enforcement pullouts, installation of detector loops in existing and new pavement, installation of meter signals, ramp approach warning signs, control box pads, and underground wiring. A CHP enforcement pullout and acceleration lane may be installed on the right side of the freeway. All ADA ramps within Caltrans R/W will be upgraded. There may be new barriers, guard railings and retaining walls at some or all of the locations.

Our office previously provided pavement recommendations in our August 8, 1912 memorandum which remains valid for this project, along with the updated supplemental recommendations as provided in this current memorandum.

Mr. Ghulam Popal
Attn: Emarnan Pongpairoj
Katie Chounramany
July 25, 2013

Information provided to us for review on this project attached with the referenced 07/17/2013 memorandum included the following:

- A Site Location Map, plot dated 07/2/2013.
- Locations Of Construction, Sheets LC1, LC-2, and LC-3, plot dated 06/25/2013.
- Layout, L-1 through L-13, plot dated 06/21,24,25/2013.
- Traffic Index (T.I.) data for this project provided in your 07/17/2013 E-mail.

In addition, your office provided Traffic Index (T.I.) information and ramp locations for the requested Full-Depth HMA design in a July 17, 2013 E-mail.

Full-Depth Pavement Structural Section Design Recommendations

Note: We recommend the following full-depth structural sections be used for relatively narrow (i.e. 6 feet or less) new pavement widening (including combined new travelled way and shoulder width).

Full-Depth Design* (T.I.=12.0) for Route 4 Ramps at the following locations:

- Location # 6-EB onramp from Alhambra Ave.
- Location # 14-EB onramp from Pine St.
- Location # 23-EB onramp from Morello Ave.
- Location # 29-EB onramp from Pacheco Blvd.
- Location # 52-WB onramp from Willow Pass Rd.

In Cut: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.81'$
1.50' HMA(A); 0.35' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.32'$
1.40' HMA(A); 0.35' AS(4)

Full-Depth Design* (T.I.=10.0) for Route 4 Ramps at the following locations:

- Location # 8-WB onramp from Pine St.
- Location # 14-WB onramp from Pine St.
- Location # 18-WB onramp from Morello Ave.
- Location # 28-WB onramp from Pacheco Blvd.
- Location # 40-WB onramp from Solano Way
- Location # 41-EB onramp from Solano Way
- Location # 43-WB onramp from Willow Pass Rd.

In Cut: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.09'$
1.20' HMA(A); 0.35' AS(4)

Mr. Ghulam Popal
Attn: Emarnan Pongpairoj
Katie Chounramany
July 25, 2013

In Fill: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 2.76'$
1.10 HMA(A); 0.35' AS(4)

Notes:
HMA(A) = Hot Mix Asphalt (Type A)
AS (4) = Aggregate Subbase (Class 4)

*Full-Depth design to apply to both the travelled-way and shoulder new pavement structural section.

If you have any comments or questions, please contact Brian Barber at 622-5490.

c: Daily File, Route File

BBarber/bb/CC-4/242, EA 0412000628 Supplemental Full-Depth Struc. Sec. Recom.

PAVEMENT DESIGN RECOMMENDATIONS

Based on the T.I.'s provided and a subgrade soil R-value (estimated from work previously done in the project area) our pavement structural section design recommendations are provided as follows:

Route 4 Ramps (Locations: 16, 17, 18, 19, 20)

In Cut: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.71'$
0.60' HMA(A); 1.00' AB(3); 1.55' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.32'$
0.60' HMA(A); 1.00' AB(3); 1.15' AS(4)

Route 4 Ramps- All Other Locations & Route 242 Ramps
In Cut: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.09'$
0.50' HMA(A); 0.85' AB(3); 1.25' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 2.76'$
0.50 HMA(A); 0.85' AB(3); 0.95' AS(4)

Route 4 Mainline, PM 8.0 & Route 242 Mainline, PM 0-3.4

2-Right Lanes
In Cut: Design Parameters: $T.I._{20\text{-year}} = 12.5$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.86'$
0.65' HMA(A); 1.05' AB(3); 1.65' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 12.5$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.45'$
0.65' HMA(A); 1.05' AB(3); 1.20' AS(4)

Median
In Cut: Design Parameters: $T.I._{20\text{-year}} = 10.5$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.24'$
0.55' HMA(A); 0.85' AB(3); 1.35' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 10.5$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 2.90'$
0.55' HMA(A); 0.85' AB(3); 1.00' AS(4)

Shoulder
In Cut: Design Parameters: $T.I._{20\text{-year}} = 8.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 2.47'$
0.40' HMA(A); 0.65' AB(3); 0.95' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 8.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 2.21'$
0.40' HMA(A); 0.85' AB(3); 0.70' AS(4)

Route 4 Mainline, PM 15.0

2-Right Lanes
In Cut: Design Parameters: $T.I._{20\text{-year}} = 13.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 4.01'$
0.65' HMA(A); 1.10' AB(3); 1.70' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 13.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.59'$
0.65' HMA(A); 1.10' AB(3); 1.30' AS(4)

Median
In Cut: Design Parameters: $T.I._{20\text{-year}} = 11.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.40'$
0.55' HMA(A); 0.90' AB(3); 1.40' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 11.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.04'$
0.55' HMA(A); 0.90' AB(3); 1.05' AS(4)

Shoulder
In Cut: Design Parameters: $T.I._{20\text{-year}} = 8.5$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 2.62'$
0.40' HMA(A); 0.70' AB(3); 1.05' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 8.5$; Subgrade Soil R-value $_{fill} = 15$; $G.E._{Design} = 2.35'$
0.40' HMA(A); 0.70' AB(3); 0.75' AS(4)

Maintenance and CHP Pullout Structural Sections

Construct the Maintenance and CHP Pullout structural sections the same as the new adjacent ramp or new mainline shoulder sections. In any case do not construct the maintenance and CHP pullout structural sections with less than a T.I.=8.0. i.e. **in Cut 0.40' HMA(A); 0.65' AB(3); 0.95' AS(4)** or **in Fill 0.40' HMA(A); 0.85' AB(3); 0.70' AS(4).** An optional Full-Depth HMA pavement section if the Maintenance and CHP Pullouts are constructed independently of adjacent new pavement would be (for a T.I.=8.0): **In Cut 0.95' HMA(A); 0.35' AS(4)** and **in Fill 0.85' HMA(A); 0.35' AS(4).**

ADA Curb Ramp Structural Section

Construct the ADA curb ramps with **0.33' PCC over 0.50' AB(3).**

Notes:

- HMA(A) = Hot Mix Asphalt-Type A
- AB(3) = Aggregate Base-Class 3
- AS(4) = Aggregate Subbase-Class 4
- PCC = Portland Cement Concrete

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Office of Geotechnical Design - West

GEOTECHNICAL DESIGN REPORT

FREEWAY PERFORMANCE INITIATIVE PROJECT INSTALLING RAMP METERING AND TOS ELEMENTS ON ROUTE 4 FROM WEST OF ALHAMBRA AVENUE TO EAST OF LOVERRIDGE ROAD AND ON ROUTE 242 FROM ROUTE 680 TO ROUTE 4 CONTRA COSTA COUNTY, CALIFORNIA

04 – CC – 4 PM R8.0/25.0
04 – CC – 242 PM 0.0/3.4
EA 04 – 152700
JANURARY 2013

PREPARED FOR:

DISTRICT 4
OFFICE OF DESIGN SHOPP

PREPARED BY:

DIVISION OF ENGINEERING SERVICES
OFFICE OF GEOTECHNICAL DESIGN – WEST
GEOTECHNICAL SERVICES
BRANCH A

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. ZIAD ABUBEKR
District Office Chief
Design SHOPP

Date: January 29, 2013

Attention: Ghulam Popal
Katie Chounramany
Muthanna Omran

File: 04 – CC – 4 PM R8.0/25.0
04 – CC – 242 PM 0.0/3.4
EA 04 – 152700
Ramp Widening

From: SUNNY YANG / SAMUEL AWAD
Transportation Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Geotechnical Design Report for Ramp Widening at Eleven Locations on Route 4

This report presents the results of our studies performed for the proposed ramp widening at eleven locations on State Route 4 in Contra Costa County, as part of the Freeway Performance Initiative (FPI) project. The FPI project proposes to widen ramps and install ramp metering and Traffic Operations System (TOS) elements at various locations on Route 4 and Route 242.

This report defines the geotechnical conditions as evaluated from field and laboratory test data. It provides geotechnical recommendations and specifications for design and construction of the ramp widening portion of the project. Geotechnical design recommendations for the TOS elements will be provided in a separate report to your Office when all pertinent information (exact locations and types of TOS elements) is made available to us. Foundation recommendations for a soil nail wall proposed at one ramp widening location will be provided in another report to Structural Design.

Conclusions and recommendations presented in this report are based on subsurface exploration and laboratory testing programs. Variations between anticipated and the actual subsurface conditions may be encountered in localized areas during construction. This Office should be contacted for review and supplemental recommendation if significant variation in subsurface conditions is encountered during construction.

This report is intended for use by the project design engineer, construction personnel, bidders and contractors.

Should you have any questions, please contact Sunny Yang at (510) 286-4808 or Hooshmand Nikoui, Branch Chief, at (510) 286-4811.

c: TPokrywka, HNikoui, SYang, SAwad, Daily File, Route File, Translab File.

SYang/mm

REGISTERED PROFESSIONAL ENGINEER ZHAOHUI YANG No. 71601 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

TABLE OF CONTENTS

1. INTRODUCTION

The Freeway Performance Initiative (FPI) project proposes to widen ramps and install ramp metering and Traffic Operations System (TOS) elements at various locations on Route 4 from West of Alhambra Avenue to East of Loveridge Road, and on Route 242 from Route 680 to Route 4 in Contra Costa County, California (Figure 1). The purpose of this Geotechnical Design Report (GDR) is to document subsurface geotechnical conditions, provide analyses of the anticipated site conditions as they pertain to the project described herein, and to recommend design and construction criteria for the proposed ramp widening at eleven locations on Route 4 (Figure 1):

- Pine Street Westbound
- Pine Street Eastbound
- Pacheco Boulevard Westbound
- Pacheco Boulevard Eastbound
- Morello Avenue Westbound
- Morello Avenue Eastbound
- Solano Way Westbound
- Solano Way Eastbound
- Alhambra Avenue Eastbound
- Willow Pass Road Westbound
- Port Chicago Highway Westbound

This report also establishes a geotechnical baseline to be used in assessing the existence and scope of changed site conditions. This report is intended for use by the project design engineer, construction personnel, bidders and contractors.

Foundation recommendations for the TOS elements and one soil nail wall proposed herein will be provided in separate reports.

The vertical datum used in this report is NAVD 88. The horizontal datum is NAD 83.

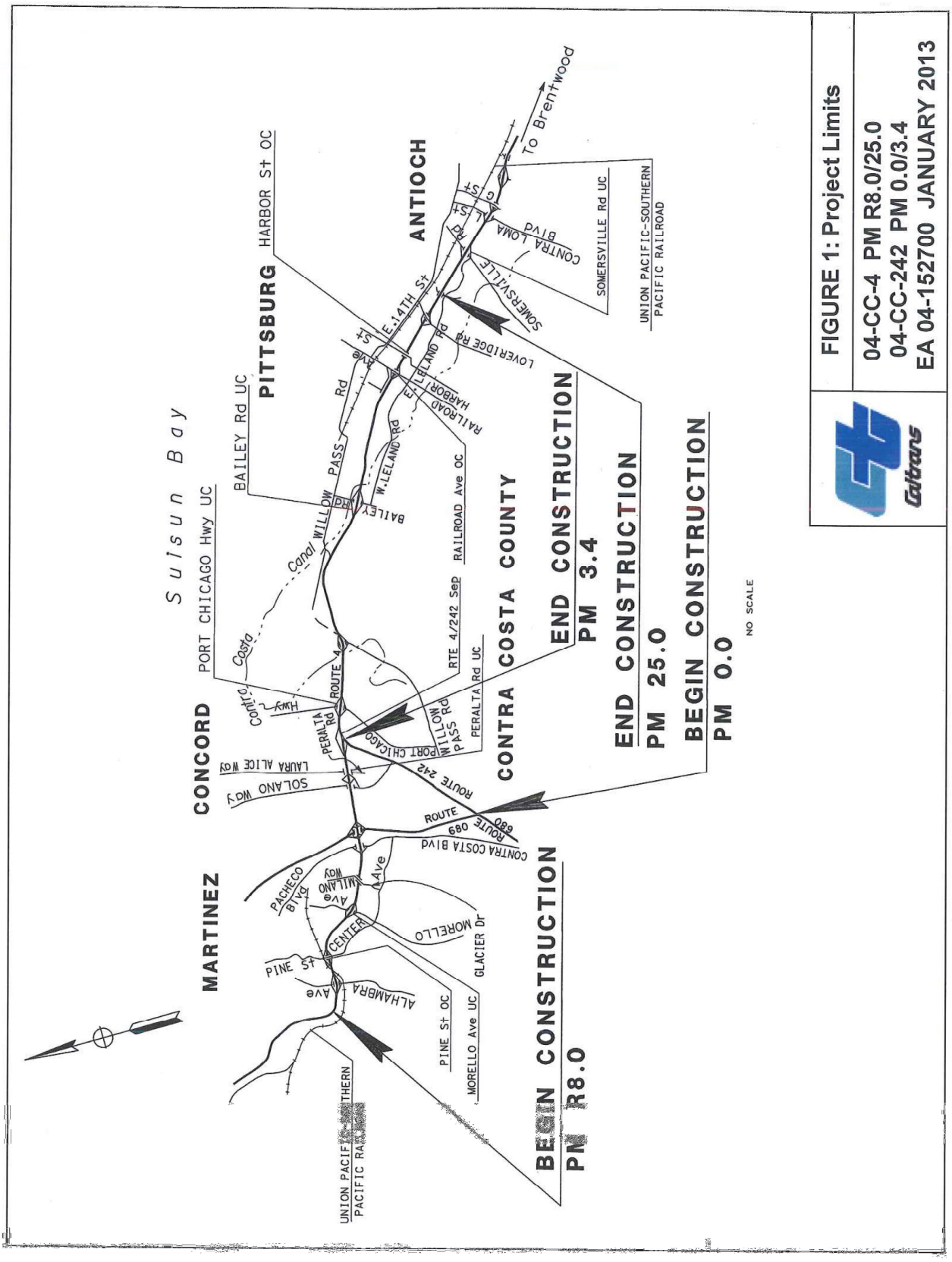


FIGURE 1: Project Limits
04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152700 JANUARY 2013
Caltrans
NO SCALE
BEGIN CONSTRUCTION
PM R8.0
BEGIN CONSTRUCTION
PM 0.0
END CONSTRUCTION
PM 25.0
END CONSTRUCTION
PM 3.4
CONTRA COSTA COUNTY
MARTINEZ
CONCORD
PITTSBURG
ANTIOCH
Suisun Bay
To Brentwood
HARBOR St OC
BAILEY Rd UC
PORT CHICAGO Hwy UC
Contra Costa Canal
WILLOW PASS
W.LELAND Rd
E.LELAND Rd
E.14TH St
L St
G St
Rd
Ave
RAILROAD HARBOR
RAILROAD Ave OC
RTE 4/242 Sep
PERALTA Rd UC
PERALTA Rd
ROUTE 4
ROUTE 242
ROUTE 680
ROUTE 680
CONTRA COSTA Blvd
SOLANO WAY
LAURA ALICE WAY
PACHECO Blvd
WILLOW Ave
CENTER Ave
MORELLO
GLACIER Dr
PINE St
ALHAMBRA Ave
PINE St OC
MORELLO Ave UC
UNION PACIFIC-SOUTHERN
PACIFIC RAILROAD
SOMERSVILLE Rd UC
CONTRA LOMA Blvd
LOVERIDGE Rd
SOMERSVILLE

In summary, the following tasks were performed for the preparation of this GDR:

- Geologic literature study;
- Field geotechnical exploration, including drilling 8 exploratory borings, performing Standard Penetration Test (SPT) and Pocket Penetrometer (PP) Test, and collecting soil samples;
- Laboratory testing of selected samples;
- Stability analysis of cut and fill slopes and embankment foundation design;
- Preparation of this GDR.

2. EXISTING FACILITIES AND PROPOSED IMPROVEMENTS

2.1 Project Background/ Existing Facilities

The section of Route 4 within the project limits, PM 8 to PM 25, consists of divided six-lane freeways with standard 12-foot wide lanes and standard 10-foot wide shoulders. The section of Route 242 within the project limits from Route 4 to Interstate 680 also consists of divided six-lane freeways with standard 12-foot wide lanes and standard 10-foot wide shoulders. There are numerous bridges located within the project limits; however, none of them will be affected by the proposed project.

2.2 Proposed Improvements

The project will generally consist of widening and re-striping the ramps to add extra lane(s) for storage and/or preferential vehicles, maintenance pullouts, CHP enforcement pullouts, installation of detector loops in existing and new pavement, installation of meter signals, warning signs approaching the ramp, control box pads, and underground wiring to signs and signals. A CHP enforcement pullout and acceleration lane may be installed on the right side of the freeway. All ADA curb ramps within the right-of-way will be upgraded. There may be new barriers, guard rails and retaining walls to install at some or all of the locations. Work will be within the state right of way, except for possibly some

warning signs on local streets approaching the ramps and power connection to some TOS elements.

3. PERTINENT REPORTS AND INVESTIGATIONS

The Preliminary Geotechnical Report by R. Karpowicz and G. Wilcox of our Office, dated December 2011, provides background information on geologic and geotechnical settings at the project area and preliminary geotechnical recommendations for ramp widening at various locations. A list of references of pertinent geologic/geotechnical information was included in that report.

4. PHYSICAL SETTING

4.1 Climate

The climate in the project area is characterized as Mediterranean, with warm, dry summers and cool, moist winters. The average annual temperature varies from 56°F to 62° F, with the mean maximum temperature occurring in July of 87° F and the mean low temperature occurring in December of 38° F. Temperature variations between night and day tend to be relatively big during summer with a difference that can reach 32 degrees Fahrenheit, and fairly limited during winter with an average difference of 16 degrees Fahrenheit.

The average annual precipitation for the Concord area over 69 years is 19 inches, with most of the precipitation falling between the months of November and March. The wettest month of the year is January with an average rainfall of 4.25 inches. Winter storms that move through the area are usually of moderate duration and intensity, but sometimes the rainfall is heavy enough to cause flooding.

4.2 Topography and Drainage

The project is located at the northern part of Contra Costa County, which is located at the northern end of the Diablo Range of Central California. It is bounded on the north by Carquinez Strait, through which flows 27% of California's surface water runoff (USGS, 1997). The County is bordered to the west by the San Francisco Bay, to the east by the San Joaquin Valley, and to the south by the Livermore Valley. Contra Costa is one of the nine Bay Area counties with streams that are tributaries to San Francisco Bay. Most of the county is mountainous with steep rugged topography. Mount Diablo, in the center of the county, is one of the highest peaks in the Bay Area, reaching an elevation of 1173 meters (3,849 ft). Although the project extends over two spur ridges, the majority of the project is located on relatively low, flat lying ground of the Clayton-Concord Valley. According to the USGS topographic maps for the area, the low point of the project, along the northern margin of the Diablo Valley, is located at an elevation of 20 feet above mean sea level. The high point of the project, at the crest of a spur ridge of Mount Diablo, is located at an elevation of 475 feet above mean sea level.

Overall drainage within the project limits flows to the north to the Sacramento River Delta and Carquinez Strait, and ultimately flowing west to the San Francisco Bay.

4.3 Regional Geology and Seismicity

The project is located in the northern portion of the Diablo Mountain Range within the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The central portion of the project is located in the Diablo Valley, a broad, sediment-filled basin completely surrounded by the northern portion of the Diablo Mountain range. The eastern portion of the project is located on the eastern flank of the Martinez Ridge of the Diablo Mountain Range. The eastern portion of the project is located on the foothills of the northern Diablo Mountain Range, adjacent

to the Sacramento River Delta.

Seismologic and geologic experts convened by the U. S. Geological Survey concluded that there is a 62% 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% 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%, 11% and 3%, respectively.

5. EXPLORATION

Geotechnical Design-West conducted field investigations for this project. The investigations included several site visits, studying the geology of the area, and drilling a total of seven power borings (see Table 2 below). These borings were drilled in the vicinity of three of the proposed ramp widening locations: Pine Street W/B, Pine Street E/B, and Pacheco Boulevard W/B. These locations have deeper cut slopes that warrantee more detailed studies. The other locations have either minor cut slope or minor fill slope. Refer to Section 7.2 of this report for detailed descriptions of the foundation materials at these locations.

5.1 Drilling and Sampling

A total of seven geotechnical exploratory borings were drilled to investigate subsurface soil conditions for the proposed ramps widening. All were rotary wash borings, using a truck-mounted drill rig. Of the seven borings, two were vertical borings and five were horizontal borings. Table 1 lists the locations and depths of these borings and the dates they were drilled. The horizontal borings were typically 3 to 4 feet above roadway

elevation, at a downward inclination of 3 degrees from horizontal. The vertical borings were drilled at the roadway elevation.

Table 1. Summary of Boring Location, Depth, and Groundwater Data

Boring No.	Location, Stationing, Offset	Type of Boring	Boring Elevation (ft)	GW Depth (ft)	Boring Depth (ft)	Date Drilled (GW Measured)
RC-12-001A	Pine WB, 22+89, 37.7' Rt.	Horizontal	213.2	*	25	6/26/12
RC-12-003	Pine WB, 25+36, 32.4' Rt.	Horizontal	203.7	*	30	6/26/12
RC-12-004	Pine WB, 24+74, 20.6' Rt.	Vertical	199.1	7	31.5	8/21/12 (8/22/12)
RC-12-005	Pacheco WB, 21+96, 41.6' Rt.	Horizontal	53.7	*	33	6/27/12
RC-12-006	Pacheco WB, 28+46, 25.1' Rt.	Horizontal	75.4	*	30	8/22/12
RC-12-007	Pacheco WB, 27+98, 15.8' Rt.	Vertical	69.9	7	31.5	8/22/12 (8/24/12)
RC-12-008	Pine EB, 15+24, 32.7 Rt.	Horizontal	189.0	*	25	8/20/12

* Groundwater was not measured.

6. GEOTECHNICAL TESTING

6.1 In Situ Testing

In the vertical borings, Standard Penetration Tests (SPT) were performed at 5-feet interval in soil strata. Pocket Penetrometer (PP) tests were conducted on soil samples showing apparent cohesion. Visual soil classifications were made in the field in accordance with the Unified Soil Classification System. Soil samples were collected for laboratory testing. Further, for rock samples, Rock Quality Determination (RQD) and percent of sample recovery for each run were also recorded. For all horizontal borings, continues core samples were collected in boxes.

6.2 Laboratory Testing

Laboratory tests were performed to investigate corrosivity of project site soils. According to current Caltrans Corrosion Guidelines (V2.0, November 2012), a soil is considered non-corrosive for structure foundation elements, if the pH value is 5.5 or greater, chloride concentration is 500 ppm or less, and sulfate concentration is 2000 ppm or less. A minimum resistivity of less than 1000 ohm-cm is also an indicator of higher propensity for corrosion. Based on our laboratory corrosion test performed on four soil samples (Table 2), the soil at Pine Street W/B and Pacheco Boulevard W/B may be considered corrosive. These results shall be taken into consideration for design of one soil nail wall proposed at Pine Street W/B (Section 8.1), and/or any culvert at these locations.

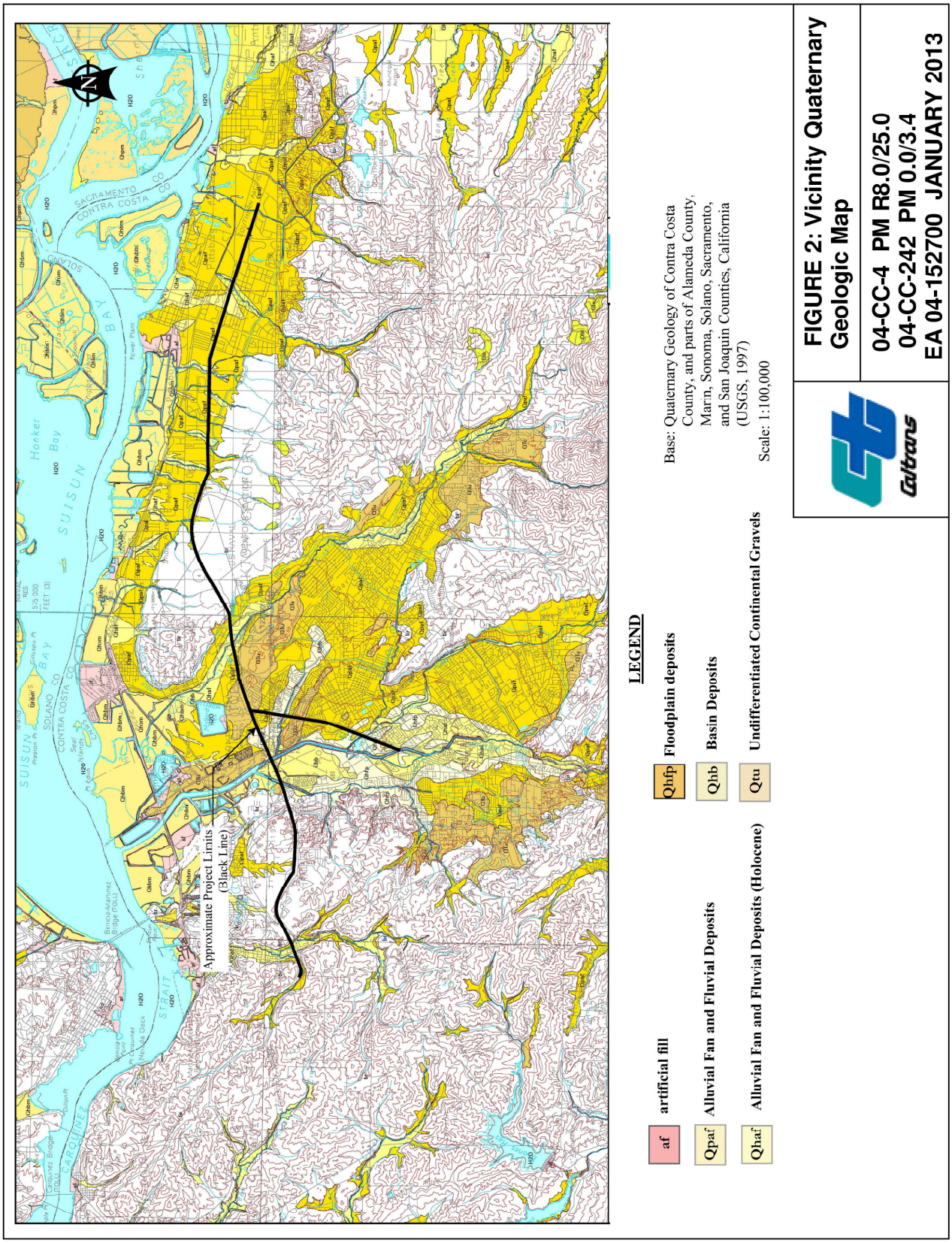
Table 2. Soil Corrosion Test Summary

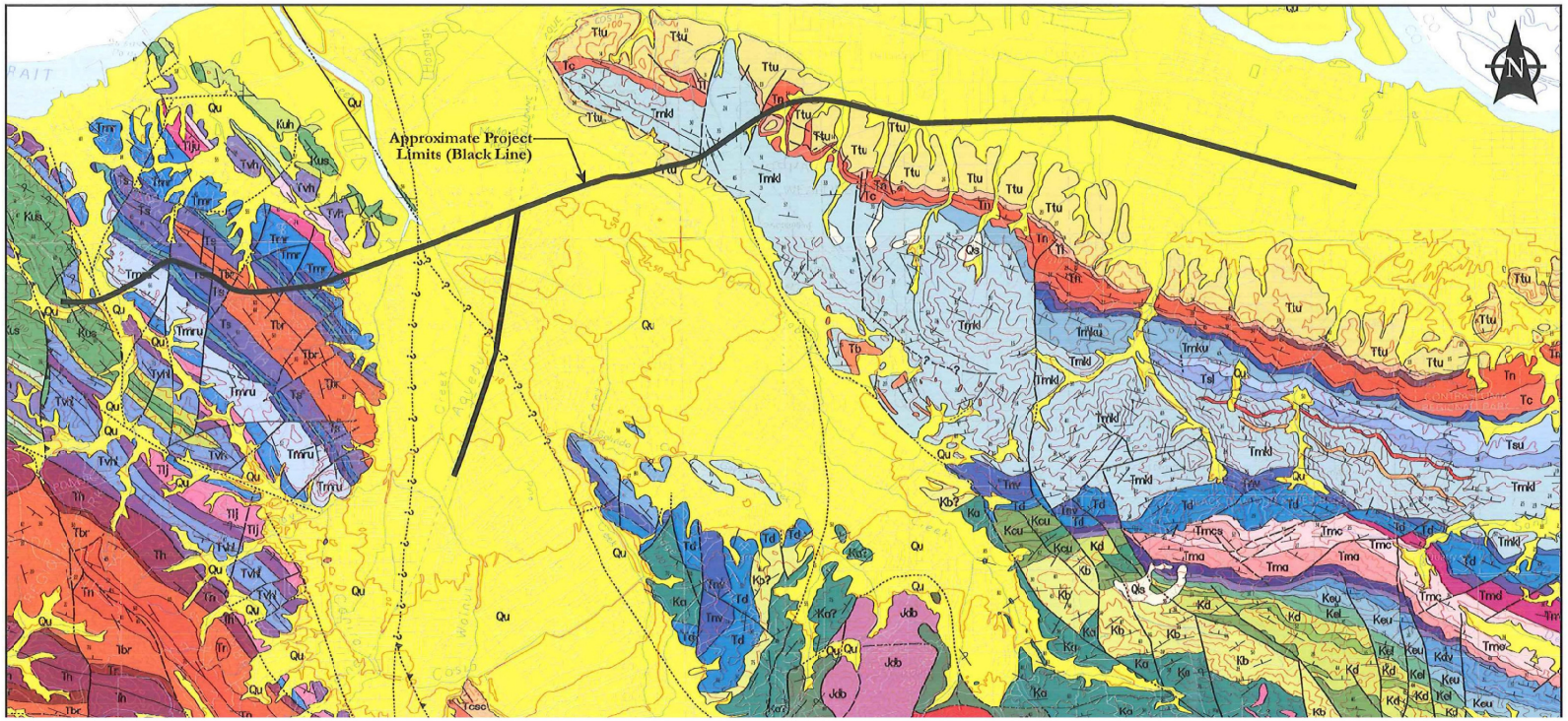
Location	Sample ID No.	Location	Sample Depth (ft)	Min. Resistivity (ohm-cm)	pH	Chloride content (ppm)	Sulfate content (ppm)	Is site corrosive
RC-12-001A	-	Pine St. W/B	3 – 15	452	5.5	458	3400	Yes
RC-12-004	C633313	Pine St. W/B	2 – 4	1112	7.5	-	-	No
RC-12-005	C633312	Pacheco Blvd W/B	15 – 25	563	3.2	-	-	Yes
RC-12-007	C633314	Pacheco Blvd W/B	1 – 3	1603	8.0	-	-	No

7. GEOTECHNICAL CONDITIONS

7.1 Site Geology

In general the portion of the project located in the Diablo Valley is underlain by Quaternary alluvial deposits and the portion of the project passing over the foothills of the Diablo Mountain Range is underlain by bedrock. The depositional environment of the Quaternary deposits comprises a transgressive sequence of alluvial fan and fan-delta deposits, as shown in Figure 2. The bedrock formations underlying the foothills portion of the project are shown in Figure 3.


Approximate Project Limits
(Black Line)
LEGEND
af artificial fill
Qhfp Floodplain deposits
Qpaf Alluvial Fan and Fluvial Deposits
Qhb Basin Deposits
Qhaf Alluvial Fan and Fluvial Deposits (Holocene)
Qtu Undifferentiated Continental Gravels
Base: Quaternary Geology of Contra Costa County, and parts of Alameda County, Marin, Sonoma, Solano, Sacramento, and San Joaquin Counties, California (USGS, 1997)
Scale: 1:100,000
FIGURE 2: Vicinity Quaternary Geologic Map
04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152700 JANUARY 2013



LEGEND

Qu	Surficial deposits, undivided (Pleistocene and Holocene)	Tvh	Vine Hill Sandstone of Weaver (1953) (Paleocene)	Ts	Sobrante Sandstone (Miocene)
Tl	Lawlor Tuff (Pliocene)	Tvhl	Vine Hill Sandstone of Weaver (1953) (Paleocene) Lower Member	Th	Hambre Sandstone (Miocene)
Tmkl	Markley Formation (Eocene) Lower member	Tbr	Briones Sandstone (Miocene)	Ttu	Tice Shale (Miocene) Upper member
Tmru	Muir Sandstone of Weaver (1953) (Eocene) Lower Member	Tn	Neroly Sandstone (Miocene)	Kus	Great Valley sequence (Cretaceous)
Tlju	Las Juntas Shale of Weaver (1953) (Paleocene and Eocene) Upper member	Tc	Cierbo Sandstone (Miocene)		

Base: Preliminary Geologic Map Emphasizing Bedrock Formations in Alameda County, California (Graymer and others, 1996)
Scale: 1:75,000

FIGURE 3: Vicinity Geologic Map

04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152700 JANUARY 2013

7.1.1 Natural Slope Stability

Some of the existing ramps are adjacent to cut slopes, while the others are on fill embankments. Our field inspection did not indicate any slope stability issue at all eleven ramp widening locations.

7.2 Soil and Groundwater Conditions

The subsurface soil conditions at three of the ramp widening locations are evaluated using the data obtained from the borings drilled for this project (Refer to Section 5) and from available as-built plans. The subsurface soil conditions at these locations are described below. Detailed descriptions of the foundation soils and boring locations are presented on the LOTB sheets, which should be included in the Contract Plans. For the rest of the widening locations, no field exploration was performed as the widening work is minor and the existing embankments are in good conditions. Brief descriptions of the proposed widening work at these locations are also presented below.

Pine Street W/B

The proposed widening at this ramp is approximately 985 feet long (from Sta. 20+85 to 30+70), with maximum cut of 15 feet horizontal (10 feet vertical) in the existing slope on the right side (the existing slope is 1.5H:1V). Based on the two horizontal borings drilled on the slope (RC-12-001A and RC-12-003), the subsurface materials on the slope are predominantly soft sandstone/claystone, with zero to 15 feet cover of dense clayey sand or stiff sandy clay. The vertical boring (RC-12-004) shows that subsurface soil under the ramp pavement is very dense sand (SPT blow count $N_{60} > 50$).

Groundwater was measured at 7 feet depth (Elevation 192 feet) in vertical boring RC-12-004 on August 22, 2012 (Table 1). Note that groundwater level typically fluctuates with season and correlates with the local geology and topography.

Pine Street E/B

The proposed widening at this ramp is approximately 1180 feet long (from Sta. 10+00 to 21+80), with maximum cut of 20 feet horizontal (10 feet vertical) in the existing slope on the right side (the existing slope is 2H:1V). Based on the horizontal boring drilled on the slope (RC-12-008), the subsurface materials on the slope are predominantly medium stiff to very stiff sandy silt and silty/clayey sand (Pocket Penetrometer PP value = 0.5 – 2.5 tsf). Soft siltstone bedrock was encountered at 17 feet depth (along the direction of boring). Groundwater was not recorded at the time of drilling.

Pacheco Boulevard W/B

The proposed widening at this ramp is approximately 1120 feet long (from Sta. 20+00 to 31+20), with two segments of fill (from Sta. 20+00 to 20+50 and from Sta. 22+60 to 23+70) and two segments of cut (from Sta. 20+70 to 22+60 and from Sta. 23+70 to 31+20) in the existing slope on the right side. Between Sta. 20+70 to 22+60, the maximum cut is 2 feet vertical (the existing slope is 2H:1V). Based on the horizontal boring drilled on the slope (RC-12-005), the subsurface material is soft claystone.

Between Sta. 23+70 to 31+20, the maximum cut is 4 feet vertical (the existing slope is 2H:1V). Based on the horizontal boring drilled on the slope (RC-12-006) and one adjacent vertical boring (RC-12-007), the subsurface material on the slope is soft siltstone/claystone with PP value greater than 1.5 tsf.

Groundwater was measured at 7 feet depth (Elevation 62.9 feet) in vertical boring RC-12-007 on August 24, 2012 (Table 1).

Pacheco Boulevard E/B

The proposed widening at this ramp is approximately 760 feet long (from Sta. 20+00 to 27+60), with minor cut of one foot vertical on the right side. No field exploration was performed considering this is very minor earthwork.

Morello Avenue W/B

The proposed widening at this ramp is approximately 1310 feet long (from Sta. 20+00 to 31+10), on the right side of an existing fill embankment, which has a slope of 2H:1V or flatter. The widening portion has a maximum width of 8 feet over the existing slope. No field exploration was performed considering widening will be on an engineering fill embankment which is in good conditions.

Morello Avenue E/B

The proposed widening at this ramp is approximately 1250 feet long (from Sta. 10+00 to 22+50), on the right side of an existing fill embankment, which has a slope of 2H:1V or flatter. The widening portion has a maximum width of 3 feet over the existing slope. No field exploration was performed considering widening will be on an engineering fill embankment which is in good conditions.

Solano Way W/B

The proposed widening at this ramp is approximately 950 feet long (from Sta. 20+00 to 29+50), on the right side of an existing fill embankment, which has a slope of 2H:1V or flatter. The widening portion has a maximum width of 8 feet over the existing slope. No field exploration was performed considering widening will be on an engineering fill embankment which is in good conditions.

Solano Way E/B

The proposed widening at this ramp is approximately 1000 feet long (from Sta. 10+00 to 20+00), on the right side of an existing fill embankment, which has a slope of 2H:1V or flatter. The widening portion has a maximum width of 8 feet over the existing slope. No field exploration was performed considering widening will be on an engineering fill embankment which is in good conditions.

Alhambra Avenue E/B

The proposed widening at this ramp is approximately 800 feet long (from Sta. 10+00 to 18+00), on the right side of an existing fill embankment, which has a slope of 2H:1V. The widening portion has a maximum width of 7 feet over the existing slope. No field exploration was performed considering widening will be on an engineering fill embankment which is in good conditions.

Willow Pass Road W/B

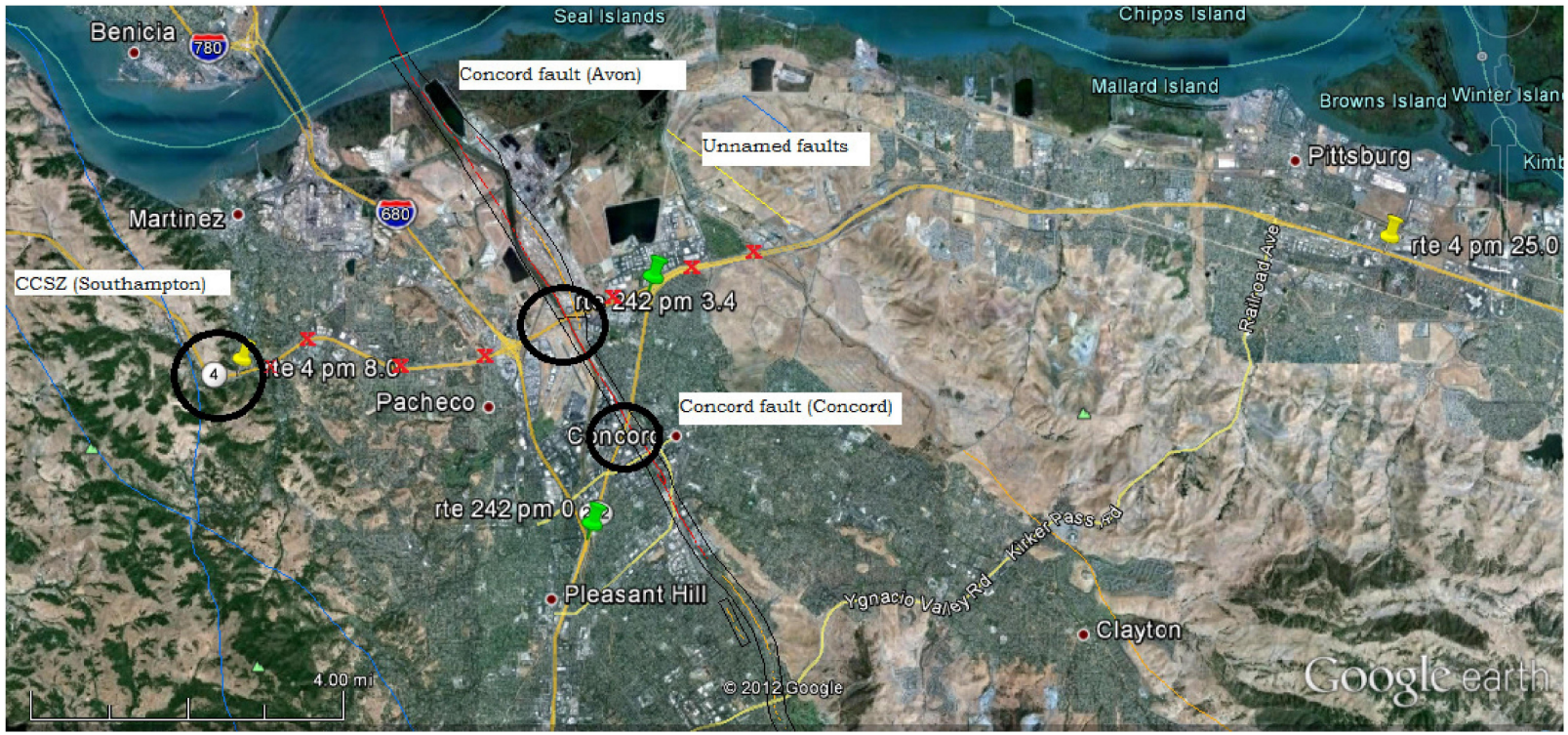
The proposed widening at this ramp is approximately 1570 feet long (from Sta. 10+00 to 25+70), with minor cut slope from Sta. 10+00 to approximately 15+00 and minor fill from 15+00 to 25+70. No field exploration was performed considering the earthwork involved is minor.

Port Chicago Highway W/B

The proposed widening at this ramp is approximately 3220 feet long (from Sta. 10+00 to 42+20), with minor fill on the right side from Sta. 15+00 to 15+90 and from 24+50 to 26+50. No field exploration was performed considering the earthwork involved is minor.

7.3 Project Site Seismicity

Figure 4 shows the faults near the project site. The Concord fault is included in an Alquist-Priolo Earthquake Fault Zone because it is sufficiently active (Historic/Holocene active) and well-defined. The Concord Fault zone intersects the project alignment approximately at Highway 4 between PM 13.31 and 13.53 and at Highway 242 between PM 1.45 and 1.73. The Contra Costa Shear Zone shown west of the westernmost extent of the project is currently considered late-Quaternary or Quaternary active and therefore not Caltrans-active.



Notes:

1. Yellow pins denote Rte 4 project extent; green pins denote Rte 242 project extent. Red "x's" denote approximate locations of ramps to be widened.
2. The AP Earthquake Fault Zone for the Concord fault is outlined in black. Black circles denote general fault crossing areas. The Concord fault (Avon and Concord sections) crosses Rte 4 near Walnut Creek Bridge and Rte 242 near Concord Avenue UC. The Contra Costa Shear Zone (Southampton fault) crosses west of the project. Two short (1-2 miles long) unnamed faults north of Rte 4 trend towards the project.
3. USGS faults are red for historically active; orange for Holocene-active; yellow for late-Quaternary active, and blue for Quaternary active) (USGS 2010).

Caltrans	**FIGURE 4: Site Fault Map**
	04-CC-4 PM R8.0/25.0 **04-CC-242 PM 0.0/3.4** **EA 04-152700 JANUARY 2013**

Table 3 lists these two faults and maximum credible earthquake magnitudes that can be generated. Two 1-2 mile long faults north of Route 4 are also considered late-Quaternary or Quaternary active and do not need to be considered for fault rupture (Figure 4).

Table 3. Adjacent faults and maximum magnitudes *

Fault	Distance from project (Miles)	Maximum Credible Earthquake (Mw)
Concord	0 (Highway 4 PM 13.31 to13.53 & Highway 242 PM 1.45 to 1.73)	6.6
Southampton (Contra Costa Shear Zone)	0.31 west	6.5

*Caltrans ARS online v2.0.4

7.3.1 Ground Motions

Ground shaking: Using Caltrans ARS online v2.0.4 and assuming average shear wave velocity within top 100 feet (30 meters) depth is 984 fps (300 m/s, corresponding to stiff soil profile), the calculated peak ground accelerations at the project site range from 0.58g to 0.82g, with 0.69g at Pine Street ramps.

Liquefaction: Liquefaction is a phenomenon in which loose, saturated, fine-grained granular soils behave like a fluid when subjected to high intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow ground water; (2) low-density, fine, sandy soils; and, (3) high-intensity ground motion. Saturated, loose and medium dense, cohesionless soils exhibit the liquefaction potential, while dense cohesionless soil and cohesive soil exhibit the lowest, negligible liquefaction potential. Effects of liquefaction on ground surface include sand boils, settlement and lateral spreading.

Investigation of the boring logs drilled at three of the ramp widening locations (Table 1) indicates that the materials encountered at these locations are mostly cohesive soils,

sedimentary rock, or dense to very dense silty/clayey sand. Therefore, the potential for liquefaction during a seismic event at these locations is very low. For the rest of the ramp widening locations, the impact of liquefaction, if any, is negligible as the widening work is minor and no structure elements are involved.

7.3.2 Ground Rupture

As mentioned above, only the Concord fault is considered Caltrans-active for the purposes of fault rupture evaluation. Solano Way Undercrossing ramps are closest to the fault at 1000 feet. Based on work by Petersen et al (2011), no offset is expected on approximately located faults at this distance.

8. GEOTECHNICAL ANALYSES AND DESIGN

8.1 Geotechnical Recommendations for Ramp Widening

Table 4 summarizes geotechnical recommendations for ramp widening at all eleven locations. We recommend 2H:1V to 1:1 cut slope or 2H:1V fill slope for most locations. For some minor fill slopes, we recommend 1:1 asphalt concrete fill (Figure 5). Geosynthetic reinforced embankment (Figure 6) is recommended at Alhambra Avenue E/B, between Sta. 16+25 and 17+60. The only structural solution is a soil nail wall at Pine Street W/B, between Sta. 21+90 to 29+15, with maximum height of approximately 10 feet.

For geosynthetic reinforced embankment (Figure 6), the geosynthetic shall be geogrid with long-term design strength (LTDS) of 1200 plf. The geogrid shall be 5 feet wide, with vertical spacing of one foot. The width of excavation shall be at least 8 feet to allow the compactor to operate on. Please consult District Office of Landscape Architecture for erosion control details on finished slope.

Table 4. Geotechnical Recommendations for Ramp Widening

Location	Stationing	Recommendation
Pine Street W/B	21+00 – 21+90	1:1 cut slope
	21+90 – 29+15	Soil nail wall
	29+15 – 30+00	1:1 cut slope
Pine Street E/B	10+45 – 21+00	2H:1V cut slope
	21+00 – 21+80	1.5H:1V cut slope
Pacheco Boulevard W/B	20+70 – 22+20	1.5H:1V cut slope
	23+70 – 31+20	1.5H:1V cut slope
Pacheco Boulevard E/B	20+00 – 27+60	2H:1V cut slope
Morello Avenue W/B	20+65 – 27+05	2H:1V fill slope
	27+05 – 29+80	1:1 asphalt fill slope
	29+80 – 33+10	2H:1V fill slope
Morello Avenue E/B	11+50 – 19+25	2H:1V fill slope
Solano Way W/B	20+00 – 28+75	2H:1V fill slope
	28+75 – 29+50	1:1 asphalt fill slope
Solano Way E/B	10+50 – 19+20	2H:1V fill slope
	19+20 – 20+00	1:1 asphalt fill slope
Alhambra Avenue E/B	16+00 – 16+25	1:1 asphalt fill slope
	16+25 – 17+60	Geosynthetic reinforced embankment
	17+60 – 17+80	1:1 asphalt fill slope
Willow Pass Road W/B	10+00 – 15+00	2H:1V cut slope
	15+00 – 18+55	2H:1V fill slope
	18+55 – 25+70	1:1 asphalt fill slope
Port Chicago Highway W/B	15+00 – 15+90	2H:1V fill slope
	24+50 – 26+50	2H:1V or flatter fill slope

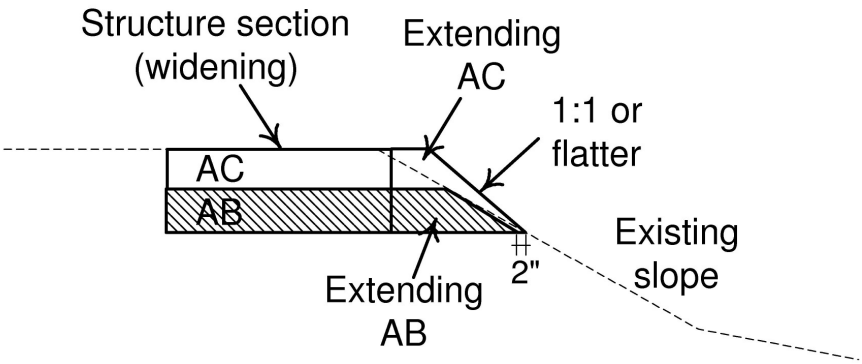


FIGURE 5: Asphalt Concrete Fill Slope

04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152700 JANUARY 2013

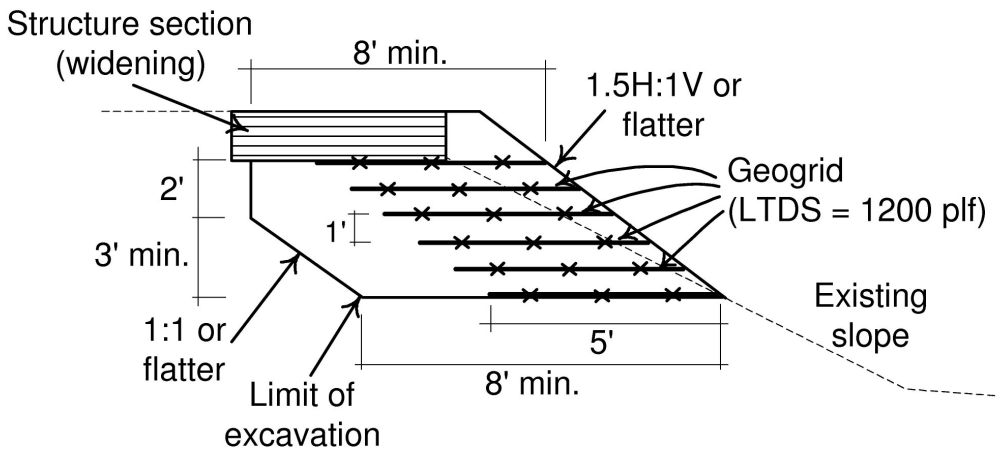


FIGURE 6: Geosynthetic Reinforced Embankment

04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152700 JANUARY 2013

8.2 Cuts and Excavations

The majority of cuts are at Pine Street W/B, Pine Street E/B, and Pacheco Boulevard W/B. Excavation difficulty is anticipated at Pine Street W/B and Pacheco Boulevard W/B where subsurface materials are predominantly soft sedimentary rocks.

The materials obtained from excavation may be used for construction of the embankments if they meet the requirement of the Standard Specifications for Imported Borrow. Otherwise, they may be used for contour grading and landscaping purposes.

8.2.1 Grading Factors

Use 0.95 and 0.90 for earthwork factor for embankment material and native soil (respectively) excavated and reused in embankment construction. Use 1.0 for the earthwork factor for materials obtained from obliteration of existing roadway.

8.3 Embankment Fills

In general, fill material should be a soil or soil/rock mixture that is free of organic matter and other deleterious substances in accordance with Section 19 of Caltrans Standard Specifications. In addition, imported borrow material should have a minimum R-value of 15. Asphalt concrete and aggregate base that are pulverized to meet the size requirements for fill material could be reused as fill.

All fill should be constructed in accordance with Caltrans Standard Specifications Section 19, entitled "Earthwork." Relative compaction of not less than 90% should be achieved in all fill materials, except where 95% is required.

8.4 Earth Retaining Systems

As mentioned above, soil nail wall is recommended at Pine Street W/B, between Sta. 21+90 to 29+15, with maximum height of approximately 10 feet. A separate Foundation Report for this wall will be prepared for Structure Design.

8.5 Minor Structures

A number of CMS signs are proposed throughout the project area. Geotechnical investigations for these signs are still ongoing. The results will be provided in a separate GDR.

9. MATERIAL SOURCES

This section is covered in the Materials Report.

10. MATERIAL DISPOSAL

Excess material shall be disposed of outside State R/W as per Section 19 of the Standard

Specifications.

11. CONSTRUCTION CONSIDERATIONS

11.1 Differing Site Conditions

See Section 4-1.06 of the 2010 Caltrans Standard Specifications for details. Early communication between the Resident Engineer, the Contractor and the Office of Geotechnical Design – West is recommended as soon as differing site conditions are recognized during construction.

12. APPENDIX

A. Laboratory Test Results

Appendix A

Laboratory Test Results

Results sent to: SAMUEL AWAD

Division of Engineering Services
Materials Engineering and Testing Services
Corrosion and Structural Concrete Field Investigation Branch

Report Date: 9/20/2012

Reported by Michael Mifkovic

TEST SUMMARY REPORT - SOIL

EA **04-152700**

EFIS: **0400020911**

Dist/Co/Rte/PM: **04 / CC /4/ / 8-25 PM**

CORROSION LAB #	TL101 #	BORE #	DEPTH (FT) START	DEPTH (FT) END	MINIMUM RESISTIVITY[1] (ohm-cm)	pH[1]	CHLORIDE CONTENT[2] (ppm)	SULFATE CONTENT[3] (ppm)	IS SAMPLE CORROSIVE?
SOIL SAMPLE FROM:									
CR20120362†	C633303	RC-12-001A	3	15	452	5.5	458	3400	YES
CR20120365†	C633309	A-12-010	0	5	778	7.2	18.6	1000	NO

This site is corrosive to foundation elements (see note below).

Controlling corrosion parameters are as follows:

- pH is 5.5 or less
- Sulfate concentration is 2000 ppm or greater

†Comment: REC'D FROM D4 LAB

Note: For structural elements, the Department considers a site corrosive if one or more of the following conditions exist: pH is 5.5 or less, chloride concentration is 500 ppm or greater, sulfate concentration is 2000 ppm or greater. MSE backfill shall conform to the requirements of section 47-2.02C Structure Backfill in the 2010 Standard Specifications.

[1]CTM 643, [2]CTM 422, [3]CTM 417

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

ATTACH FORM DCR-TL-101 F

680

FRONT

TEST NO.	DATE RECEIVED	APPROVED BY	☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
2574-4P	8.24-12		☐ RESIDENT ENGINEER
	CALC. BY	DATE REPORTED OCT 03 2012	☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 μm					
300 μm					
150 μm					
75 μm					
5 μm					
1 μm					

REMARKS:

REGISTIVITY = 1112

PH = 7.5

REPORT OF TESTS ON: Soil

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK, BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK, BY EXP. PRESS. mm					

TEST RESULTS	SPEC.
LL. P.L. P.I.	
CV	

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

SURFACE	S.E.	AS REC'D.
BASE		CRUSHED
SUBBASE		COMBINED
	LART GRADE	100 REV.
GRAVEL EQUIVALENT FACTOR		500 REV.
TRAFFIC INDEX	DUR.	D_f
R VALUE EXUDATION PRESSURE		D_c
R VALUE EXPANSION PRESSURE	% CRUSHED PARTICLES	
R VALUE AT EQUILIBRIUM SPEC.	% MOISTURE BY O.D.	

REL. COMPACTION DATA

	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C 633313

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPTANCE TESTS

INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☒ DIST. LAB

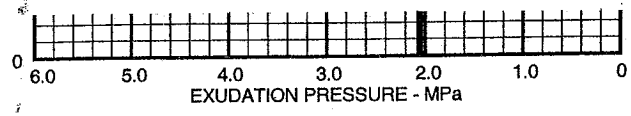
FIELD NO.
DIST. LAB NO.
LOT NO.
SHIPMENT NO.
P.O. OR REQ. NO.
AUTHORIZATION NO.

SAMPLE OF: Soil
FOR USE IN: Foundation
SAMPLE FROM: RC-12-004 (Pine St WB)
DEPTH: (2'—4')
LOCATION OF SOURCE:

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)
AND IS ON E OF A GROUP OF
SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)
OWNER OR MANUFACTURER
TOTAL QUANTITY AVAILABLE
TEST RESULTS DESIRED ☒ NORMAL ☐ PRIORITY
DATE NEEDED
REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLEED
BY S. Awad TITLE T.E
DIST, CO, RTE, PM: 04-CC-4 PM 8.0/25.0
LIMITS: 04-152700
CONT. NO.
FED. NO.
RES. ENGR. OR SUPT.
ADDRESS
CONTRACTOR: S. Awad

MAIL TO SAME DESTINATION AS SAMPLE



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

ATTACH FORM DCR-TL-101 H7

FRONT

TEST NO.	DATE RECEIVED	APPROVED BY	☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
4286-5P	8, 24-12		☐ RESIDENT ENGINEER
	CALC. BY	DATE REPORTED OCT 0 3 2012	☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

REMARKS:
RESISTIVITY = 563
PH = 3.2
(*) ADDITIONAL SENT TO SACTO. -HQ FOR SULFATE & CHLORIDE TEST.

REPORT OF TESTS ON: SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK, BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK, BY EXP. PRESS. mm					

TEST RESULTS		SPEC.
LL. P.L. P.I.		
CV		
S.E.	AS REC'D.	
	CRUSHED	
	COMBINED	
LART	GRADE 100 REV.	
	500 REV.	
DUR.	D_f	
	D_o	
% CRUSHED PARTICLES		
% MOISTURE BY O.D.		

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA

	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

SURFACE
BASE
SUBBASE
GRAVEL EQUIVALENT FACTOR
TRAFFIC INDEX
R VALUE: EXUDATION PRESSURE
EXPANSION PRESSURE
AT EQUILIBRIUM SPEC.
INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C 633312

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPTANCE TESTS

INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☒ DIST. LAB

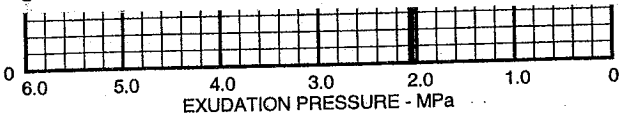
FIELD NO.
DIST. LAB NO.
LOT NO.
SHIPMENT NO.
P.O. OR REQ. NO.
AUTHORIZATION NO.

SAMPLE OF: Soil
FOR USE IN: Foundation
SAMPLE FROM: RC-12-005
DEPTH: (15 — 25)
LOCATION OF SOURCE

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)
AND IS ON E OF A GROUP OF
SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)
OWNER OR MANUFACTURER
TOTAL QUANTITY AVAILABLE
TEST RESULTS DESIRED ☒ NORMAL ☐ PRIORITY
DATE NEEDED
REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLEED 8/24
BY S. Awad TITLE T.E
DIST, CO, RTE, PM 04-29-Nap-PM KT.11
LIMITS 0K-4A0900 (1104)
CONT. NO.
FED. NO.
RES. ENGR. OR SUPT.
ADDRESS
CONTRACTOR

MAIL TO SAME DESTINATION AS SAMPLE



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

ATTACH FORM DCR-TL-101 K — FRONT

TEST NO.	DATE RECEIVED	APPROVED BY	☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
2574-5P	8-24-12		☐ RESIDENT ENGINEER
	CALC. BY	DATE REPORTED OCT 03 2012	☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 μm					
300 μm					
150 μm					
75 μm					
5 μm					
1 μm					

REMARKS:
RESISTIVITY = 1603
PH = 8.0

REPORT OF TESTS ON: SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK, BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK, BY EXP. PRESS. mm					

TEST RESULTS		SPEC.
LL. P.L. P.I.		
CV		
S.E. AS REC'D.		
S.E. CRUSHED		
S.E. COMBINED		
LART GRADE 100 REV.		
LART 500 REV.		
DUR. D_f		
DUR. D_c		
% CRUSHED PARTICLES		
% MOISTURE BY O.D.		

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA

	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

SURFACE
BASE
SUBBASE
GRAVEL EQUIVALENT FACTOR
TRAFFIC INDEX
R VALUE: EXUDATION PRESSURE
R VALUE: EXPANSION PRESSURE
R VALUE: AT EQUILIBRIUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C 633314

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPTANCE TESTS

INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB

☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☒ DIST. LAB

FIELD NO.
DIST. LAB NO.
LOT NO.
SHIPMENT NO.
P.O. OR REQ. NO.
AUTHORIZATION NO.

SAMPLE OF: Soil
FOR USE IN: Foundation (Pacheco WB)
SAMPLE FROM: RC-12-007 (1-3)
DEPTH
LOCATION OF SOURCE

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)	AND IS ON E OF A GROUP OF	SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

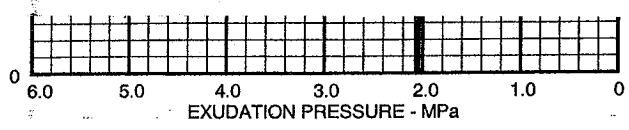
OWNER OR MANUFACTURER

TOTAL QUANTITY AVAILABLE	TEST RESULTS DESIRED	DATE NEEDED
	☒ NORMAL ☐ PRIORITY	

REMARKS: Corrosion Test

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLEED
BY S. Awad TITLE T.E
DIST, CO, RTE, PM: 04-CC-4 PM 8-0/25.0
LIMITS
04-152700
CONT. NO.
FED. NO.
RES. ENGR. OR SUPT.
ADDRESS
CONTRACTOR

MAIL TO SAME DESTINATION AS SAMPLE



State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. GHULAM POPAL
Branch Chief
Design SHOPP

Date: July 25, 2013

File: 4-CC-4 PM 8.0/25.0
4-CC-242 PM 0.0/3.4
EA 0412000628 (04-152721)
Install Ramp Metering
& TOS Elements
FPI Project

Attention: Emarnan Pongpairoj
Katie Chounramany

From: BRIAN W. BARBER
Materials Design Engineer
Office of Engineering Services - Materials B

Subject: Supplemental Structural Section Recommendations-PS&E

This memorandum is in response your July 17, 2013 memorandum requesting supplemental Full-Depth HMA pavement structural section design recommendations in preparation of a PS&E for a Freeway Performance Initiative (FPI) project (EA 152721) to install ramp metering and TOS at various locations on Route CC-4 from West Alhambra Avenue to East of Loveridge Road (PM 8.0 to PM 25.0) and on Route 242 from Route 680 to Route 4 (PM 0.0 to PM 3.4) in Contra Costa County.

Work will also include widening and restriping ramps to add extra lane(s) for storage and/or preferential vehicles, maintenance vehicle pullouts, CHP enforcement pullouts, installation of detector loops in existing and new pavement, installation of meter signals, ramp approach warning signs, control box pads, and underground wiring. A CHP enforcement pullout and acceleration lane may be installed on the right side of the freeway. All ADA ramps within Caltrans R/W will be upgraded. There may be new barriers, guard railings and retaining walls at some or all of the locations.

Our office previously provided pavement recommendations in our August 8, 1912 memorandum which remains valid for this project, along with the updated supplemental recommendations as provided in this current memorandum.

Mr. Ghulam Popal
Attn: Emarnan Pongpairoj
Katie Chounramany
July 25, 2013

Information provided to us for review on this project attached with the referenced 07/17/2013 memorandum included the following:

- A Site Location Map, plot dated 07/2/2013.
- Locations Of Construction, Sheets LC1, LC-2, and LC-3, plot dated 06/25/2013.
- Layout, L-1 through L-13, plot dated 06/21,24,25/2013.
- Traffic Index (T.I.) data for this project provided in your 07/17/2013 E-mail.

In addition, your office provided Traffic Index (T.I.) information and ramp locations for the requested Full-Depth HMA design in a July 17, 2013 E-mail.

Full-Depth Pavement Structural Section Design Recommendations

Note: We recommend the following full-depth structural sections be used for relatively narrow (i.e. 6 feet or less) new pavement widening (including combined new travelled way and shoulder width).

Full-Depth Design* (T.I.=12.0) for Route 4 Ramps at the following locations:

- Location # 6-EB onramp from Alhambra Ave.
- Location # 14-EB onramp from Pine St.
- Location # 23-EB onramp from Morello Ave.
- Location # 29-EB onramp from Pacheco Blvd.
- Location # 52-WB onramp from Willow Pass Rd.

In Cut: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.81'$
1.50' HMA(A); 0.35' AS(4)
In Fill: Design Parameters: $T.I._{20\text{-year}} = 12.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 3.32'$
1.40' HMA(A); 0.35' AS(4)

Full-Depth Design* (T.I.=10.0) for Route 4 Ramps at the following locations:

- Location # 8-WB onramp from Pine St.
- Location # 14-WB onramp from Pine St.
- Location # 18-WB onramp from Morello Ave.
- Location # 28-WB onramp from Pacheco Blvd.
- Location # 40-WB onramp from Solano Way
- Location # 41-EB onramp from Solano Way
- Location # 43-WB onramp from Willow Pass Rd.

In Cut: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Native} = 5$; $G.E._{Design} = 3.09'$
1.20' HMA(A); 0.35' AS(4)

Mr. Ghulam Popal
Attn: Emarnan Pongpairoj
Katie Chounramany
July 25, 2013

In Fill: Design Parameters: $T.I._{20\text{-year}} = 10.0$; Subgrade Soil R-value $_{Fill} = 15$; $G.E._{Design} = 2.76'$
1.10 HMA(A); 0.35' AS(4)

Notes:
HMA(A) = Hot Mix Asphalt (Type A)
AS (4) = Aggregate Subbase (Class 4)

*Full-Depth design to apply to both the travelled-way and shoulder new pavement structural section.

If you have any comments or questions, please contact Brian Barber at 622-5490.

c: Daily File, Route File

BBarber/bb/CC-4/242, EA 0412000628 Supplemental Full-Depth Struc. Sec. Recom.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: MR. MUTHANNA OMRAN
Acting Branch Chief
Bridge Design Branch #16
Office of Bridge Design West

Date: August 8, 2013

File: 04-CC-4-PM R8.0/25.0
04-152721
Soil Nail Walls

From: SUNNY YANG / SAMUEL AWAD
Transportation Engineers
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Foundation Report for Four Soil Nail Walls

This Foundation Report is prepared in response to your request dated June 24, 2013 for the proposed four soil nail walls on Route 4, in Contra Costa County. Two of these walls are located at Pacheco Boulevard W/B on ramp (PM R11.7); the other two are located at Pine Street W/B on ramp and Pine Street E/B on ramp (PM R9.1), respectively. This is part of the Freeway Performance Initiative (FPI) project to widen ramps and install ramp metering and Traffic Operations System (TOS) elements at various locations on Route 4 and Route 242.

1. SCOPE OF WORK

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

- Field geotechnical exploration, including drilling exploratory borings at the project site;
- Laboratory testing for corrosion on selected samples;
- Foundation design analysis; and
- Preparation of this Foundation Report.

2. PROJECT DESCRIPTION

Table 1 lists the lengths and maximum heights of all four walls.

Table 1. Summary of wall data

Wall location	Length (ft)	Maximum height above FG (ft)
Pacheco Blvd W/B B4	105	4
Pacheco Blvd W/B B5	190	8
Pine Street W/B	740	10
Pine Street E/B	615	10

The vertical datum used in this report is NAVD 88. The horizontal datum is NAD 83.

3. EXCEPTION TO POLICY

There is no known exception to Department policy relating to the investigation or design of the proposed soil nail walls.

4. FIELD INVESTIGATION AND TESTING PROGRAM

A total of seven geotechnical exploratory borings were drilled to investigate subsurface soil conditions for the proposed ramps widening. All were rotary wash borings, using a truck-mounted drill rig. Of the seven borings, two were vertical borings and five were horizontal borings. Table 2 lists the locations and depths of these borings and the dates they were drilled. The horizontal borings were typically 3 to 4 feet above roadway elevation, at a downward inclination of 3 degrees from horizontal. The vertical borings were drilled at the roadway elevation.

All samples were visually identified and recorded in the field log using standard method. For all borings, Pocket Penetrometer (PP) tests were conducted on soil samples showing apparent cohesion. Further, for rock samples, Rock Quality Determination (RQD) and percent of sample recovery for each run were also recorded. For all horizontal borings, continues core samples were collected in boxes. In the vertical borings, Standard Penetration Tests (SPT) were performed at 5-feet interval.

Table 2. Summary of Boring Location, Depth, and Groundwater Data

Boring No.	Location, Stationing, Offset	Type of Boring	Boring Elevation (ft)	GW Depth (ft)	Boring Depth (ft)	Date Drilled (GW Measured)
RC-12-001A	Pine WB, 22+89, 37.7’ Rt.	Horizontal	213.2	*	25	6/26/12
RC-12-003	Pine WB, 25+36, 32.4’ Rt.	Horizontal	203.7	*	30	6/26/12
RC-12-004	Pine WB, 24+74, 20.6’ Rt.	Vertical	199.1	7	31.5	8/21/12 (8/22/12)
RC-12-005	Pacheco WB, 21+96, 41.6’ Rt.	Horizontal	53.7	*	33	6/27/12
RC-12-006	Pacheco WB, 28+46, 25.1’ Rt.	Horizontal	75.4	*	30	8/22/12
RC-12-007	Pacheco WB, 27+98, 15.8’ Rt.	Vertical	69.9	7	31.5	8/22/12 (8/24/12)
RC-12-008	Pine EB, 15+24, 32.7 Rt.	Horizontal	189.0	*	25	8/20/12

* Groundwater was not measured.

5. LABORATORY TESTING PROGRAM

Soil samples were taken at select borings for corrosion testing. The test results are shown in Section 8 below.

6. SITE GEOLOGY AND SUBSURFACE CONDITIONS

6.1. Regional Geology

The project is located in the northern portion of the Diablo Mountain Range within the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The central portion of the project is located in the Diablo Valley, a broad, sediment-filled basin completely surrounded by the northern portion of the Diablo Mountain range. The eastern portion of the project is located on the eastern flank of the Martinez Ridge of the Diablo Mountain Range. The eastern portion of the project is located on the foothills of the northern Diablo Mountain Range, adjacent to the Sacramento River Delta.

6.2. Site Geology

In general the portion of the project located in the Diablo Valley is underlain by Quaternary alluvial deposits and the portion of the project passing over the foothills of the Diablo Mountain Range is underlain by bedrock. The depositional environment of the Quaternary deposits comprises a transgressive sequence of alluvial fan and fan-delta deposits.

6.3. Topography

The project is located at the northern part of Contra Costa County, which is located at the northern end of the Diablo Range of Central California. It is bounded on the north by Carquinez Strait, through which flows 27% of California's surface water runoff (USGS, 1997). The County is bordered to the west by the San Francisco Bay, to the east by the San Joaquin Valley, and to the south by the Livermore Valley. Contra Costa is one of the nine Bay Area counties with streams that are tributaries to San Francisco Bay. Most of the county is mountainous with steep rugged topography. Mount Diablo, in the center of the county, is one of the highest peaks in the Bay Area, reaching an elevation of 1173 meters (3,849 ft). Although the project extends over two spur ridges, the majority of the project is located on relatively low, flat lying ground of the Clayton-Concord Valley. According to the USGS topographic maps for the area, the low point of the project, along the northern margin of the Diablo Valley, is located at an elevation of 20 feet above mean sea level. The high point of the project, at the crest of a spur ridge of Mount Diablo, is located at an elevation of 475 feet above mean sea level.

Overall drainage within the project limits flows to the north to the Sacramento River Delta and Carquinez Strait, and ultimately flowing west to the San Francisco Bay.

6.4. Subsurface Conditions

The subsurface soil conditions at the wall locations are evaluated using the data obtained from the borings drilled for this project (Refer to Section 5) and from available as-built plans. The subsurface soil conditions at these locations are described below. Detailed descriptions of the foundation soils and boring locations are presented on the LOTB sheets, which should be included in the Contract Plans.

Pine Street W/B Wall

Based on the two horizontal borings drilled on the slope (RC-12-001A and RC-12-003), the subsurface materials on the slope are predominantly soft to moderately hard sandstone, with zero to 15 feet cover of dense clayey sand or stiff sandy clay (Pocket Penetrometer PP value = 1.0 – 1.5 tsf). The vertical boring (RC-12-004) shows that subsurface soil under the ramp pavement is very dense sand (SPT blow count $N_{60} > 50$).

Pine Street E/B Wall

Based on the horizontal boring drilled on the slope (RC-12-008), the subsurface materials on the slope are predominantly medium stiff to very stiff sandy silt and silty/clayey sand (PP value = 0.5 – 2.5 tsf). Soft siltstone bedrock was encountered at 17 feet depth (along the direction of boring).

Pacheco Boulevard W/B Wall B4

Based on the horizontal boring drilled on the slope (RC-12-005), the subsurface material is soft claystone (PP value = 2.0 – 4.0 tsf).

Pacheco Boulevard W/B Wall B5

Based on the horizontal boring drilled on the slope (RC-12-006) and one adjacent vertical boring (RC-12-007), the subsurface material on the slope is soft siltstone/claystone with PP value greater than 1.5 tsf.

6.5. Groundwater

Groundwater was measured at 7 feet depth (Elevation 192 feet) in vertical boring RC-12-004 on August 22, 2012 (Table 1). Groundwater was measured at 7 feet depth (Elevation 62.9 feet) in vertical boring RC-12-007 on August 24, 2012 (Table 1). Groundwater was not recorded at Pine

Street E/B at the time of drilling. Note that groundwater level typically fluctuates with season and correlates with the local geology and topography.

7. SCOUR EVALUATION

No scour issue exists at all the wall locations.

8. CORROSION EVALUATION

According to current Caltrans Corrosion Guidelines (V2.0, November 2012), a soil is considered non-corrosive for structure foundation elements, if the pH value is 5.5 or greater, chloride concentration is 500 ppm or less, and sulfate concentration is 2000 ppm or less. A minimum resistivity of less than 1000 ohm-cm is also an indicator of higher propensity for corrosion. Based on our laboratory corrosion test performed on four soil samples (Table 3), the soil materials at Pine Street W/B and Pacheco Boulevard W/B are considered corrosive. The soil at Pine Street E/B may be considered corrosive too.

Table 3. Soil Corrosion Test Summary

Location	Sample ID No.	Location	Sample Depth (ft)	Min. Resistivity (ohm-cm)	pH	Chloride content (ppm)	Sulfate content (ppm)	Is sample corrosive
RC-12-001A	-	Pine St. W/B	3 – 15	452	5.5	458	3400	Yes
RC-12-004	C633313	Pine St. W/B	2 – 4	1112	7.5	-	-	No
RC-12-005	C633312	Pacheco Blvd W/B	15 – 25	563	3.2	-	-	Yes
RC-12-007	C633314	Pacheco Blvd W/B	1 – 3	1603	8.0	-	-	No

9. SEISMIC RECOMMENDATIONS

The Concord fault is included in an Alquist-Priolo Earthquake Fault Zone because it is sufficiently active (Historic/Holocene active) and well-defined. The Concord Fault zone intersects the project alignment approximately at Route 4 between PM 13.31 and 13.53, which is 1.0 mile east of Pacheco Blvd. The Contra Costa Shear Zone, which is 1.3 miles west of Pine Street, is currently not considered Caltrans-active. Table 4 lists these two faults and maximum credible earthquake magnitudes that can be generated. Therefore, the potential of fault rupture hazard at all four wall locations is minimum.

Table 4. Adjacent faults and maximum magnitudes *

Fault	Distance from project (Miles)	Max. Magnitude (M_{max})
Concord	1.0 east from Pacheco Blvd	6.6
Contra Costa Shear Zone	1.3 west from Pine Street	6.5

*Caltrans ARS online v2.2.06

Based on the boring logs, the soil profiles at all wall locations are classified as Class C (very dense soil and soft rock) with shear wave velocity of top 100 ft (30 m) V_{S30} ranging from 1200 to 2500 ft/s. Liquefaction potential is minimum at all locations.

For seismic stability analysis of the soil nail walls, the Peak Ground Acceleration (PGA) values at the wall locations are required. Caltrans ARS Online program (v2.2.06) was used to calculate the PGA values, and the results are summarized in Table 5 below. The actual seismic coefficient used in the stability analysis is chosen as K_h= PGA / 3.

Table 5. Calculated Seismic Coefficients Used in Stability Analysis

Location	Vs_{30} (ft/s)	PGA (USGS 5% in 50 years)	Seismic coefficient K_h
Pine Street	1200	0.69	0.23
	2500	0.59	
Pacheco Blvd	1200	0.77	0.26
	2500	0.68	

10. FOUNDATION RECOMMENDATIONS

10.1. Soil Nail Wall Design

The design for the soil nail walls is performed using Caltrans computer program SnailWin Version 3.10. The following limiting criteria were used in the design of the walls. Most of them should be included in the contract plan.

1. The minimum factor of safety with seismic loading (pseudo-static analysis),
   $FOS_{dynamic} = 1.1$

2. The minimum factor of safety for staged construction (static analysis),
   $FOS_{construction} = 1.5$

3. Spacing of the nails:
   Maximum vertical spacing of the nails $S_{v,max}$ = 5 feet;
   Minimum vertical spacing of the nails $S_{v,min}$ = 1.5 feet;
   Horizontal spacing of the nails $S_{h,max}$ = 5 feet;
   Maximum horizontal distance between the beginning/end of wall and the first/last soil nail = 2.5 feet;
   Minimum horizontal distance between the beginning/end of wall and the first/last soil nail = 1.5 feet;
   Maximum vertical distance between the bottom of the wall and the lowermost row of soil nails = 3.5 feet;
   Minimum vertical distance between the bottom of the wall to the lowermost row of soil nails = 2 feet;

Vertical distance between the top of the cut and the topmost row of soil nails = 2 feet;
Vertical distance between the bottom of the wall and the finished grade = 2 feet;
If a gutter is constructed behind the wall, then
Maximum vertical distance between the top of the wall and the top of the cut = 3 feet;
Minimum vertical distance between the top of the wall and the top of the cut = 0.5 feet;

4. The inclination angle of the nails to the horizontal = 15 degrees.

5. Soil nail profile lines shall be parallel to the top of the wall except for the lowest line, which shall be parallel to the bottom of the wall.

6. Material used for soil nails shall comply with ASTM Designation:
A-615 / A-615M, Grade 60, #9 or greater bars

7. The average soil parameters used for the design are:

Table 6. Soil Parameters Used in Soil Nail Design

Location	Friction angle ϕ (deg)	Cohesion c (psf)	Total unit weight γ (pcf)
Pacheco Blvd W/B B4	0	1500	135
Pacheco Blvd W/B B5	0	1500	135
Pine Street W/B	0	1500	135
Pine Street E/B	0	1000	135

8. Ultimate punching shear capacity = 36 kips.
Design pull out resistance = 1.6 kips/ft for all walls.

9. The embedment depths of the soil nail assemblies have been determined according to the latest wall profiles submitted to our office. The results are as follows:

Table 7. Design Soil Nail Lengths

Wall location	Soil Nail Length from Top to Bottom (ft)
Pacheco Blvd W/B B4	10, 8
Pacheco Blvd W/B B5	15, 10
Pine Street W/B	15, 15, 10
Pine Street E/B	20, 15, 10

10. Due to the corrosive nature of the soils at the sites (see section 8 above), appropriate measures, such as epoxy coating or double corrosion protection, should be used to protect the soil nails from corrosion.

10.2. Wall Drainage System

Although groundwater was not encountered or relatively deep during drilling operations, in order to protect against any possible hydrostatic pore pressure build up behind the wall and to direct surface runoff away from the wall, we recommend constructing proper internal and external draining systems as follows.

10.2.1. Internal drainage system

- Place one foot wide prefabricated geotextile drain strips (with the geotextile side against the ground between the nails) at a horizontal spacing of every 5 feet prior to applying shotcrete. The geotextile drain strips shall start from the bottom of the proposed gutter (see below) and extend to the bottom PVC pipe weep hole.

- Install PVC pipe (2 to 3 inches in diameter) weep holes through the shotcrete face at the center and base of the prefabricated geotextile drainage strips.

10.2.2. External drainage system

- A concrete drainage gutter/ditch is recommended behind the top of the wall to collect the surface water. The slope of the gutter/ditch should follow the top of wall profile.

- A Drainage Inlet (DI) and/or a downdrain may be needed at the beginning and the end of the wall, and at the lower points along the wall height, to collect the surface runoff from the proposed gutter.

10.3. Wall Facing System

The design of the wall facing system is the responsibility of the Office of Structures Design and District Landscape Architecture Branch.

11. CONSTRUCTION CONSIDERATIONS

11.1. Construction Zones

Soil nail walls are broken into zones for construction control. For Pacheco Blvd W/B B4 and B5, the entire wall is one zone. For Pine Street W/B and E/B, the wall zones are given below.

Table 8. Construction Zones for Pine Street W/B Wall

Wall Zone	Beginning Stationing	End Stationing
1	20+20	23+00
2	23+00	25+00
3	25+00	27+60

Table 9. Construction Zones for Pine Street E/B Wall

Wall Zone	Beginning Stationing	End Stationing
1	10+00	12+00
2	12+00	14+00
3	14+00	16+15

11.2. Excavation

Where development of a working bench width by excavation is not feasible, other construction methods will be needed. These could include construction of an earth embankment (may or may not be mechanically reinforced) against the existing slope, using a crane and a secured platform to mount the equipment on it and raise them to the desired elevation, or drilling from a working bench at the top of the wall. The Contractor should include the costs associated with one or combination of these methods in accordance with the plans and Special Provisions.

Excavation shall be approved by the Engineer and verified by stability tests as described in the Special Provisions. Each zone of the cut face must be inspected by the Engineer for adverse bedding planes and for seepage of groundwater (if encountered). If such adverse ground conditions are encountered, representatives from our Office must be contacted to assess the situation. Installation of additional soil nail assemblies may be required prior to the excavation of the next stage (lift) if potential blocks are found.

The Contractor must make every effort to minimize the disturbance of the ground to be retained, and must provide a reasonable smooth and regular wall profile. Any loose areas of the face must be removed prior to the facing support being applied.

11.3. Drilling Difficulties

The exploratory borings encountered soft to moderately hard sandstones at Pine Street W/B. Hard drilling may be anticipated at this location. Sandy and/or gravelly soils were encountered at Pine Street W/B, Pine Street E/B, and Pacheco Blvd W/B B4, hence caving may be anticipated. The Contractor shall utilize appropriate drilling method and/or equipment to mitigate such ground conditions. Before bidding, all prospective bidders are encouraged to inspect the representative core samples at Caltrans District 4 Material Laboratory located at 325 San Bruno Ave., San Francisco, CA 94103 (contact number 415-557-1370).

11.4. Prefabricated Drain Mats (Geotextile Drain Strips)

As mentioned above, one foot wide prefabricated drain mats, centered between the vertical dowel columns, shall be placed against the cut surface before placing shotcrete to provide drainage behind the shotcrete face. The vertical prefabricated drains must be extended to the base of the soil nail wall with each excavation lift and connected into the weep holes as shown on the plans. If localized damp areas are noted on the cut face, the width of the drainage product should be increased to collect all seepage water.

11.5. Performance Monitoring

Observation and performance monitoring shall include the following:

Monitor for local movement and deflection of the facing using surveying method and visual inspection. The survey points shall be at critical locations specified by the Engineer. The Resident Engineer must closely monitor movement of the top of the soil nail retaining wall. Once the shotcrete is placed on the lowermost lift, the wall should be monitored twice a week for the first three weeks and once a week for the following three weeks. Both electronic and hard copies of collected data shall be furnished to our Office for evaluation, following which the need for further monitoring shall be assessed. A movement greater than 3/1000 H (H = final height of the soil nail wall), at any location, would require detailed investigation.

12. DISCLAIMER AND CONTACT INFORMATION

The recommendations contained in this report are based on specific project information regarding structure type and location that have been provided by the Office of Bridge Design West. If any conceptual changes are made during final project design, the Office of Geotechnical Design West, Design Branch A should review those changes to determine if our foundation recommendations are still applicable. Any questions regarding the above recommendations should be directed to the attention of Hooshmand Nikoui at (510) 286-4811.

Attachment:

c: TPokrywka, HNikoui, Daily File

SYang/mm

Dist-County-Route: 04-CC-4&242

Post Mile Limits: R8.0/25.0&0.0/3.4

Project Type: Install Ramp Metering and TOS - FPI

Project ID (or EA): 0412000628 (EA 152721)

Program Identification: HB4N FPI

Phase: ☐ PID ☐ PA/ED ☒ PS&E

Regional Water Quality Control Board(s): San Francisco Bay RWQCB (RB2)

Is the Project required to consider Treatment BMPs? Yes ☒ No ☐

If yes, can Treatment BMPs be incorporated into the project? Yes ☒ No ☐

If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date: _____

Total Disturbed Soil Area: 15.0 acres Risk Level: 2

Estimated: Construction Start Date: 8/1/2014 Construction Completion Date: 9/1/2016

Notification of Construction (NOC) Date to be submitted: 7/1/2014

Erosivity Waiver	Yes ☐	Date: _____	No ☒
Notification of ADL reuse (if Yes, provide date)	Yes ☐	Date: _____	No ☒
Separate Dewatering Permit (if yes, permit number)	Yes ☐	Permit # _____	No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Emarnan Pongpairoj, Registered Project Engineer — 8/28/13 Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

for Eric Miranda — *Laurie Lau, Project Manager* — 8/29/2013 Date

Robert D. Braga — *Robert Braga, Designated Maintenance Representative* — 8/29/13 Date

FOR alex Mcdonald — *David Yam, Designated Landscape Architect Representative* — 8/28/13 Date

Norman Gonsalves — *Jae Myung Lee, District Design SW Coordinator or Designee* — 08/27/2013 Date

[Stamp Required for PS&E only]

STORM WATER DATA INFORMATION

1. Project Description

- Freeway Performance Initiative (FPI), a joint effort between the California Department of Transportation (Caltrans) and Metropolitan Transportation Commission (MTC), aims to improve system efficiency with active system management. As a part of the FPI, this project proposes to install ramp metering systems and widen 11 on-ramps by adding one or more lanes to increase storage capacity (i.e., 6 on westbound and 5 on eastbound in SR 4) along State Route (SR) 4 and SR 242 in Contra County (see Vicinity Map). The project limits extend from west of Alhambra Avenue to Loveridge Road on SR 4 and from Interstate 680 (I-680) to SR 4 on SR 242, a distance of approximately 20.4 miles.
- The project also proposes to install Traffic Operations System (TOS) equipment along the project limits and construct Maintenance Vehicle Pullouts (MVPs) and California Highway Patrol (CHP) Enforcement Areas at some of the on-ramp widening locations. The on-ramp locations to be widened are only on SR 4 and summarized in Table 1.

Table 1. Summary of on-ramp locations to be widened on State Route 4.

Location	Direction[1]	Post Mile	Ramp[2]	New Impervious Area (ac)		Reworked Impervious Area (ac)		Disturbed Soil Area (ac)	
1	EB	R8.72	Alhambra Avenue (NB)	0.23		0.09		0.38	
2a	WB	R9.05	Pine Street (SB)	0.25	0.81	0.13	0.38	0.61	2.06
2b	EB	R9.37	Pine Street (NB)	0.56		0.24		1.45	
3a	WB	R10.18	Morello Avenue (SB)	0.19	0.53	0.14	0.41	0.69	2.11
3b	EB	R10.49	Morello Avenue (NB)	0.34		0.27		1.42	
4a	WB	12.31	Pacheco Boulevard (SB)	0.31	0.53	0.22	0.30	0.88	1.16
4b	EB	12.35	Pacheco Boulevard (NB)	0.22		0.08		0.28	
5a	WB	R13.71	Solano Way (SB)	0.32	0.62	0.18	0.31	1.06	2.42
5b	EB	R13.94	Solano Way (NB)	0.31		0.13		1.36	
6	WB	R14.59	Port Chicago Highway Connector	0.32		0.19		1.63	
7	WB	R16.68	Willow Pass Road (SB)	0.34		0.18		0.75	
Total[3,4]				3.4		2.0		10.5	

Notes:

1. WB: Westbound, EB: Eastbound
2. NB: Northbound, SB: Southbound
3. For the entire project, new impervious area is about 3.4 ac; reworked impervious area is about 2.2 ac; and disturbed soil area is about 15.0 ac.
4. The existing impervious area for the entire project is about 25.3 ac and the impervious surface area after the project will be about 28.7 ac.

- As shown in Table 1, the total Disturbed Soil Area (DSA) is approximately 15.0 acres (ac), which includes storage and staging areas, temporary grading, cut and fill areas, new pavement, retaining walls, and pavement replacement areas. The total DSA includes the

seven widening locations (i.e., ~ 10.5 ac) and the other locations (i.e., ~ 2.8 ac) for Closed Circuit Television (CCTV), Changeable Message Sign (CMS), Traffic Management System (TMS) elements, and etc. The total net additional impervious area is about 3.4 ac, which will be resulted from the widening locations. The reworked impervious area about 2.2 ac, which includes the widening locations (i.e., ~ 2.0 ac) and the other locations (i.e., ~ 0.2 ac). The existing impervious surface is approximately 25.3 ac, and the impervious surface area after the project will be 28.7 ac.

- Since some portions of SR 4 and SR 242 within the project limits are identified as one of "Classified Landscaped Freeways", all landscape-related works will be consulted with Office of Landscape Architect.
- The District 4 Work Plan (Caltrans 2012) does not list any drinking water reservoirs or recharge facilities within the vicinity of the project.
- The cities of Martinez, Concord, Pittsburg, and Antioch are designated Municipal Separate Storm Sewer System (MS4) areas in Contra Costa County within the project limits.

2. Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

Hydrology & Groundwater

- Since the project is located within the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Region 2), the SFBRWQCB has jurisdiction over the project. The project is mainly within three Hydrologic Sub-Areas (HSAs) including Pittsburgh (HSA 207.31), Martinez (207.33), and Pittsburgh - in Delta (207.34) in Concord Hydrologic Area of Suisun Hydrologic Unit with average annual rainfall between 13 and 20.1 inches (Water Quality Planning Tool 2013).
- The project site is partly located within Pittsburg Plain (Basin ID: 2-4), Clayton Valley (Basin ID: 2-5), and Ygnacio Valley groundwater basin (Basin ID: 2-6) (Water Quality Control Plan or Basin Plan of SFBRWQCB and Groundwater Bulletin 118 2003). The Pittsburg Plain Groundwater Basin is located in northern Contra Costa County along the south shore of Suisun Bay. The basin is about 40 miles northeast of San Francisco. It is bounded by Suisun Bay on the north, on the east by the Tracy basin, and on the west by the Clayton basin. The Pittsburg Plain groundwater basin lies within the two major drainage basins of Kirker Creek and Willow Creek. These basins discharge into Suisun Bay. The topography of the area consists of mild sloping alluvial plains ranging in elevation from sea level to 100 feet. Average annual precipitation in the basin ranges from 15 to 18 inches, increasing from east to west.
- The Clayton Valley groundwater basin is bounded by Suisun Bay on the north, Mt Diablo Creek on the east, the Concord Fault on the west, which divides this separates this basin from the Ygnacio Valley groundwater basin, and the foothills of Mount Diablo on the south. The cities of Concord and Clayton overlie the Clayton Valley Basin. The topography of the area consists of gently sloping lowlands and hilly terrain ranging in elevation from sea level to 400 feet. The floor of the valley slopes gently to the northwest. Average annual precipitation in the basin ranges from 16 to 18 inches.
- On the other hand, the Ygnacio Valley groundwater basin is bounded by Suisun Bay on the north, by I-680 and Taylor Road on the west, by the Concord Fault, which separates

this basin from the Clayton Valley Groundwater Basin, on the east, and by the City of Walnut Creek on the south. The Contra Costa Canal, and the cities of Pleasant Hill and Walnut Creek overlie the basin. The topography of the area consists of gentle sloping lowlands ranging in elevation from sea level to 200 feet. The floor of the valley slopes gently to the northwest. Average annual precipitation in the basin ranges from 17 to 21 inches increasing from east to west.

Receiving Water Bodies

- The receiving water bodies on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments (SWRCB 2010) affected by the project are summarized in Table 2. The Grayson Creek is 303(d)-listed for stressors/pollutants such as Trash; the Walnut Creek and the Pine Creek are 303(d)-listed for Diazinon; and the Mt. Diablo Creek is 303(d)-listed for Diazinon and Toxicity. These receiving water bodies have also established Total Maximum Daily Loads (TMDLs) for all the listed pollutants as summarized in Table 2.
- The Basin Plan designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The beneficial uses for the water bodies within the project limits are also summarized in Table 2 according to the Basin Plans of the RWQCB (2011).

Table 2. List of the receiving water bodies potentially affected by the project.

Water Body	Route	Post Mile	303(d)-listed Pollutant/Stressor[1]	Beneficial Uses[2]
Grayson Creek	4	12.90	Trash (A)	COLD, MIGR, RARE, WARM, WILD, REC1, REC2
Walnut Creek	4	R13.40	Diazinon (B)	COLD, MIGR, RARE, SPWN, WARM, WILD, REC1, REC2
Mt. Diablo Creek	4	R16.00	Diazinon (B), Toxicity (A)	COLD, MIGR, RARE, SPWN, WARM, WILD, REC1, REC2
Contra Costa Canal	4	R20.05; R32	Not listed	Not listed
Pine Creek	242	R0.88	Diazinon (B)	COLD, MIGR, RARE, SPWN, WARM, WILD, REC1, REC2
Pittsburg Plain Groundwater Basin	4	various	Not listed	MUN (P), PROC (P), IND (P), AGR (P)
Clayton Valley Groundwater Basin	4	various	Not listed	MUN, PROC (P), IND (P), AGR (P)
Ygnacio Valley Groundwater Basin	4/242	various	Not listed	MUN (P), PROC (P), IND (P), AGR (P)

Notes:

1. (A): those requiring TMDLs; and (B): those being addressed by U.S. Environmental Protection Agency (USEPA) approved TMDLs
2. (P) means a potential beneficial use; all the others are existing ones. MUN: Municipal and Domestic Supply, AGR: Agricultural Supply, PROC: Industrial Process Supply, IND: Industrial Service Supply, COLD: Cold Freshwater Habitat, MIGR: Fish Migration, RARE: Preservation of Rare and Endangered Species, SPWN: Fish Spawning, WARM: Warm Freshwater Habitat, WILD: Wildlife Habitat, REC1: Water Contact Recreation, and REC2: Non-Contact Water Recreation.

Climatography

- The project is located in a Mediterranean climate region characterized by warm summers and mild wet winters and rainy season between October 15 and April 15 (Statewide Stormwater Management Plan 2003). The precipitation frequency (PF) data were obtained for the project location from the Precipitation Frequency Data Server of National Oceanic Atmospheric Administration (NOAA) (see attachment).
- The Western Regional Climate Center (WRCC) and National Climate Data Center (NCDC) of the NOAA of U.S. Department of Commerce (USDC) provide general climate information for Concord Wastewater Plant (Station ID 041967 from 1991 to 2012), Martinez Water Plant (ID 045378 from 1970 to 2012), and Port Chicago Naval Dep. (ID 047070 from 1946 to 1975), respectively. For the Concord Wastewater Plant, the mean annual temperature is 61.8°F, with a monthly average mean of 73.1°F in August and 49.4°F in January. The mean annual precipitation is 18.38 inches (see attachment). For the Martinez Water Plant, the mean annual temperature is 60.1°F, with a monthly average mean of 71.7°F in July and 46.9°F in January. The mean annual precipitation is 19.37 inches (see attachment). Finally for the Port Chicago Naval Dep., the mean annual temperature is 57.9°F, with a monthly average mean of 70.3°F in July and 44.5°F in January. The mean annual precipitation is 15.41 inches (see attachment).

Topography & Soil Characteristics

- This ecological subregion, Suisun Hills and Valleys (Subsection 261Aa), is an area of low hills north and south of the Carquinez Strait, and includes valleys between the hills, and plains at the west end of the Sacramento-San Joaquin River delta (Ecological Subregions of California 1997). The climate is hot and subhumid. It is very windy on hills adjacent to and north of the Carquinez Straight. This subsection contains mostly Cretaceous, Eocene, and Miocene marine sedimentary rocks and late Quaternary alluvium, and minor amounts of Pliocene nonmarine sediments and volcanic rocks. Runoff is rapid from hills, but slow across alluvial plains. All but the larger streams are dry through most of the summer. Natural lakes are absent.
- As shown in Table 3, the soil type within the project, especially at the ramp widening locations, consists mostly of Hydrologic Soil Group (HSG) D with some of B. Group B soils typically have moderately low runoff potential when thoroughly wet, having typical infiltration rates between 0.57 and 1.42 inches per hour or in/hr (Web Soil Survey 2013 and National Engineering Handbook Part 630 2010). Group D soils typically a very slow infiltration rate (i.e., high runoff potential) when thoroughly wet, having typical infiltration rates less than 0.06 in/hr.

Table 3. Soil characteristics at on-ramp widening locations.

Location	Direction[1]	Post Mile	Ramp[2]	Soil Map Unit Symbol[3]	Hydrologic Soil Group	Soil Erodibility (K) Factor
1	EB	R8.72	Alhambra Avenue (NB)	BaA	B	0.24
2a	WB	R9.05	Pine Street (SB)	BdF2, GbG	B (BdF2), D (GbG)	0.20 (BdF2), 0.24 (GbG)
2b	EB	R9.37	Pine Street (NB)	BdF2, LcE	B (BdF2), D (LcE)	0.20 (BdF2), 0.24 (LcE)
3a	WB	R10.18	Morello Avenue (SB)	TaC	D	0.32
3b	EB	R10.49	Morello Avenue (NB)	LcE	D	0.24
4a	WB	12.31	Pacheco Boulevard (SB)	PkC, GbG, GbE	D (all)	0.37 (PkC), 0.24 (GbG & GbE)
4b	EB	12.35	Pacheco Boulevard (NB)	PkC	D	0.37
5a	WB	R13.71	Solano Way (SB)	Oa, Cc	D (both)	0.24 (Oa), 0.20 (Cc)
5b	EB	R13.94	Solano Way (NB)	Cc	D	0.20
6	WB	R14.59	Port Chicago Highway Connector	AbD	D	0.20
7	WB	R16.68	Willow Pass Road (SB)	AbD, AbE	D (both)	0.20 (both)

Notes:

1. WB: Westbound, EB: Eastbound
2. NB: Northbound, SB: Southbound
3. BaA: Botella Clay Loam (0 to 2% slopes); BdF2: Briones Loamy Sand (30 to 50% slopes, eroded); GbG: Gaviota Sandy Loam (50 to 75% slopes); LcE: Lodo Clay Loam (9 to 30% slopes); TaC: Tierra Loam (2 to 9% slopes); PkC: Positas Loam (2 to 9% slopes); GbE: Gaviota Sandy Loam (15 to 30% slopes); Oa: Omni Clay Loam; Cc: Clear Lake Clay; AbD: Altamont Clay (9 to 15% slopes); and AbE: Altamont Clay (15 to 30% slopes)

Risk Level Determination

- Per Caltrans Project Risk Level Determination Guidance (2012), the sediment risk factor is determined from the product of the rainfall runoff erosivity factor (R), the soil erodibility factor (K), and the length-slope factor (LS). The R factor was determined from the US EPA's "Rainfall Erosivity Factor Calculator" or Fact Sheet 3.1 to be about 70 (USEPA 2012). The K factor for the project is 0.31 and the LS factor is 1.83. The watershed erosion estimate (i.e., product of these factors = R x K x LS) is 39.1 tons/acre, thus the project is classified as having a medium sediment risk (i.e., 15 to 75 tons/acre). The sediment risk factor input values are included in the attachments.
- The receiving water risk for this project is classified as high per the Statewide CGP GIS Webmap (Caltrans) and the GIS map prepared by the SWRCB.
- The combined medium sediment risk and high receiving water risk results in the project being classified as "Risk Level 2." The requirements for Risk Level 2 projects are presented in Attachment D of the CGP and are summarized in Section 6 of this report.

Other Data & Considerations

- The project would incorporate the use of temporary construction site Best Management Practices (BMPs) and permanent erosion control BMPs, which are summarized in this report, Storm Water Pollution Prevention Plan (SWPPP), and contract plans and specifications.
- The project does not require hydromodification mitigation since it does not create a new impervious area of 1 ac or more per each location.
- The project does not anticipated to require a 401 Certification from the RWQCB since there is currently no need for a 404 permit from U.S. Army Corps of Engineers (USACOE). A 404 permit will be required when a project involves dredging or fill to the Waters of the U.S.
- There are no known drinking water reservoirs and recharge facilities within the project limits.
- There is no known existing treatment BMP within the project limits.
- The soil containing Aerially Deposited Lead (ADL) will be not be used in this project.
- There are no known active cleanup sites within the project limits according to GeoTracker (SWRCB) and EnviroStor (Department of Toxic Substances Control).
- No additional Right-of-Way (R/W) would be incorporated for the incorporation of treatment BMPs.

3. Regional Water Quality Control Board Agreements

- It is required to consider incorporating Treatment BMPs, only because this project results in about 5.4 ac of new and reworked impervious surface when combined all ramp-widening locations (i.e., 7 locations) or about 5.6 ac for the entire project.
- However, there will be less than one acre of new and reworked impervious surface at each location individually except for the location number 2 (Pine Street). Thus, all other locations should not be required to consider incorporating treatment BMPs, if the project is divided into individual projects for each ramp widening location. Regardless, all types of Caltrans-approved Treatment BMPs were fully evaluated to the Maximum Extent Practicable (MEP).
- There are currently no negotiated understandings or agreements with SWRCB and RWQCBs pertaining to this project.

4. Proposed Design Pollution Prevention BMPs to be used on the Project.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

- Velocity or volume of downstream flow will increase from the construction of this project.
- Smooth transitions between culvert outlets, headwalls, wingwalls, and channels are considered as part of the project drainage design to reduce velocities and erosion potential.
- Most runoff from roadway surfaces will be conveyed by sheet flow to roadside vegetated ditches. Most existing ditches are completely established with native vegetation.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

- There will be cut/fill slopes due to ramp widening, however the cut/fill slopes will be minimized and conformed to the existing slopes.
- The project includes existing stabilized cut/fill slopes plus constructed conveyance systems. Disturbed slopes will be planted with comparable vegetation and maintained until vegetation is well established and self-sufficient.
- When possible slopes would be graded at 2:1 (horizontal:vertical or h:v) or flatter; furthermore, proposed cut and fill slopes are designed to tie into existing slopes that are also flat, which would allow for re-vegetation after construction. All projects incorporating new slopes steeper than 4:1 (h:v) must have an erosion control plan developed or approved by the District Landscape Architect. Any slopes steeper than 2:1 (h:v), a Geotechnical Design Report must be prepared by Geotechnical Services with concurrence from Maintenance.
- Slopes would be protected during construction through the use of temporary construction site BMPs; these measures are discussed in Section 5. Permanent erosion control would be achieved by utilizing compost incorporate and applying erosion control (hydroseeding) on disturbed slopes 4:1 (h:v) or flatter (including biofiltration strip areas), as well as placing rolled erosion control product (netting) and erosion control (hydroseeding) on disturbed slopes between 4:1 (h:v) and 2:1 (h:v).
- Permanent fiber rolls would be placed on proposed slopes and on slopes with existing erosion control concerns. The erosion control measures proposed for the project are shown on Erosion Control Plans.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

- Because the project is discharging into unlined roadside ditches and vegetated swales, energy dissipation devices at culvert outlets would be required. The locations of the proposed ditches and swales and the placement of energy dissipation devices are shown on Drainage Plans.
- Some drainage systems including inlets will be relocated as a result of the ramp widening and are shown on Drainage Plans.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

- Clearing and grubbing areas would be necessary due to ramp widening. The areas to be cleared consist mostly of brush and trees. Existing vegetation will be preserved to the MEP. Disturbed soil areas will be re-stabilized with permanent erosion control measures.
- Environmentally Sensitive Areas (ESAs), the areas that should be avoided due to highly sensitive habitats, would be protected from construction activities by the placement of highly visible Temporary Fence (Type ESA).

5. Proposed Permanent Treatment BMPs to be used on the Project

Treatment BMP Strategy, Checklist T-1

- Although this project combines seven widening locations together and each widening location except for the location no. 2 does not trigger the implementation of Treatment BMPs required by the RWQCB and SWRCB, Treatment BMPs will be incorporated into the project to the MEP.
- Delaware Filters, Multi-Chambered Treatment Trains (MCTTs), and Wet Basins are generally considered unfavorable because of local agency's vector control issues with standing water.
- Traction Sand Traps, Dry Weather Flow Diversions, and Gross Solid Removal Devices (GSRDs) are also considered infeasible based on their regional usage and requirements.
- The treatment BMPs mainly considered feasible are biofiltration strips or swales. The final types of BMPs will be determined at a later phase.
- Even if the project constraints does not allow the project to install biofiltration strips or swales, the proposed side slopes and the existing natural ditches will, partly if not completely, treat the roadway runoff by natural dispersion process. The natural dispersion is the process of treating stormwater runoff from roadway by infiltration in or near roadside areas.
- The percentage of the WQV or WQF treated is estimated at 0.9 ac, which is 15.4% of the new and reworked impervious area of 5.6 ac. The project is not be able to provide 100% treatment because of the site conditions, such as retaining walls, steep side slopes, drainage patterns, profiles, and contours.

Biofiltration Swales/Strips, Checklist T-1, Parts 1 and 2

- Biofiltration Strips are vegetated land areas, over which stormwater flows as sheet flow. Biofiltration strips are mainly effective at removing debris and solid particles as well as some dissolved constituents that are adsorbed to the soil surfaces.
- Biofiltration swales are vegetated channels that remove pollutants by filtration through grass, sedimentation, adsorption to soil or grass, and infiltration through the soil. Swales are mainly effective at removing debris and solid particles, although some constituents are removed by adsorption to the soil. Biofiltration swales receive directed flow and convey storm water. Biofiltration Swales are typically configured as trapezoidal or v-shaped channels.
- The project proposed a total of eight Biofiltration Strips. Their locations, approximate dimensions of device, and total tributary area treated are shown in Erosion Control Plans and Treatment BMP Summary Sheet.

Dry Weather Diversion, Checklist T-1, Parts 1 and 3

- Dry Weather Flow Diversion devices provide permanent treatment by directing non-stormwater flow through a pipe or channel to a local municipal sanitary sewer system (publicly owned treatment works or POTWs) during the dry season or dry weather.
- Dry weather diversion was not considered because no dry weather flows are persistent or anticipated for this project.

Infiltration Devices – Checklist T-1, Parts 1 and 4

- Infiltration devices capture runoff and allow it to infiltrate directly into the soil (i.e., ground) rather than discharging it to surface waters. Infiltration prevents pollutants in the captured runoff from reaching surface waters. In areas of high sediment loads, pretreatment may be required. Infiltration devices may be configured as basins or trenches.
- Infiltration devices were considered technically infeasible because insufficient R/W is available to propose Infiltration Devices (i.e., basins or trenches) due to the steepness of the existing slopes at the proposed device sites.
- In addition, the soil types at some locations would not allow the use of infiltration devices because it is classified as Hydrologic Soil Group D, which has an infiltration rate much less than the minimum required (i.e., 0.5 in/hr).

Detention Devices, Checklist T-1, Parts 1 and 5

- Detention devices are designed to reduce the sediment and particulate loading in runoff. While the runoff is temporarily detained in the devices, sediment and particulates settle out under the quiescent conditions prior to the runoff being discharged. Detention devices are typically configured as basins.
- Detention devices were considered technically infeasible because insufficient R/W is available to propose Detention Devices (or Basins) and the differences in hydraulic head are not sufficient.

Gross Solids Removal Devices (GSRDs), Checklist T-1, Parts 1 and 6

- Gross Solids Removal Devices (GSRDs) include physical or mechanical methods to remove litter and solids from the stormwater runoff, usually done using various screening technologies.
- As the receiving waters within the project limits are not on the CWA Section 303(d) list for trash or does not have a TMDL for trash, GSRDs are not required for the project.

Traction Sand Traps, Checklist T-1, Parts 1 and 7

- Traction Sand Traps are sedimentation devices that are used to capture traction sand or abrasives from storm water runoff. These traps may take the form of basins, tanks, or vaults.
- Traction sand traps are not required for this project as traction sand and other traction enhancing substances are not applied to the roadways. The climate at the project site does not necessitate the application of traction sand.

Media Filters, Checklist T-1, Parts 1 and 8

- Media filters primarily remove Total Suspended Solid (TSS) pollutants (sediments and metals) from runoff by sedimentation and filtering and also are effective for dissolved metals and litter.
- Media filters are not feasible because there is not enough hydraulic head (< 3 ft) to operate a media filter device and insufficient R/W is available to propose Media Filters. In

addition, Delaware Filters are considered unfavorable because of local agency's vector control issues with standing water.

Multi-Chambered Treatment Trains (MCTTs), Checklist T-1, Parts 1 and 9

- Multi-Chambered Treatment Trains (MCTTs) use three treatment mechanisms in three different chambers. These include a catch basin with a sump pump, a sedimentation chamber with tube settlers and sorbent pads, and a filtering chamber lined with media. The MCTT was developed for treatment of stormwater at critical source areas such as vehicle service facilities, parking areas, paved storage areas, and fueling stations.
- Insufficient R/W is available to propose MCTTs. Furthermore, MCTTs are considered infeasible because of local agency's vector control issues.

Wet Basins, Checklist T-1, Parts 1 and 10

- Wet basins are permanent pools of water designed to mimic naturally occurring wetlands. The main distinction between constructed and natural wetlands is that constructed wetlands are placed in upland areas and are not subject to wetland protection regulations.
- Insufficient R/W is available to propose Wet Basins. Besides, Wet Basins are considered infeasible because of local agency's vector control issues, not enough permanent source of water available in sufficient quantities to maintain the permanent pool, and no naturally occurring wetlands.

6. Proposed Temporary Construction Site BMPs to be used on Project

- This section presents the temporary construction site BMP strategy to be implemented for this project to meet both current Caltrans criteria and the requirements presented in the CGP. The requirements for Risk Level 2 are presented in Attachment D of the CGP. A separate Storm Water Information Handout will be provided to Resident Engineer, Project Registration Documents, and Contractors for the project to further summarize the efforts to meet the requirements under the CGP.

Construction Site BMP Strategy

- This project will involve construction over a period of two rainy seasons. The number of rainy seasons is factored into the cost estimate for each construction site BMP chosen as a line item of work. Whenever possible, earth-disturbing construction activities would be scheduled outside of an anticipated rain event. DSAs would be protected in accordance with the project's pollution control measures specified in this report and per the contract plans and specifications. The construction site BMP strategy for this project shall consist of: Soil Stabilization, Sediment Control, Tracking Control, Wind Erosion Control, Non-Stormwater Controls and Waste Management and Material Pollution Controls.

Soil Stabilization Measures

- The following soil stabilization measures are considered for this project and are included as separate bid line items in the Basic Engineering Estimating System (BEES) of this

project: Temporary Cover, Temporary Hydraulic Mulch (Bonded Fiber Matrix), and Temporary Fence (Type ESA).

- The temporary cover would be placed over temporary stockpiles of disturbed soil to prevent sediment runoff from wind or water. The temporary hydraulic mulch (bonded fiber matrix) would be placed on any exposed disturbed soils, stockpiles of soils, and/or unprotected slopes that may be susceptible to erosion from either runoff or wind. If there are identified ESAs within the project limits, temporary fence (Type ESA) will be designed to designate the areas as being outside the limits of work.

Sediment Control Measures

- The following sediment control measures are considered for this project and are included as separate bid line items: Temporary Fiber Rolls, Temporary Silt Fence, and Temporary Drainage Inlet Protection.
- Temporary fiber rolls would be placed in areas where there is potential for sediment to run on or off the project site; this includes placing temporary fiber rolls at the top of cut and fill slopes.
- Temporary silt fence would be located along the R/W to prevent sediment from running off the project site. Temporary silt fence would also be placed around all temporary stockpiles to prevent sediment runoff. During construction, temporary silt fences would be placed around existing and proposed treatment BMPs to protect them from being impacted by sediment and construction-related activities.
- Temporary drainage inlet protection would be placed at all existing and proposed inlet locations to protect inlets from sediment or other construction-related pollutant runoff.

Tracking Controls

- The following tracking control measures are considered for this project and are included as separate bid line items: Temporary Construction Entrance and Street Sweeping.
- Temporary construction entrances/exits are necessary due to the anticipated grading activities associated with this project. Street sweeping is necessary as construction activities would occur on roadways accessible to local pedestrian and vehicle traffic.

Wind Erosion Control

- The project is located in an area where standard dust control practices have the potential to be inadequate to prevent the transport of dust off-site by wind. To prevent the transport of dust offsite by wind, temporary cover and temporary hydraulic mulch (boded fiber matrix) can be utilized; these items are previously discussed in the "Soil Stabilization Measures" section. The proposed quantities for these items should be adequate to satisfy both soil stabilization and wind erosion control needs.

Non-Stormwater Management

- The project would not involve construction activity within live creeks and tributaries. All other anticipated non-stormwater management measures would be covered under the Job Site Management lump sum.
- Non-Stormwater Management consists of:
  - Water Control and Conservation

- Illegal Connection and Discharge (IC/ID) Detection, and Reporting
- Vehicle and Equipment Cleaning, Fueling, and Maintenance
- Material and Equipment Used Over Water
- Structure Removal Over or Adjacent to Water
- Paving, Sealing, Saw-Cutting and Grinding Activities
- Thermoplastic Striping and Pavement Markers
- Pile Driving
- Concrete Curing and Finishing
- Sweeping
- Dewatering

- No dewatering is anticipated during the construction of the project.

Waste Management & Materials Pollution Control

- This project would involve work and activities using concrete materials. Therefore, temporary concrete washouts are included as a separate bid line item in the BEES. All other anticipated waste management and materials pollution control measures would be covered under the Job Site Management lump sum.

Job Site Management & Training

- The Job Site Management consists of controlling potential sources of water pollution before they can come into contact with storm water systems or water courses. Job Site Management lump sum costs include:
  - Spill Prevention and Control
  - Material Management including material storage and stockpile management
  - Waste Management including Solid waste, hazardous waste, paint waste, concrete waste, sanitary and septic waste, and liquid waste
  - Non-Stormwater Management
- In addition, water pollution control training will be required for employees and subcontractors. Training for construction personnel should be provided and should include the proper selection, deployment, and repair of construction site BMPs used within the project limits.

Storm Water Pollution Prevention Plan

- Risk Level 2 projects are required to prepare an SWPPP developed and certified by a Qualified SWPPP Developer (QSD) prior to the start of construction. The SWPPP will identify BMPs to reduce water quality impacts during construction. The SWPPP should emphasize: 1) standard temporary erosion control measures to reduce sedimentation and turbidity of surface runoff from disturbed areas; 2) personnel training; 3) scheduling and implementation of BMPs year-round and throughout the various construction phases; 4) identification of BMPs for non-stormwater discharge such as fuel spills; and 5) mitigation and monitoring throughout the construction period.
- The SWPPP also requires the QSD to develop a Construction Site Monitoring Program (CSMP) prior to the start of construction, which will be revised to meet ongoing construction activities. For Risk Level 2, the CSMP is required to include the procedures

and methods related to the visual monitoring and sampling and analysis plans for non-visible pollutants, sediment and turbidity, and pH. Actual in-field work to comply with the requirements of monitoring, sampling and analysis is to be done by a QSD or Qualified SWPPP Practitioner (QSP).

Rain Event Action Plan

- Risk Level 2 projects are required to prepare a Rain Event Action Plan (REAP). A REAP is required to be prepared 48 hours prior to any likely rain event; a likely rain event is described as, "any weather pattern that is forecast to have a 50% or greater probability of producing precipitation," as determined by the National Oceanic and Atmospheric Administration (CGP 2009). The REAP will be prepared at every phase of construction and for both active and inactive construction areas. The REAP will specify the project location, plus identify the storm water manager, erosion control provider and sampling personnel with emergency contact information. The REAP will also present the current construction activity and strategy or actions to be taken for the implementation of BMPs on the project site.

Storm Water Sampling and Analysis Day

- The project is required to perform storm water sampling at all discharge locations. The sampling and discharge locations are shown in attachments.
- During a qualifying rain event (precipitation of 1/2 inch or more at the time of discharge), a total of three grab samples will be collected at each discharge point. The samples will be analyzed for both pH and turbidity, either on-site through the use of approved monitoring equipment or off-site by a certified laboratory. The results are then compared to the numeric levels (NAL); the NAL for pH is between 6.5 and 8.5 and the NAL for turbidity is 250 Nephelometric Turbidity Unit (NTU).
- If any of the samples exceed the NAL values, then a NAL Exceedance Report must be prepared. The NAL Exceedance Report should specify the analytical methods and results, present the BMPs in place during the time of sampling and specify corrective action taken at the discharge point.

Storm Water Annual Report

- A Storm Water Annual Report must be submitted by July 15 for the reporting period between July 1st and June 30th. This annual report would include a summary and evaluation of sampling and analysis results related to storm water monitoring and include any analytical methods and parameters used for the monitoring.
- The annual report would also summarize any violations or exceedance and the corrective actions taken to be in compliance with the SWPPP and CGP. The annual report would document those personnel responsible for storm water inspections and monitoring and any training associated with the BMP placement, inspections, monitoring and other certifications to meet the requirements of the CGP. Detailed requirements for the Storm Water Annual Report are presented in the Special Provisions.

7. ~~Maintenance BMPs (Drain Inlet Stenciling)~~

- This project does require stenciling on existing drain inlets because pedestrian or bicycle traffic is allowed in some locations within the project limits.

Required Attachments

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Construction Site BMP Consideration Form
- SWDR Attachment for SMARTS Input
- RUSLE2 Summary Sheet
- Risk Level Determination Documentation
- Treatment BMP Summary Spreadsheets
- Quantities for Construction Site BMPs

Supplemental Attachments

- Storm Water BMP Cost Summary
- Plans showing BMP Deployment (i.e. Layout Sheets, Drainage Sheets, Water Pollution Control Sheets, etc)
- Checklist SW-1, Site Data Sources
- Checklist SW-2, Storm Water Quality Issues Summary
- Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water BMPs
- Checklists DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
- Checklists T-1, Part 1 (Treatment BMPs)
- Checklists CS-1, Parts 1–6 (Construction Site BMPs)
- Calculations and cross sections related to BMPs
- Other Related Information (i.e., Climatography, Web Soil Survey data, Precipitation Frequency data)

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

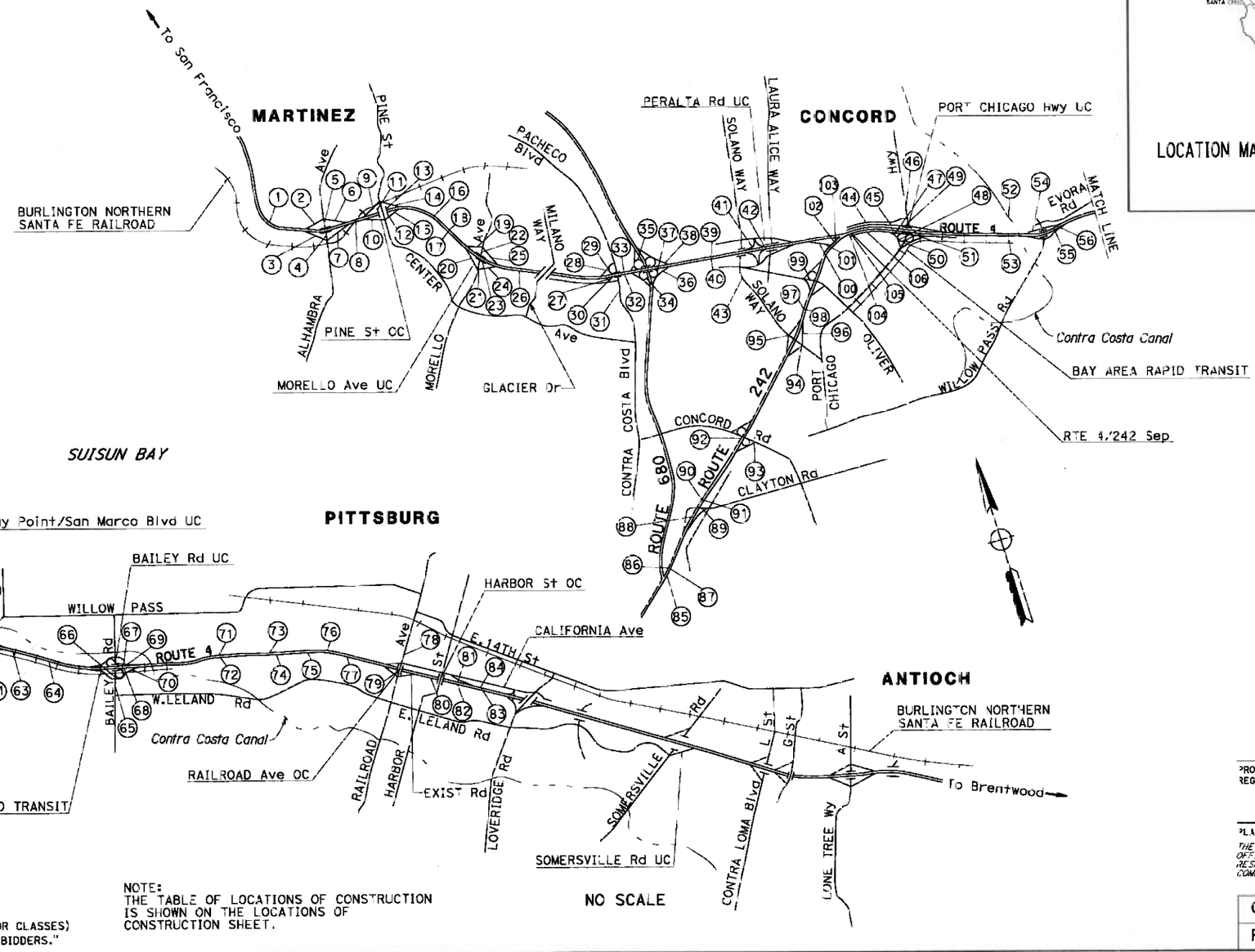
STATE HIGHWAY

IN CONTRA COSTA COUNTY

AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	CC	4,242	R8.C/25.C, 0.C/3.4		



NO SCALE

NOTE:
THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOWN ON THE LOCATIONS OF CONSTRUCTION SHEET.

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT ENGINEER — DATE
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER — No. — EXP. — CIVIL — STATE OF CALIFORNIA

CONTRACT No.	04-152724
PROJECT ID	0412000628

PROJECT MANAGER: LAURIE LAU
DESIGN ENGINEER: GHULAM POPAL

DATE PLOTTED => 02 JUL 2013
TIME PLOTTED => 08:56
LAST REVISION 07-02-13

BORDER LAST REVISED 7/2/2010 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => s114360 DGN FILE => 0412000628cb001.dgn | UNIT 0708 | PROJECT NUMBER & PHASE 0412000628I

INDEX OF PLANS

STATE OF CALIFORNIA
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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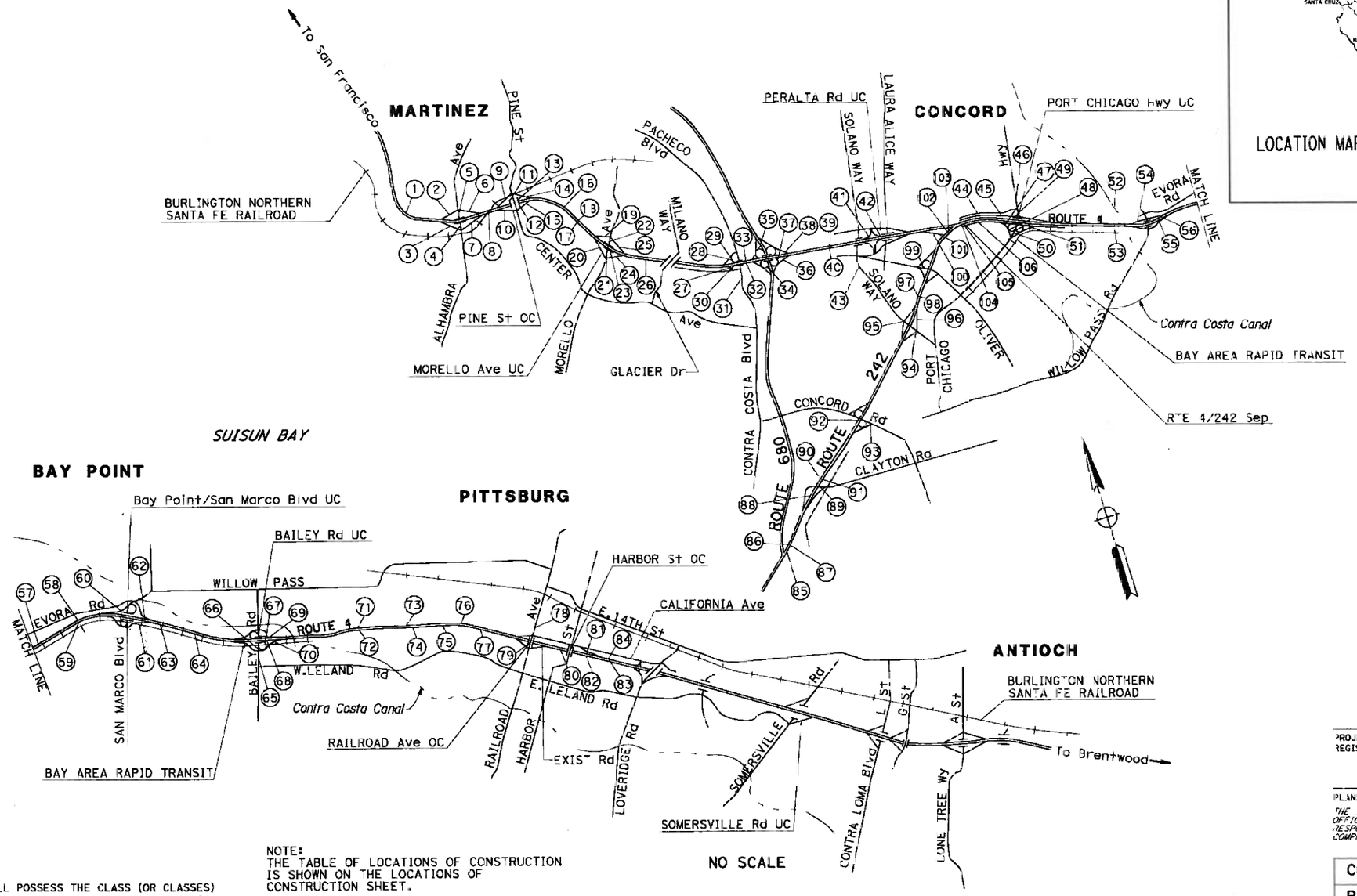

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DATE: 01/29/2013

Project ID (or EA): 0412000628 (EA 152721)

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?		✓	If **Yes**, go to 10. If **No**, continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.	✓		If **Yes**, contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (If Applicable) or Pollution Control Requirements, go to 9 or 4. VTG *(Dist./Reg. SW Coordinator Initials)* If **No**, continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?	✓		If **Yes**. *(Contra Costa County)*, go to 5. If **No**, document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?	✓		If **Yes**, continue to 6. If **No**, go to 10.
6.	Is it a new facility or major reconstruction?		✓	If **Yes**, continue to 8. If **No**, go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?	✓		If **Yes**, continue to 8. If **No**, go to 10.
8.	Does the project result in a net increase of one acre or more of new plus reworked impervious surface?	✓		If **Yes**, continue to 9. If **No**, go to 10. 5.5 ac *(New + Reworked Impervious Surface)*
9.	Project is required to consider approved Treatment BMPs.	✓	See Sections 2.4 and either Section 5.5or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.	
10.	Project is not required to consider Treatment BMPs. _____*(Dist./Reg. Design SW Coord. Initials)* _____*(Project Engineer Initials)* _____ *(Date)*		Document for Project Files by completing this form, and attaching it to the SWDR.	

1 ***See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs***

DATE: 01/29/2013

Project ID (or EA): 0412000628 (EA 152721)

Project Evaluation Process for the Consideration of Construction Site BMPs

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?		✓	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.
9.	End of checklist.	✓	Document for Project Files by completing this form, and attaching it to the SWDR.	

PE to initialize after concurrence with Construction (PS&E only) *Date*

SWDR ATTACHMENT FOR SMARTS INPUT

Construction General Permit (CGP)

Permit Registration Document

Background of Information Transfer to RE

The National Pollutant Discharge Elimination System (NPDES) General Permit For Storm Water Discharges Associated with Construction and land Disturbance Activities Order No. 2009-0009-DWQ NPDES No CAS000002 (CGP), was issued September 2, 2009 and is effective July 1, 2010. This new permit has Permit Registration Documents (PRD) that will be required to be filed electronically in the SMARTS system.

Caltrans currently has its own NPDES permit (order No. 99-06-DWQ), which requires the submittal of a Notice of Construction (NOC) form 30 days prior to the start of construction and to ultimately file a Notice of Construction Completion (NOCC) form when the project is stabilized and completed. The project engineer is currently responsible for calculating and gathering the information for filing the NOC form and providing this information to the District NPDES coordinator. Completing and submitting the NOCC form is the responsibility of the Construction Resident Engineer (RE). The Caltrans permit and the CGP both require a Storm Water Pollution Prevention Plan (SWPPP) to be available at the job site for regulatory review. The SWPPP is prepared by the contractor and approved by the RE. The Caltrans NPDES permit is currently under review for renewal and until it is finalized, the NOC and NOCC forms are still required for compliance. Currently, Caltrans is not required to submit into SMARTs, however if the regional board provides written justification that a certain project needs to be registered in SMARTS, then Caltrans would have to register the project in SMARTS.

Caltrans has been told that the new NPDES permit is going to be approved in late 2011. As such, Caltrans needs to start to prepare design documents for compliance with the new CGP and be prepared to provide the necessary information for the RE to be able to enter into the SMARTS system.

The SWDR completed at PS&E will contain the necessary design information to input into SMARTS. However, the SMARTS system also requires information such as a SWPPP, storm water manager, RE name, Contractor name, QSD/QSP names, and certification of the Notice of Intent (NOI) PRD information. In addition, it also requires data entry and reporting throughout the construction period; REAPS, Quarterly reporting, BMP maintenance, annual reports, and sampling data. Lastly, many projects do not have their permits at PS&E and addendums are added to contract documents to address additional 401 requirements that will be part of the SWPPPs and then entered into SMARTS for compliance. For these reasons, it is expected that construction staff will enter all of the information into SMARTS. The PE will be responsible for preparing the design information necessary to enter into SMARTS and to support Construction for any contract change orders, including those related to stormwater.

SWDR ATTACHMENT FOR SMARTS INPUT

DESIGN INFORMATION FOR RE FILE

The following information is based on the PS&E design plans and specifications. If contract amendments or change orders are made after the design is complete, then the information should be updated by construction, as appropriate.

Enter the following data into the CGP SMARTS Notice of Intent-Site Information page.

1. **Total site size** (acres); for project area use Caltrans R/W x post mile limits (begin-end) on plan sheets.

Total site size _____ acres

2. Enter **latitude and longitude** in decimal degrees to 5 significant figures. Use a location from the center of the project. This information can be obtained from Survey information, GPS units, Google earth, CT Earth, or other mapping software.

Latitude: _____

Longitude: _____

3. **Total Area to be Disturbed** (total Disturbed Soil Area (DSA)): This information is already calculated and can be taken from section one of the SWDR. It is should be described in acres.

DSA _____ acres

4. **Imperviousness before Construction (percentage)** - This is calculated as the total impervious area of the project area divided by the total project area (see total site size), multiplied by 100. The impervious area is all paved areas or hard surfaces within the project limits.

Impervious area before construction % _____

5. **Percent of total disturbed (percentage)**; This should be calculated by dividing the total disturbed soil area by the total project area and multiply by 100.

Percent of Total disturbed area % _____

6. **Imperviousness after Construction (percentage)**, This should be calculated by adding all impervious area paved and hard surfaces based on the final design within project limits from above and dividing by the total project area from above multiply by 100.

Impervious area after construction % _____

7. **Mile Post Marker**, enter the approximate post mile at the center of the project or take the average of the "begin" and "end" post mile markers from the title sheet.

Mile post Marker_____

SWDR ATTACHMENT FOR SMARTS INPUT

8. **Is the construction site part of a larger common plan of development**? Yes or No; in most cases mark no for Caltrans projects, as this is intended for developers (in accordance with the EPA definitions referenced by the CGP in 40 CFR title 22). This clarification is based on direction from the State Board. Get a confirmation with the Design Stormwater coordinator to determine if there is a special case project where the "common plan of development" may apply. No X

9. **Name of development**. Mark "Not Applicable (N/A)" in most cases.

Name of plan or development: N/A

10. **Construction Commencement Date**, mm/dd/yyyy. The PE provides the estimated construction start date from the cover of the SWDR. The actual construction start date should be used to input into SMARTS. After the contract is awarded, the RE will use an updated start date (if different) when entering in SMARTS. The RE needs to be aware of the original date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the actual start date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Construction Commencement Date, mm/dd/yyyy.

11. **Complete Grading Date/Complete Project Date**; The PE provides the estimated construction completion date from the cover of the SWDR to be used for both of these inputs. After the contract is awarded, the RE will use an updated completion date (if different) when entering in SMARTS. The RE needs to be aware of the original completion date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the completion date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Complete Grading Date/Complete Project: mm/dd/yyyy. Use the same date for both inputs, unless instructed otherwise.

12. **Does the Stormwater from the construction site discharge directly or indirectly into waters of the United States.**

Indirect discharge (Y/N) - If yes, list name(s) of receiving water(s) _____

Direct discharge (Y/N) - If yes, list name(s) of receiving water(s) _____

13. **Risk Level**; the combined project risk level is calculated using the sediment risk factor and the water body risk factor to give one overall project risk level. Use the Caltrans risk level determination guidance, (see the Storm water design web page). Attach all risk calculations.

R factor value _____

K factor value_____

LS factor value_____

SWDR ATTACHMENT FOR SMARTS INPUT

Receiving water risk comes from the state water resources control board mapping of water bodies for 303-d listing or TMDLs for sediment or water body with the beneficial use of cold and spawn and migratory. The input will either be high= yes and low=no;

Receiving water risk_____, (yes or no)

The dates used for determining the project risk level and other design elements of the project required for CGP compliance are dependent on having the same sediment risk factor. This is a critical element for compliance, as modifying the estimated construction dates may cause the sediment risk factor to change and ultimately modify the overall project risk factor. This could impact the projects CGP compliance requirements and the assumptions used for the design documents and engineers estimate.

14. Provide electronic copy of plan sheets in .pdf format that can be loaded to SMARTS, burn a CD for the RE to use for the project. The Title sheet can be used as the site map.

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5		**R Factor Value**	70
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9		**K Factor Value**	0.31
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13		**LS Factor Value**	1.83
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		39.07
16	**Site Sediment Risk Factor**		
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		**Medium**
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	yes/no	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment?** For help with impaired waterbodies please check the attached worksheet or visit the link below: 2006 Approved Sediment-impared WBs Worksheet http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml **OR**	**Yes**	**High**
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? http://www.ice.ucdavis.edu/geowbs/asp/wbguse.asp		

Combined Risk Level Matrix

Project Sediment Risk:	**Medium**
Project RW Risk:	**High**
Project Combined Risk:	**Level 2**

Biofiltration Strip

4:1 (h:v) or flatter Slope

Dist-County-Route: 04-CC-004

EA: 04-152721

BMP No.	County	Route	Line	Rt/Lt	Post Mile		Station		Begin Coordinate		End Coordinate		Treated Area (ac)	BMP Area (sf)
					Begin	End	Begin	End	Latitude	Longitude	Latitude	Longitude		
1	CC	4	Morello (WB)	Rt			20+70	22+25					0.0142	2325
2	CC	4	Morello (WB)	Rt			29+50	31+00					0.0158	2250
3	CC	4	Pacheco (EB)	Rt			20+00	23+32					0.0534	4980
4	CC	4	Pacheco (EB)	Rt			23+32	26+00					0.1046	4020

Biofiltration Strip

4:1 (h:v) or flatter Slope

Dist-County-Route:

EA:

BMP No.	County	Route	Line	Rt/Lt	Station		Treated Area (ac)	BMP Area (sf)	Comment	
					Begin	End				
1	CC	4	Morello (WB)	Rt	20+70	22+25	0.0142	2325	Do not install dike.	375%
2	CC	4	Morello (WB)	Rt	29+93	31+00	0.0158	1605	Do not install dike.	233%
3	CC	4	Pacheco (EB)	Rt	20+00	23+32	0.0534	4980	Do not install curb and gutter. Side slope needs to be graded to allow sheet flow.	214%
4	CC	4	Pacheco (EB)	Rt	23+32	26+00	0.1046	4020	Do not install dike. Side slope needs to be graded to allow sheet flow.	88%
5	CC	4	Pacheco (EB)	Rt	26+00	27+67			Too close to the bridge abutment slope.	
6	CC	4	Solano (EB)	Rt	11+40	13+40	0.0413	3000	Do not install dike. Side slope needs to be graded to allow sheet flow.	167%
7	CC	4	Solano (WB)	Rt	10+70	14+75	0.1674	6075	Do not install dike. Side slope needs to be graded to allow sheet flow.	83%
8	CC	4	Willow Pass (WB)	Rt	25+35	26+80	0.0399	2175	Do not install dike. Side slope needs to be graded to allow sheet flow.	125%
9	CC	4	Port Chicago Hwy (WB)	Lt	10+00	24+40	0.1983	21600		250%
10	CC	4	Port Chicago Hwy (WB)	Lt	27+80	35+50	0.1956	11550		136%
			Total				0.8306	ac		
							14.3%			

New	3.60	ac
Reworked	2.20	ac
Total	5.80	ac

Biofiltration Strip

4:1 (h:v) or flatter Slope

Dist-County-Route:

EA:

BMP No.	County	Route	Line	Rt/Lt	Station		Treated Area (ac)	BMP Area (sf)	Comment	
					Begin	End				
1	CC	4	Morello (WB)	Rt	20+70	22+25	0.0142	2325	Do not install dike.	375%
2	CC	4	Morello (WB)	Rt	29+93	31+00	0.0158	1605	Do not install dike.	233%
3	CC	4	Pacheco (EB)	Rt	20+00	23+32	0.0534	4980	Do not install curb and gutter. Side slope needs to be graded to allow sheet flow.	214%
4	CC	4	Pacheco (EB)	Rt	23+32	26+00	0.1046	4020	Do not install dike. Side slope needs to be graded to allow sheet flow.	88%
5	CC	4	Pacheco (EB)	Rt	26+00	27+67			Too close to the bridge abutment slope.	
6	CC	4	Solano (EB)	Rt	11+40	13+40	0.0413	3000	Do not install dike. Side slope needs to be graded to allow sheet flow.	167%
7	CC	4	Solano (WB)	Rt	10+70	14+75	0.1674	6075	Do not install dike. Side slope needs to be graded to allow sheet flow.	83%
8	CC	4	Willow Pass (WB)	Rt	25+35	26+80	0.0399	2175	Do not install dike. Side slope needs to be graded to allow sheet flow.	125%
9	CC	4	Port Chicago Hwy (WB)	Lt	10+00	24+40	0.1983	21600		250%
10	CC	4	Port Chicago Hwy (WB)	Lt	27+80	35+50	0.1956	11550		136%
			Total				0.8306	ac		
							14.3%			

New	3.60	ac
Reworked	2.20	ac
Total	5.80	ac

WATER POLLUTION CONTROL (WPC) COST ESTIMATE

												$ 120,000,000.00		NOTES:
Project Description:					Highway Widening				**Date:**	mm/dd/yyyy		Yes	0.25%	Total Project Cost Except R/W
Project Limits:					04-CO-RTE-PM XX.X/XX.X				**Prepared by:**	XXX XXX		$ 1,800,000.00	1.50%	401 Cert or other requirements (adjust per requirements)
Construction Start:					06/01/2013				**EA:**	04-XXXXXX		53		Target WPC per Total Project Cost (%)
Construction End:					10/01/2017				**Project ID:**	04XXXXXXXX		15		Number of Construction Months for RQM
												600	WD	Number of Discharge Locations for RQM
ITEM NO	**2006 SSP**	**2010 SPEC**	**2010 SSP**	**STD PLAN**	**2006 BEES**	**2010 BEES**	**ITEM DESCRIPTION**	**UNIT OF MEASURE**	**ESTIMATED QUANTITY**	**ITEM PRICE**	**TOTAL**	27.5	AC	Working Days (WD)
												4		Disturbed Soil Area (DSA) (ac)
												3000	CY	Number of Rainy Seasons
							TEMPORARY WATER POLLUTION CONTROL PRACTICES					$ 36,000.00		Concrete Work (CY)
														Routine Quarterly Monitoring (RQM)
	05-010	N/A		None	None	None	ORDER OF WORK							
	07-346			None	074016	N/A	CONSTRUCTION SITE MANAGEMENT	LS		$ 150,000.00	$ -	$ 150,000.00	0.125%	Owner: OE, Verify per 401 Cert, if needed (no related cost)
1		13-4	None	None	N/A	130100	JOB SITE MANAGEMENT	LS	1	$ 150,000.00	$ 150,000.00	$ 150,000.00	0.125%	Adjust for any considerations; coordinate with Construction if needed
2	07-345	13-3	13-1.01A 13-3.01A	None	074019	130300	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1	$ 42,000.00	$ 42,000.00	$ 42,000.00		Adjust for any considerations; coordinate with Construction if needed
3	07-345	13-3	None	None	074056	130310	RAIN EVENT ACTION PLAN	EA	194	$ 500.00	$ 97,000.00			SWPPP Projects (PPDG Appendix F)
4	07-345	13-3	None	None	074058	130320	STORM WATER SAMPLING AND ANALYSIS DAY *	EA	124	$ 1,100.00	$ 136,400.00			PPDG Appendix F
5	07-345	13-3	None	None	074057	130330	STORM WATER ANNUAL REPORT	EA	5	$ 2,000.00	$ 10,000.00			PPDG Appendix F: Calculate LS price first, then divide by Days0.5* for unit price.
6	07-390	13-5	None	T54&55	074027	130500	TEMPORARY EROSION CONTROL BLANKET	SQYD		$ 3.00	$ -	$ -	10%	PPDG Appendix F
7	07-485	13-5	None	None	074037	130505	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	20	$ 750.00	$ 15,000.00	$ 3,750.00	25%	see WPCD
8	07-380	13-5	None	None	074026	130510	TEMPORARY MULCH	SQYD		$ 1.00	$ -	$ -	10%	Maintenance Sharing: estimate at 25% of the item cost per rainy season
9	07-351	13-5	None	None	074051	130520	TEMPORARY HYDRAULIC MULCH	SQYD		$ 1.00	$ -	$ -	10%	Not commonly used in District 4
10	07-381	13-5	None	None	074040	130530	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	SQYD	15,000	$ 1.50	$ 22,500.00	$ 2,250.00	10%	Not commonly used in District 4
11	07-352	13-5	None	None	074052	130535	TEMPORARY HYDRAULIC MULCH (CEMENTITIOUS BINDER)	SQYD		$ 1.50	$ -	$ -	10%	see WPCD (entire disturbed slope area)
12	07-354	13-5	None	None	074054	130540	TEMPORARY TACKED STRAW	SQYD		$ 0.50	$ -	$ -	10%	Not commonly used in District 4
13	07-353	13-5	None	None	074053	130550	TEMPORARY HYDROSEED	SQYD		$ 0.50	$ -	$ -	10%	Used occasionally
14	07-371	13-5	None	None	074055	130560	TEMPORARY SOIL BINDER	SQYD		$ 0.50	$ -	$ -	10%	Used occasionally
15	07-395	13-5	None	T53	074034	130570	TEMPORARY COVER	SQYD	7,500	$ 4.00	$ 30,000.00	$ 3,000.00	10%	Used occasionally
16	07-415	13-6	None	T57	074035	130610	TEMPORARY CHECK DAM	LF	2,500	$ 10.00	$ 25,000.00	$ 6,250.00	25%	see WPCD: 1/3 of DSA
17	07-490	13-6	13-6.03C 13-10.03A	T61-64	074038	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	72	$ 250.00	$ 18,000.00	$ 4,500.00	25%	see WPCD (Maintenance Sharing: use 10% for fiber roll and 25% for gravel bag)
18	07-420	13-6	None	T56	074028	130640	TEMPORARY FIBER ROLL	LF	10,500	$ 4.00	$ 42,000.00	$ 4,200.00	10%	Maintenance Sharing: estimate at 25% of the item cost per rainy season
19	07-470	13-6	None	None	074031	130650	TEMPORARY GRAVEL BAG BERM	LF	240	$ 15.00	$ 3,600.00	$ 900.00	25%	see WPCD
20	07-421	13-6	None	T66	074045	130660	TEMPORARY LARGE SEDIMENT BARRIER	LF		$ 15.00	$ -	$ -	10%	see WPCD
21	07-432	13-6	13-6.03H	T60	071324	130670	TEMPORARY REINFORCE SILT FENCE	LF	2,450	$ 10.00	$ 24,500.00	$ 2,450.00	10%	Not commonly used in District 4
22	07-430	13-6	None	T51	074029	130680	TEMPORARY SILT FENCE	LF		$ 4.00	$ -	$ -	10%	see WPCD
23	07-460	13-6	None	T52	074036	130690	TEMPORARY STRAW BALE BARRIER	LF		$ 11.00	$ -	$ -	10%	see WPCD
24	07-480	13-7	None	T58	074033	130710	TEMPORARY CONSTRUCTION ENTRANCE	EA	2	$ 2,500.00	$ 5,000.00	$ 1,250.00	25%	see WPCD
25	07-481	13-7	None	T67	074044	130720	TEMPORARY CONSTRUCTION ROADWAY	CY		$ 100.00	$ -	$ -	25%	Typically two (one for entrance & one for exit)
26	07-360	13-7	13-1.03C 13-7.03D	None	074041	130730	STREET SWEEPING	LS	1	$ 72,000.00	$ 72,000.00	$ 72,000.00		
27	07-347	13-8	13-1.03C 13-8.01A	None	074015	130800	TEMPORARY ACTIVE TREATMENT SYSTEM	LS	1	$ 500,000.00	$ 500,000.00			$400 - $600/wk or $350/ea
28	07-408	13-9	13-1.03C 13-9.03	T59	N/A	130900	TEMPORARY CONCRETE WASHOUT	LS	1	$ 13,500.00	$ 13,500.00	$ 13,500.00		PPDG Appendix F
	07-382	13-5	None	None	074039	N/A	TEMPORARY HYDRAULIC MULCH (POLYMER STABILIZED FIBER MATRIX)	SQYD			$ -			per type of washouts
	07-405	13-9	13-1.03C 13-9.03	T59	074032	N/A	TEMPORARY CONCRETE WASHOUT FACILITY	EA		$ 2,000.00		$ -		Canceled
	07-406	13-9	13-1.03C 13-9.03	None	074042	N/A	TEMPORARY CONCRETE WASHOUT (PORTABLE)	LS	1	$ 13,500.00		$ 13,500.00	0	$2000 each
	07-407	13-9	13-1.03C 13-9.03	None	074043	N/A	TEMPORARY CONCRETE WASHOUT BIN	EA		$ 1,700.00		$ -		Number of concrete washout: $1500 each (~5 CY)
	07-446	14-1	None	T65	071325	141000	TEMPORARY FENCE (TYPE ESA)	LF		$ 5.00	$ -	$ -	10%	$1700 each
29	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	TEMPORARY STREAM CROSSING	LS			$ -			see WPCD
30	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	CLEAR WATER DIVERSION	LS			$ -			
31	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	DEWATERING AND NON-STORM WATER DISCHARGE CONTROL	LS	1	$ 50,000.00	$ 50,000.00			
32	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	TEMPORARY TIRE WASH SYSTEM	LS	1	$ 50,000.00	$ 50,000.00			
33	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	WATER QUALITY SAMPLING AND ANALYSIS DAY	EA	50	$ 500.00	$ 25,000.00			For Water Quality Monitoring (before and during installation, during and after removal, visual inspection during rain events (0.1" or more))
34	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	WATER QUALITY MONITORING REPORT	EA	50	$ 500.00	$ 25,000.00			For Water Quality Monitoring (before and during installation, during and after removal, visual inspection during rain events (0.1" or more))
35	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	WATER QUALITY ANNUAL REPORT	EA	3	$ 2,000.00	$ 6,000.00			For Water Quality Monitoring
36	07-XXX	13-X	13-X.XX	None	XXXXXX	XXXXXX	TURBIDITY CONTROL	LS			$ -			Special condition (e.g., Temporary Floating Silt Curtain System: $2000 for TCP, $15/LF)
	70-016	70-5		D71	XXXXXX	XXXXXX	DRAIN INLET MARKER	EA			$ -			Maintenance BMP: Owner from WP (2006) to Hydraulics (2010)
	SS-280	2-1		None	None	None	SUPPLEMENTAL PROJECT INFORMATION							Owner: OE, Verify 401 Cert listed (no related cost)
	SS-630	N/A		None	None	None	RELATIONS W/RWQCB							Edit Spec (no related cost)
	SS-760	14-1	14-1.02	None	None	None	ENVIRONMENTALLY SENSITIVE AREA							Owner: EM, No related cost
	XX-XXX	XX-X	13-X.XX	None	XXXXXX	XXXXXX	TEMPORARY CREEK DIVERSION SYSTEM	LS			$ -			Owner: Hydraulics
							Subtotal				$ 1,362,500.00		1.14%	
												$ 28,550.00		WPC Maintenance Sharing Per Season
							SUPPLEMENTAL ITEMS					$ -		Additional WPC for additional project-specific issues (justification req'd)
	Various*	13-5,6,7	Various*	None	066595	066595	WATER POLLUTION CONTROL MAINTENANCE SHARING	LS	1	$ 114,200.00	$ 114,200.00	$ 114,200.00		
	07-345	13-1		None	066596	066596	ADDITIONAL WATER POLLUTION CONTROL	LS	1	$ 6,000.00	$ 6,000.00	$ 6,000.00		Prepare WPCP + Additional for additional project-specific issues (justification req'd)
	07-345	13-3		None	066597	066597	STORM WATER SAMPLING AND ANALYSIS	LS	1	$ 6,000.00	$ 6,000.00	$ 6,000.00		
							Subtotal				$ 12,000.00		0.01%	
							TOTAL				**$ 1,374,500.00**		1.15%	

* All applicable (071324, 071325, 074026 to 074029, 074031, 074033 to 074036, 074038 to 074040, 074044, 074045, 074051 to 074055)
All the above-listed items that called out for maintenance sharing except for 071325 & 074034; however, consider to include for these to be conservative.
* Calculate LS price first, then divide by $Days_{0.5}$ for unit price.

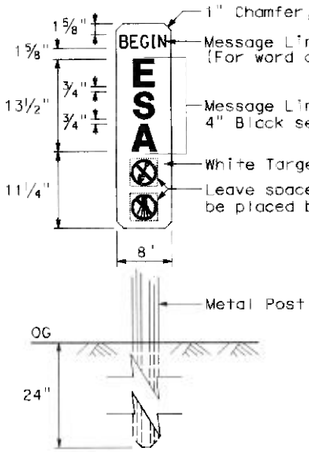
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	4,242	R8.0/25.0 C.C/3.4		

LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

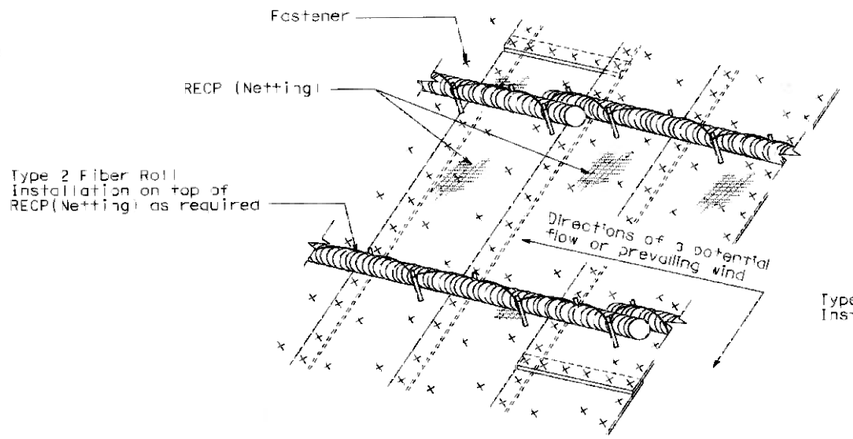
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LICENSED LANDSCAPE ARCHITECT — ALEXANDER K. MCDONALD — No. 5557 — Signature — Renewal Date 11-4-15 — STATE OF CALIFORNIA

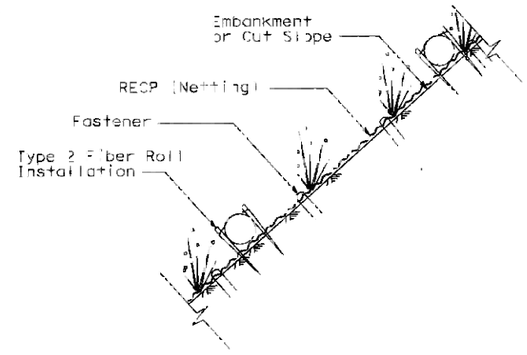


SPECIAL MARKER

See Std Plans A73A, A73B and MUTCD Sign Code G11-10 (CA) for additional details



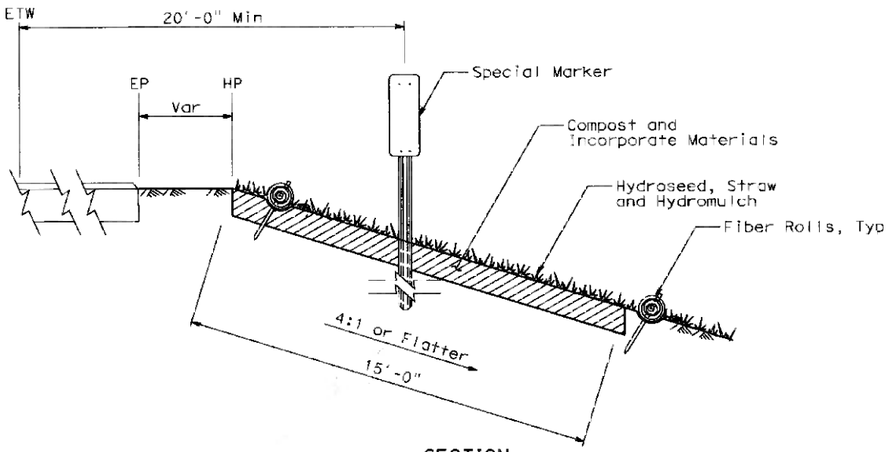
ISOMETRIC



SECTION

ROLLED EROSION CONTROL PRODUCT (NETTING) ON SLOPE WITH FIBER ROLLS

See Std Plan H51 and H52 for additional details



SECTION

BIOFILTRATION STRIP (EROSION CONTROL TYPE 1)

Sta MORELLO WESTBOUND 20+70 TO 22+25, Rt
Sta MORELLO WESTBOUND 29+93 TO 31+00, Rt
Sta PACHECO EASTBOUND 20+00 TO 26+00, Rt
Sta SOLANO EASTBOUND 11+40 TO 13+40, Rt
Sta SOLANO WESTBOUND 10+70 TO 14+75, Rt
Sta WILLOW PASS WESTBOUND 25+75 TO 26+80, Rt
Sta PORT CHICAGO Hwy WESTBOUND 10+00 TO 24+40, Lt
Sta PORT CHICAGO Hwy WESTBOUND 27+80 TO 35+50, Lt

EROSION CONTROL DETAILS

NO SCALE

ECD-2

REVISED BY	DATE REVISED
AKM	3/15/13

CALCULATED-DESIGNED BY: Alex McDonald
CHECKED BY: Chris Padick

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans WATER QUALITY
SENIOR LANDSCAPE ARCHITECT
DAVID W. YAM

LAST REVISION: DATE PLOTTED = 31-MAY-2013 TIME PLOTTED = 07:18:12

BORDER LAST REVISED 7/2/2010 | USERNAME => s130924 DGN FILE => 0412000628 1f002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0412000628 1

Stormwater | Water Quality Planning Tool | Statewide CGP GIS Webmap

earth.dot.ca.gov/stormwater/

CGP GIS Webmap | MSC Map Search | SWDI | CA Others | CT | Health | Houses | Others | Google | Bing | MSN | Gmail | Yahoo | Answers | DaumDic | Naver-Dic | Weather | Dic | MapQuest | Wiki | Acronym | mwDic

Stormwater

Caltrans

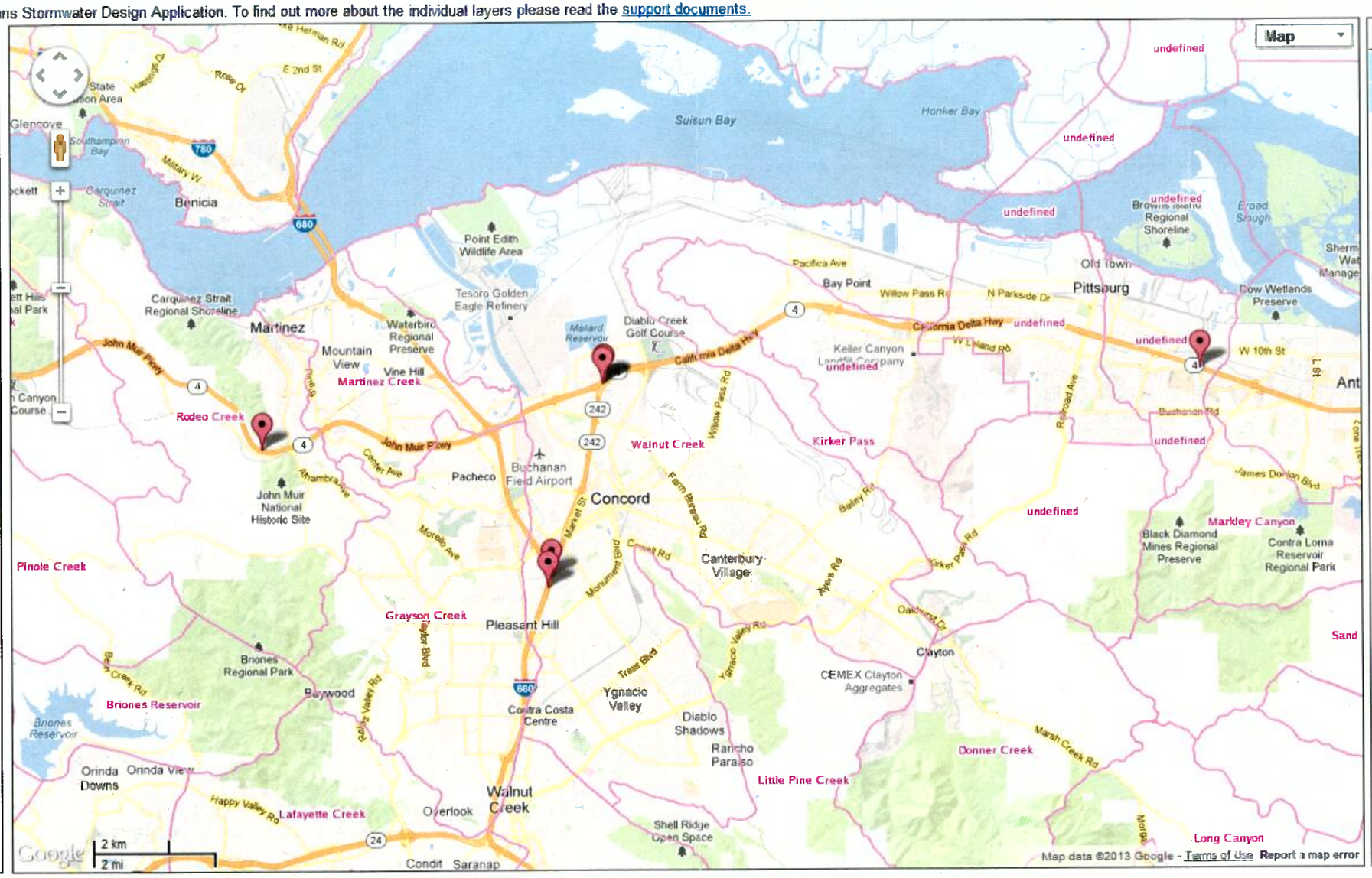
Welcome to the Caltrans Stormwater Design Application. To find out more about the individual layers please read the support documents.

Table of Contents

- Highways
- Boundaries
- Watersheds
- Pollutants
- Risk Level
  - Watershed PW
  - Web K Value
  - Risk Watershed (SMARTS)
- Rainfall Erosivity Factor
- GIS Map Method
- REAP/SWM
- RUSLE 'R'
- NOT (in/yr. Arid & Semi-Arid)
- Water Bodies
- Caltrans Facilities
- Caltrans ASBS
- Miscellaneous

Layer Decription

Hover over a layer name for a description



Map Tools

Fly To Location

Post Mile Lookup

PM Click | PM Point | PM Line

Validate PM Point

County: CC-Contra Costa

Route: 242

PM: R 3.39

Lat:38.00578
Long:-122.03586

Validate | Clear Map | Clear

Lat/Long

Measure

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	4,242	R8.0/25.0 0.0/3.4		

LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

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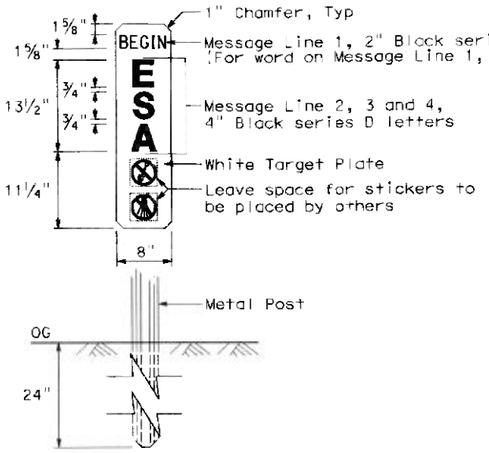
LICENSED LANDSCAPE ARCHITECT — Signature — Renewal date 11-4-13 — STATE OF CALIFORNIA



SPECIAL MARKER

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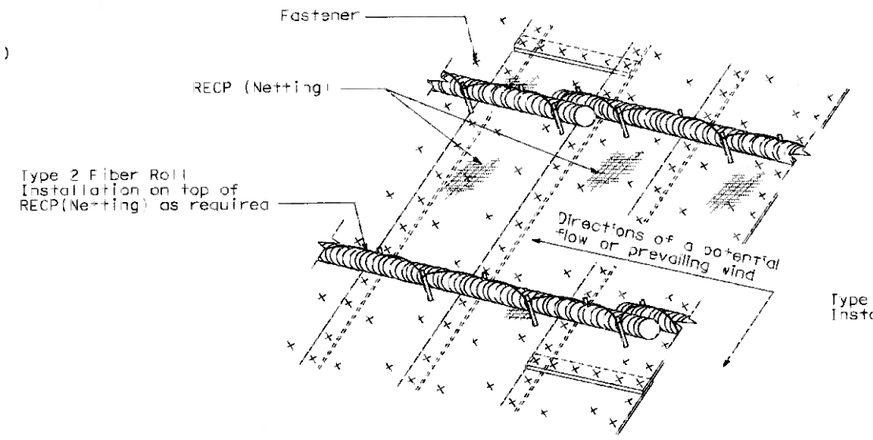
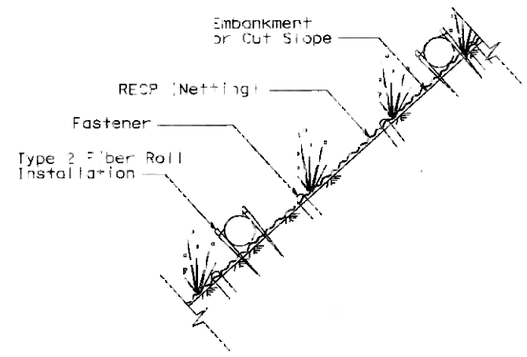


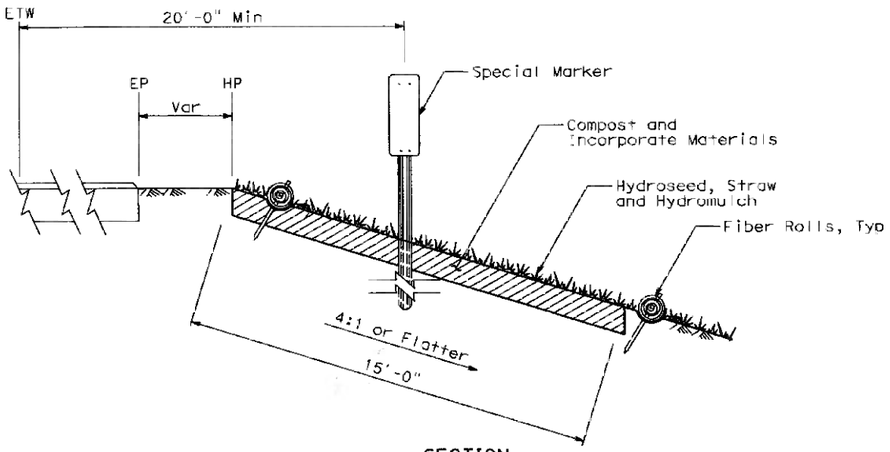
ISOMETRIC



SECTION

ROLLED EROSION CONTROL PRODUCT (NETTING) ON SLOPE WITH FIBER ROLLS

See Std Plan H51 and H52 for additional details



SECTION

BIOFILTRATION STRIP (EROSION CONTROL TYPE 1)

Sta MORELLO WESTBOUND 20+70 TO 22+25, Rt
Sta MORELLO WESTBOUND 29+93 TO 31+00, Rt
Sta PACHECO EASTBOUND 20+00 TO 26+00, Rt
Sta SOLANO EASTBOUND 11+40 TO 13+40, Rt
Sta SOLANO WESTBOUND 10+70 TO 14+75, Rt
Sta WILLOW PASS WESTBOUND 25+75 TO 26+80, Rt
Sta PORT CHICAGO Hwy WESTBOUND 10+00 TO 24+40, Lt
Sta PORT CHICAGO Hwy WESTBOUND 27+80 TO 35+50, Lt

EROSION CONTROL DETAILS

NO SCALE — ECD-2

REVISED BY	DATE REVISED
ARM	3/15/13

CALCULATED-DESIGNED BY: Alex McDonald
CHECKED BY: Chris Padick

SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans · WATER QUALITY

LAST REVISION: DATE PLOTTED = 31-MAY-2013 TIME PLOTTED = 10:12

BORDER LAST REVISED 7/2/2010 | USERNAME => s130924 | DGN FILE => 0412000628tf002.dgn | RELATIVE BORDER SCALE IS IN INCHES (0 1 2 3) | UNIT 0000 | PROJECT NUMBER & PHASE 0412000628

Checklist SW-1, Site Data Sources

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 5.5 of this document. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Topographic	
• Web Soil Survey, Natural Resources Conservation Service (NRCS), US Department of Agriculture (USDA). http://websoilsurvey.nrcs.usda.gov/	Accessed January 29, 2013
• Ecological Subregions of California, Forest Service, US Department of Agriculture	September 1997
•	
Hydraulic	
• Flood Insurance Rate Map (FIRM), Federal Emergency Management Agency (FEMA). https://msc.fema.gov/webapp/wcs/stores/servlet/StoreCatalogDisplay?storeId=10001&catalogId=10001&langId=-1&userType=G	Accessed March 5, 2013
•	
Soils	
• Groundwater Bulletin 118, Central Coastal Hydrologic Region, California Department of Water Resources. http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm	2003 (accessed January 29, 2013)
• Web Soil Survey, Natural Resources Conservation Service (NRCS), US Department of Agriculture (USDA). http://websoilsurvey.nrcs.usda.gov/	Accessed January 29, 2013
• National Engineering Handbook (NEH) Part 630 - Hydrology, Natural Resources Conservation Service (NRCS), US Department of Agriculture (USDA). http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/?&cid=stelprdb1043063	2010
•	
Climatic	
• Caltrans Statewide Storm Water Management Plan (SWMP). http://www.dot.ca.gov/hq/env/stormwater/pdf/swmp_may2003final.pdf	May 2003

• National Climate Data Center (NCDC), National Oceanic and Atmospheric Administration (NOAA), US Department of Commerce (USDC). http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl	Accessed January 29, 2013
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Checklist SW-2, Storm Water Quality Issues Summary

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Complete responses to applicable questions, consulting other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Storm Water Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR.

1.	Determine the receiving waters that may be affected by the project throughout the project life cycle (i.e., construction, maintenance and operation).	☒Complete	☐NA
2.	For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.	☒Complete	☐NA
3.	Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits. Consider appropriate spill contamination and spill prevention control measures for these new areas.	☒Complete	☐NA
4.	Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.	☒Complete	☐NA
5.	Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.	☒Complete	☐NA
6.	Determine if a 401 certification will be required.	☒Complete	☐NA
7.	List rainy season dates.	☒Complete	☐NA
8.	Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.	☒Complete	☐NA
9.	If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater.	☒Complete	☐NA
10.	Determine contaminated soils within the project area.	☒Complete	☐NA
11.	Determine the total disturbed soil area of the project.	☒Complete	☐NA
12.	Describe the topography of the project site.	☒Complete	☐NA
13.	List any areas outside of the Caltrans right-of-way that will be included in the project (e.g. contractor's staging yard, work from barges, easements for staging, etc.).	☒Complete	☐NA
14.	Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?	☒Complete	☐NA
15.	Determine if a right-of-way certification is required.	☒Complete	☐NA
16.	Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.	☒Complete	☐NA
17.	Determine if project area has any slope stabilization concerns.	☒Complete	☐NA
18.	Describe the local land use within the project area and adjacent areas.	☒Complete	☐NA
19.	Evaluate the presence of dry weather flow.	☒Complete	☐NA

Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water Impacts

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

The PE must confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR.

Options for avoiding or reducing potential impacts during project planning include the following:

1.	Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions?	☐Yes	☒No	☐NA
2.	Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts?	☐Yes	☐No	☒NA
3.	Can any of the following methods be utilized to minimize erosion from slopes:			
	a. Disturbing existing slopes only when necessary?	☒Yes	☐No	☐NA
	b. Minimizing cut and fill areas to reduce slope lengths?	☒Yes	☐No	☐NA
	c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes?	☒Yes	☐No	☐NA
	d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes?	☒Yes	☐No	☐NA
	e. Avoiding soils or formations that will be particularly difficult to re-stabilize?	☒Yes	☐No	☐NA
	f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates?	☒Yes	☐No	☐NA
	g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows?	☒Yes	☐No	☐NA
	h. Rounding and shaping slopes to reduce concentrated flow?	☒Yes	☐No	☐NA
	i. Collecting concentrated flows in stabilized drains and channels?	☒Yes	☐No	☐NA
4.	Does the project design allow for the ease of maintaining all BMPs?	☒Yes	☐No	
5.	Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season?	☒Yes	☐No	
6.	Can permanent storm water pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction storm water impacts?	☒Yes	☐No	☐NA

Treatment BMPs

Checklist T-1, Part 1

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs, as determined from the process described in Section 4 (Project Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each watershed and sub-watershed within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project, when considering Treatment BMPs. Use the responses to the questions as the basis when developing the narrative in Section 5 of the Storm Water Data Report to document that Treatment BMPs have been appropriately considered.

Answer all questions, unless otherwise directed. Questions 14 through 16 should be answered after all subwatershed (drainages) are considered using this checklist.

1. Is the project in a watershed with prescriptive TMDL treatment BMP requirements in an adopted TMDL implementation plan or does the project have a dual purpose facility requirement (e.g. flood control and water quality treatment or Design Pollution Prevention BMPs that provide infiltration and treatment)? ☐Yes ☒No

   If Yes, consult the District/Regional Storm Water Coordinator to determine whether the T-1 checklist should be used to propose alternative BMPs because the prescribed BMPs may not be feasible or other BMPs may be more cost-effective. Special documentation and regulatory response may be necessary.

2. Dry Weather Flow Diversion

   (a) Are dry weather flows generated by Caltrans anticipated to be persistent? ☐Yes ☒No

   (b) Is a sanitary sewer located on or near the site? ☐Yes ☐No

   If Yes to both 2 (a) and (b), continue to (c). If No to either, skip to question 3.

   (c) Is connection to the sanitary sewer possible without extraordinary plumbing, features or construction practices? ☐Yes ☐No

   (d) Is the domestic wastewater treatment authority willing to accept flow? ☐Yes ☐No

   If Yes was answered to all of these questions consider ***Dry Weather Flow Diversion***, complete and attach **Part 3** of this checklist.

3. Is the receiving water on the 303(d) list for litter/trash or has a TMDL been issued for litter/trash? ☐Yes ☒No

If Yes, consider ***Gross Solids Removal Devices (GSRDs)***. Complete and attach **Part 6** of this checklist. Note: Infiltration Devices, Detention Devices, Media Filters, MCTTs, and Wet Basins also can capture litter. Before considering GSRDs for stand-alone installation or in sequence with other BMPs, consult with District/Regional NPDES Storm Water Coordinator to determine whether Infiltration Devices, Detention Devices, Media Filters, MCTTs, and Wet Basins should be considered instead of GSRDs to meet litter/trash TMDL.

4. Is the project located in an area (e.g., mountain regions) where traction sand is applied more than twice a year? ☐Yes ☒No

   If Yes, consider ***Traction Sand Traps*** Complete and attach **Part 7** of this checklist.

5. Maximizing Biofiltration Strips and Swales

   Objectives:

   1) Quantify infiltration from biofiltration alone

   2) Identify highly infiltrating biofiltration (i.e. > 90%) and skip further BMP consideration.

   3) Identify whether amendments can substantially improve infiltration.

   (a) Have biofiltration strips and swales been designed for runoff from all project areas, including sheet flow and concentrated flow conveyance? If no, document justification in Section 5 of the SWDR. ☐Yes ☒No

   (b) Based on existing site conditions, estimate what percentage of the WQV[1] can be infiltrated. When calculating the WQV, use a drawdown time appropriate for the site conditions..

   _x_ < 20%
   ___ 20 % - 50%
   ___ 50% - 90%
   ___ > 90%

   ☒Complete

   (c) Is infiltration greater than 90 percent? If Yes, skip to question 13. ☐Yes ☒No

   If No, Continue to 5 (d).

[1] A complete methodology for determining WQV infiltration is available at: http://www.dot.ca.gov/hq/oppd/stormwtr/index.htm

(d) Can the infiltration ranking in question 5(b) above be increased by using soil amendments? ☒Yes ☐No

If Yes, consider including soil amendments (increasing the infiltration ranking of strips and swales shows performance comparable to other BMPs). Record the new infiltration estimate below. If No, continue to 5 (e).

___ < 20% (skip to 6)
___ 20 % - 50% (skip to 6)
___ 50% - 90% (skip to 6)
_x_ >90% ☒Complete

(e) Is infiltration greater than 90 percent? If Yes, skip to question 13. If No, continue to 5 (f). ☒Yes ☐No

(f) Is infiltration greater than 50 percent and is biofiltration preferred? If yes to both, skip to question 13. ☐Yes ☐No

6. Biofiltration in Rural Areas

Is the project in a rural area (outside of urban areas that is covered under an NPDES Municipal Stormwater Permit[2])? If Yes, proceed to question 13. ☐Yes ☐No

7. Estimating Infiltration for BMP Combinations

Objectives:

1) Identify high-infiltration biofiltration or biofiltration and infiltration BMP combinations and skip further BMP consideration.

2) If high infiltration is infeasible, then identify the infiltration level of all feasible BMP combinations for use in the subsequent BMP selection matrices.

(a) Has concentrated infiltration (i.e., via earthen basins) been prohibited? Consult your District/Regional Storm Water Coordinator and/or environmental documents. ☐Yes ☐No

If No, continue to 7 (b); if Yes, skip to question 8 and do not consider earthen basin-type BMPs

[2] See pages 39 and 40 of the Fact Sheets for the CGP.
http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_factsheet.pdf

(b) Can the infiltration ranking be increased by infiltrating the un-infiltrated remaining WQV from question 5, with an infiltration BMP[1]? If yes, record the new infiltration estimate below. If no, proceed to 7(c). ☐Yes ☐No

___ < 20% (do not consider this BMP combination)
___ 20% - 50%
___ 50% - 90%
___ >90%

Is at least 90 percent infiltration estimated? If Yes, proceed to 13. If No, proceed to 7(c). ☐Yes ☐No

(c) Assess infiltration of biofiltration combined with an approved earthen BMP. This assessment will be used in subsequent BMP selection matrices.

Earthen Detention Basin

___ < 20% ☐Complete
___ 20% - 50%
___ > 50%

Continue to Question 8

8. Identifying BMPs based on the Target Design Constituents

(a) Does the project discharge to a 303(d) impaired water body or a water body that has a TMDL adopted? If "No," use Matrix A to select BMPs, consider designing to treat 100% of the WQV, then skip to question 12. ☐Yes ☐No

If Yes, is the identified pollutant(s) considered a Targeted Design Constituent (TDC) (check all that apply below)?

☐ sediments
☐ phosphorus
☐ nitrogen
☐ copper (dissolved or total)
☐ lead (dissolved or total)
☐ zinc (dissolved or total)
☐ general metals (dissolved or total)[2]

(b) Treating Sediment. Is sediment a TDC? If Yes, use Matrix A to select BMPs, then skip to question 12. Otherwise, proceed to question 9. ☐Yes ☐No

[1] Assess the combined infiltration of the WQV by both biofiltration and infiltration BMPs. As site constraints allow, size the infiltration BMP up to the un-infiltrated WQV remaining after the biofiltration BMP.

[2] General metals is a designation used by Regional Water Boards when specific metals have not yet been identified as causing the impairment.

BMP Selection Matrix A: General Purpose Pollutant Removal			
Consider approaches to treat the remaining WQV with combinations of the BMPs in this table. The PE should select at least one BMP for the project; preference is for Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility (Section 2.4.2.1). BMPs are chosen based on the infiltration category determined in question 7. BMPs in other categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Strip: HRT > 5 Austin filter (concrete) Austin filter (earthen) Delaware filter MCTT Wet basin	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches* Biofiltration Strip	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches* Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Swale MCTT Wet basin	Austin filter (concrete) Delaware filter MCTT Wet basin
HRT = hydraulic residence time (min) *Infiltration BMPs that infiltrate the water quality volume were considered previously, so only undersized infiltration BMPs or hybrid designs are considered where infiltration is less than 90% of the water quality volume.			

9. Treating both Metals and Nutrients.

   Is copper, lead, zinc, or general metals *AND* nitrogen or phosphorous a TDC? If Yes, use Matrix D to select BMPs, then skip to question 12. Otherwise, proceed to question 10. ☐Yes ☐No

10. Treating Only Metals.

    Are copper, lead, zinc, or general metals listed TDCs? If Yes, use Matrix B below to select BMPs, and skip to question 12. Otherwise, proceed to question 11. ☐Yes ☐No

BMP Selection Matrix B: Any metal is the TDC, but not nitrogen or phosphorous			
Consider approaches to treat the remaining WQV with combinations of the BMPs in this table. The PE should select at least one BMP for the project; preference is for Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility (Section 2.4.2.1). BMPs are chosen based on the infiltration category determined in question 7. BMPs in other categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	MCTT Wet basin Austin filter (earthen) Austin filter (concrete) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches* MCTT Wet basin	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches* MCTT Biofiltration Strip Biofiltration Swale Wet basin
Tier 2	Strip: HRT > 5 Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) *Infiltration BMPs that infiltrate the water quality volume were considered previously, so only undersized infiltration BMPs or hybrid designs are considered where infiltration is less than 90% of the water quality volume.			

11. Treating Only Nutrients.

Are nitrogen and/or phosphorus listed TDCs? If "Yes," use Matrix C to select BMPs. If "No", please check your answer to 8(a). At this point one of the matrices should have been used for BMP selection for the TDC in question, unless no BMPs are feasible. ☐Yes ☐No

BMP Selection Matrix C: Phosphorous and / or nitrogen is the TDC, but no metals are the TDC			
Consider approaches to treat the remaining WQV with combinations of the BMPs in this table. The PE should select at least one BMP for the project; preference is for Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility (Section 2.4.2.1). BMPs are chosen based on the infiltration category determined in question 7. BMPs in other categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter**	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches*	Austin filter (earthen) Detention (unlined) Infiltration basins* Infiltration trenches* Biofiltration Strip Biofiltration Swale
Tier 2	Wet basin Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale Wet basin	Austin filter (concrete) Delaware filter Wet basin
* Infiltration BMPs that infiltrate the water quality volume were considered previously, so only undersized infiltration BMPs or hybrid designs are considered where infiltration is less than 90% of the water quality volume.			
** Delaware filters would be ranked in Tier 2 if the TDC is nitrogen only, as opposed to phosphorous only or both nitrogen and phosphorous.			

BMP Selection Matrix D: Any metal, plus phosphorous and / or nitrogen are the TDCs			
Consider approaches to treat the remaining WQV with combinations of the BMPs in this table. The PE should select at least one BMP for the project; preference is for Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility (Section 2.4.2.1). BMPs are chosen based on the infiltration category determined in question 7. BMPs in other categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Wet basin* Austin filter (earthen) Austin filter (concrete) Delaware filter**	Wet basin* Austin filter (earthen) Detention (unlined) Infiltration basins*** Infiltration trenches***	Wet basin* Austin filter (earthen) Detention (unlined) Infiltration basins*** Infiltration trenches*** Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
* The wet basin should only be considered for phosphorus			
** In cases where earthen BMPs can infiltrate, Delaware filters are ranked in Tier 2 if the TDC is nitrogen only, but they are Tier 1 for phosphorous only or both nitrogen and phosphorous.			
*** Infiltration BMPs that infiltrate the water quality volume were considered previously, so only undersized infiltration BMPs or hybrid designs are considered where infiltration is less than 90% of the water quality volume.			

12. Does the project discharge to a 303(d) waterbody that is listed for mercury or low dissolved oxygen? ☐Yes ☐No

    If Yes, contact the District/Regional NPDES Storm Water Coordinator to determine if standing water in a Delaware filter, wet basin, or MCTT would be a risk to downstream water quality.

13. After completing the above, identify and attach the checklists shown below for every Treatment BMP under consideration. (use one checklist every time the BMP is considered for a different drainage within the project) ☒Complete

    __x_ Biofiltration Strips and Biofiltration Swales: Checklist T-1, Part 2
    _____ Dry Weather Diversion: Checklist T-1, Part 3
    _____ Infiltration Devices: Checklist T-1, Part 4
    _____ Detention Devices: Checklist T-1, Part 5
    _____ GSRDs: Checklist T-1, Part 6
    _____ Traction Sand Traps: Checklist T-1, Part 7
    _____ Media Filter [Austin Sand Filter and Delaware Filter]: Checklist T-1, Part 8
    _____ Multi-Chambered Treatment Train: Checklist T-1, Part 9
    _____ Wet Basins: Checklist T-1, Part 10

14. Estimate what percentage of the net WQV (for all new impervious surfaces within the project) or WQF (depending upon the Treatment BMP selected) will be treated by the preferred Treatment BMP(s): ____15.4_____%* ☒Complete

15. Estimate what percentage of the net WQV (for all new impervious surfaces within the project) that will be infiltrated by the preferred treatment BMP(s): _____14_____%** ☒Complete

16. Prepare cost estimate, including right-of-way, and site specific determination of feasibility (Section 2.4.2.1) for selected Treatment BMPs and include as supplemental information for SWDR approval. ☒Complete

*Note: The amount of treatment should be calculated for each BMP and each subwatershed, unless all BMPs within a project are the same. Document in SWDR.

**Note: The Water Quality Volume infiltrated should be documented for the entire project and also for each subwatershed. Document in SWDR.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 1

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Consideration of Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will project increase velocity or volume of downstream flow?	☒Yes	☐No	☐NA
Will the project discharge to unlined channels?	☒Yes	☐No	☐NA
Will project increase potential sediment load of downstream flow?	☒Yes	☐No	☐NA
Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Downstream Effects Related to Potentially Increased Flow***, complete the DPP-1, Part 2 checklist.

Slope/Surface Protection Systems

Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA

If Yes was answered to the above question, consider ***Slope/Surface Protection Systems***, complete the DPP-1, Part 3 checklist.

Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?	☒Yes	☐No	☐NA
Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA
Will it be necessary to direct or intercept surface runoff?	☒Yes	☐No	☐NA
Will cross drains be modified?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Concentrated Flow Conveyance Systems***; complete the DPP-1, Part 4 checklist.

Preservation of Existing Vegetation

It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects. ☒Complete

Consider ***Preservation of Existing Vegetation***, complete the DPP-1, Part 5 checklist.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 2

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Downstream Effects Related to Potentially Increased Flow

1. Review total paved area and reduce to the maximum extent practicable.	☒Complete
2. Review channel lining materials and design for stream bank erosion control.	☒Complete
(a) See Chapters 860 and 870 of the HDM.	☒Complete
(b) Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.	☒Complete
3. Include, where appropriate, energy dissipation devices at culvert outlets.	☒Complete
4. Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	☒Complete
5. Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges.	
6. Calculate the water quality volume infiltrated by DPP BMPs within the project limits. Include the percentage of the water quality volume for each BMP and subwatershed, as appropriate, for site conditions. These calculations will be used later in the T-1 checklist.	☒Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 3

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Slope / Surface Protection Systems

1.	What are the proposed areas of cut and fill? (attach plan or map)	☒Complete
2.	Were benches or terraces provided on high cut and fill slopes to reduce concentration of flows?	☐Yes ☒No
3.	Were slopes rounded and/or shaped to reduce concentrated flow?	☐Yes ☒No
4.	Were concentrated flows collected in stabilized drains or channels?	☒Yes ☐No
5.	Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)?	☒Yes ☐No
	If Yes, District Landscape Architect must prepare or approve an erosion control plan, at the District's discretion.	
6.	Are new or disturbed slopes > 2:1 (h:v)?	☒Yes ☐No
	If Yes, Geotechnical Services must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Storm Water Coordinator for slopes steeper than 2:1 (h:v).	
7.	Estimate the net new impervious area that will result from this project. 3.4acres	☒Complete

VEGETATED SURFACES

1.	Identify existing vegetation.	☒Complete
2.	Evaluate site to determine soil types, appropriate vegetation and planting strategies.	☒Complete
3.	How long will it take for permanent vegetation to establish?	☒Complete
4.	Minimize overland and concentrated flow depths and velocities.	☒Complete

HARD SURFACES

1.	Are hard surfaces required?	☒Yes ☐No
	If Yes, document purpose (safety, maintenance, soil stabilization, etc.), types, and general locations of the installations.	☒Complete

Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems. ☒Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 4

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, and 835, and Chapter 860 of the HDM. ☒Complete
2. Evaluate risks due to erosion, overtopping, flow backups or washout. ☒Complete
3. Consider outlet protection where localized scour is anticipated. ☒Complete
4. Examine the site for run-on from off-site sources. ☒Complete
5. Consider channel lining when velocities exceed scour velocity for soil. ☒Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. ☒Complete
2. Consider paved spillways for side slopes flatter than 4:1 h:v. ☒Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. ☒Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. ☒Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. ☒☐Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 5

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Preservation of Existing Vegetation

1. Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation. ☒Complete
2. Has all vegetation to be retained been coordinated with Environmental, and identified and defined in the contract plans? ☒Yes ☐No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling? ☒Complete
4. Have impacts to preserved vegetation been considered while work is occurring in disturbed areas? ☒Yes ☐No
5. Are all areas to be preserved delineated on the plans? ☒Yes ☐No

Construction Site BMPs
Checklist CS-1, Part 1

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? _____
2. What is the total disturbed soil area for the project? (ac) _____
   (a) How much of the project DSA consists of slopes 4:1 (h:v) or flatter? Sheet flow not to exceed 20 ft (ac). _____
   (b) How much of the project DSA consists of 4:1 (h:v) < slopes < 2:1 (h:v)? Sheet flow not exceed 15 ft (ac). _____
   (c) How much of the project DSA consists of slopes 2:1 (h:v) and steeper? Sheet flow not exceed 10 ft (ac). _____
3. What rainfall area does the project lie within? (Refer to 2003 Caltrans SWMP) _____
4. Review the required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. (Refer to Tables 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) ☐Complete

Scheduling (SS-1)

5. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? ☐Yes ☐No
   (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) ☐Complete
   (b) Edit Order of Work specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. ☐Complete

(c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. ☐Complete

Preservation of Existing Vegetation (SS-2)

6. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the project limits? (Verify the completion of DPP-1, Part 5) ☐Yes ☐No

   (a) Verify the protection of ESAs through delineation on all project plans. ☐Complete

   (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. ☐Complete

7. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) ☐Yes ☐No

   (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. ☐Complete

   (b) Protect with high visibility plastic fence or other BMP. ☐Complete

8. If yes for 6, 7, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).* ☐Complete

Slope Protection

9. Provide a soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District/Regional Landscape Architect.)

   (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-6 (Straw Mulch), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-8 (Wood Mulching), other BMPs or a combination to cover the DSA throughout the project's rainy season. ☐Complete

   (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

   (c) Designate as a separate contract bid line item. ☐Complete

Slope Interrupter Devices

10. Provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements..

    (a) Select SC-5 (Fiber Rolls) or other BMPs to protect slopes throughout the project's rainy season. ☐Complete

    (b) For slope inclination of 4:1 (h:v) and flatter, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 20 ft on center. ☐Complete

    (c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 15 ft on center. ☐Complete

    (d) For slope inclination of 2:1 (h:v) and greater, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 10 ft on center. ☐Complete

    (e) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) ☐Complete

    (f) Designate as a separate contract bid line item. ☐Complete

Channelized Flow

11. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the right-of-way (off-site run-on). ☐Complete

    (a) Utilize SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-9 (Earth Dikes/Swales, Ditches), SS-10 (Outlet Protection/Velocity Dissipation), SS-11 (Slope Drains), SC-4 (Check Dams), or other BMPs to convey concentrated flows in a non-erosive manner. ☐Complete

    (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 2

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? ☐Yes ☐No

   (a) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) ☐Complete

   (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

   (c) Designate as a separate contract bid line item. ☐Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? ☐Yes ☐No

   (a) Utilize linear sediment barriers such as SS-9 (Earth Dike/Drainage Swales and Lined Ditches), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the project limits? ☐Yes ☐No

   (a) Select SC-10 (Storm Drain Inlet Protection) to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in SC-10 (Storm Drain Inlet Protection- Type 2)? ☐Yes ☐No

   (a) Include with other types of SC-10 (Storm Drain Inlet Protection). ☐Complete

Sediment/Desilting Basin (SC-2)

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? (Refer to Tables 2-1, 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) ☐Yes ☐No

   (a) Consider feasibility for desilting basin allowing for available right-of-way within the project limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. ☐Complete

   (b) If feasible, design desilting basin(s) per the guidance in the CASQA Construction BMP Guidance Handbookl to maximize capture of sediment-laden runoff. ☐Complete

   Designate as a separate contract bid item. ☐Complete

6. Is ATS to be used for controlling sediment? ☐Yes ☐No

   (a) If "yes", then will desilting basin or other means of natural storage be used? ☐Yes ☐No

   (b) If "no", then plan for storage tanks sufficient to hold treatment volume. ☐Comple

7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) ☐Yes ☐No

   (a) Edit Order of Work specifications for permanent treatment BMP work to be implemented in a manner that will allow its use as a construction site BMP. ☐Complete

Sediment Trap (SC-3)

8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? ☐Yes ☐No

   (a) Design sediment traps in accordance with the CASQA Construction BMP GuidanceHandbook. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 3

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Tracking Controls

Stabilized Construction Entrance/Exit (TC-1)

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) ☐Yes ☐No

   (a) Identify and designate these entrance/exit points as stabilized construction entrances (TC-1). ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Tire/Wheel Wash (TC-3)

1. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) ☐Yes ☐No

   Designate as a separate contract bid line item. ☐Complete

Stabilized Construction Roadway (TC-2)

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) ☐Yes ☐No

   (a) Designate these temporary access roads as stabilized construction roadways (TC-2). ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Street Sweeping and Vacuuming (SC-7)

1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) ☐Yes ☐No

   Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 4

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Wind Erosion Controls

Wind Erosion Control (WE-1)

1. Is the project located in an area where standard dust control practices in accordance with Standard Specifications, Section 13: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)* ☐Yes ☐No

   (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-8 (Wood Mulching) or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 5

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Non-Storm Water Management

Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

1. Will construction activities occur within a waterbody or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) ☐Yes ☐No

   (a) Select from types offered in NS-4 (Temporary Stream Crossing) to provide access through watercourses consistent with permits and agreements.[1] ☐Complete

   (b) Select from types offered in NS-5 (Clear Water Diversion) to divert watercourse consistent with permits and agreements.[1] ☐Complete

   (c) Designate as a separate contract bid line item(s). ☐Complete

Other Non-Storm Water Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☐Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as NS-1 (Water Conservation Practices), NS-2 (Dewatering Operations), NS-3 (Paving and Grinding Operations), NS-7 (Potable Water/Irrigation), NS-8 (Vehicle and Equipment Cleaning), NS-9 (Vehicle and Equipment Fueling), NS-10 (Vehicle and Equipment Maintenance), NS-11 (Pile Driving Operations), NS-12 (Concrete Curing), NS-13 (Material and Equipment Use Over Water), NS-14 (Concrete Finishing), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).[1] ☐Complete

   (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

[1] Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.

Construction Site BMPs
Checklist CS-1, Part 6

Prepared by: Jae Lee Date: 1/29/2013 District-Co-Route: 04-CC-4&242

PM : R8.0/25.0&R0.0/3.4 Project ID (or EA): 04-152721 RWQCB: SF Bay (RB2)

Waste Management & Materials Pollution Control

Concrete Waste Management (WM-8)

1. Does the project include concrete placement or mortar mixing? ☐Yes ☐No

   (a) Select from types offered in WM-8 (Concrete Waste Management) to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd^3 or if requested by Construction. ☐Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☐Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as WM-1 (Material Delivery and Storage), WM-2 (Material Use), WM-4 (Spill Prevention and Control), WM-5 (Solid Waste Management), WM-6 (Hazardous Waste Management), WM-7 (Contaminated Soil Management), WM-9 (Sanitary/Septic Waste Management) and WM-10 (Liquid Waste Management) ☐Complete

   (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction? ☐Yes ☐No

   (a) Select WM-3 (Stockpile Management), SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), or a combination as appropriate to cover temporary stockpiles of soil, etc. ☐Complete

(b) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to encircle temporary stockpiles of soil, etc. (Coordinate with District Construction for selection and preference of BMPs related to stockpiles.) ☐Complete

(c) Designate as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

4. Is there a potential for dust and debris from construction material (fill material, etc.) and waste (concrete, contaminated soil, etc.) stockpiles to be transported offsite by wind? ☐Yes ☐No

(a) Select SS-7, temporary cover, plastic sheeting or other BMP to cover stockpiles subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☐Complete

(b) Designate as a separate contract bid line item. ☐Complete

Post-Construction Water Balance Calculator

User may make changes from any cell that is orange or brown in color (similar to the cells to the immediate right). Cells in green are calculated for you.		(Step 1a) If you know the 85th percentile storm event for your location enter it in the text below		(Step 1b) If you can not answer 1a then select the county where the project is located (click on the cell to the right for drop-down). This will determine the average 85th percentile 24 hr. storm event for your site, which will appear under precipitation to left.	SONOMA		
				(Step 1c) If you would like a more precise value select the location closest to your site. If you do not recognize any of these locations, leave this drop-down menu at location. The average value for the County will be used.	SANTA ROSA		
Project Information				**Runoff Calculations**			
Project Name:	1A2001			(Step 2) Indicate the Soil Type (dropdown menu to right):	Group D Soils	Very low infiltration. Clay loam, silty clay loam, sandy clay, silty clay, or clay. Infiltration rate 0 to 0.05 inch/hr when wet.	
Waste Discharge Identification (WDID):	Optional			(Step 3) Indicate the existing dominant non-built land Use Type (dropdown menu to right):	Open Space: grass cover >75%		
Date:	9/7/2012			(Step 4) Indicate the proposed dominant non-built land Use Type (dropdown menu to right)	Lawn, Grass, or Pasture covering more than 75% of the open space		
Sub Drainage Area Name (from map):	Laguna HAS				Complete Either		
Runoff Curve Numbers					Sq Ft	Acres	Acres
Existing Runoff Curve Number	90			(Step 5) Total Project Site Area:			5.94
Proposed Development Runoff Curve Number	94			(Step 6) Sub-watershed Area:			5.94
Design Storm				Percent of total project:	100%		
Based on the County you indicated above, we have included the 85 percentile average 24 hr event - P85 (in)* for your area	1.00	In					
The Amount of rainfall needed for runoff to occur (Existing runoff curve number -P from existing RCN (in)*)	0.22	In		(Step 7) Sub-watershed Conditions	Complete Either		Calculated Acres
P used for calculations (in)-(the greater of the above two criteria)	1.00	In		Sub-watershed Area (acres)	Sq Ft	Acres	5.94
*Available at www.calmphandbooks.com				Existing Rooftop Impervious Coverage			0.00
				Existing Non-Rooftop Impervious Coverage			3.27
				Proposed Rooftop Impervious Coverage			0.00
				Proposed Non-Rooftop Impervious Coverage			4.73
				Credits	**Acres**		**Square Feet**
				Porous Pavement	0.00		0
				Tree Planting	0.00		0
Pre-Project Runoff Volume (cu ft)	6,913	Cu.Ft.		Downspout Disconnection	0.00		0
Project-Related Runoff Volume Increase w/o credits (cu ft)	3,933	Cu.Ft.		Impervious Area Disconnection	0.00		0
				Green Roof	0.00		0
				Stream Buffer	0.00		0
Project-Related Volume Increase with Credits (cu ft)	0	Cu.Ft.		Vegetated Swales	4.73		206,039
				Subtotal	4.73		206,039
				Potential Runoff Volume Reduction Credit	8636 Cu. Ft.		
Total Runoff Volume Reduction Credit				(Step 8) Impervious Volume Reduction Credits	Volume (cubic feet)		
				Rain Barrels/Cisterns	0 Cu. Ft.		
				Soil Quality	0 Cu. Ft.		
				Subtotal Runoff Volume Reduction	0 Cu. Ft.		
				Total Runoff Volume Reduction Credit	8,636 Cu. Ft.		


122° 8' 5"
122° 7' 26"
37° 59' 38"
37° 59' 17"
576000
576100
576200
576300
576400
576500
576600
576700
576800
576900
4205500
4205400
4205300
4205200
4205100
4205000
4204900
Raven Ave
Arroyo Dr
Canyon Way
Freda Ct
Florence Dr
Alhambra Ave
Castro St
Walnut Ave
Alhambra Way
Douglas Dr
LmF
GaC
Arroyo del Hambre Creek
Janet Ln
BrA
LcF
GaA
Franklin Canyon Rd
Franklin Creek
Muir Station Rd
Pleasant Hill Rd
Brackman Ln
Laurel Ct
Hayward Ct
Hess Rd
Grollman Ln
Map Scale: 1:4,660 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1,000 1,500

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:4,660 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/12/2005; 6/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaA	BOTELLA CLAY LOAM, 0 TO 2 PERCENT SLOPES	28.2	62.1%
GaA	GARRETSON LOAM, 0 TO 2 PERCENT SLOPES	3.7	8.2%
GbG	GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES	0.7	1.6%
LeE	LOS GATOS LOAM, 15 TO 30 PERCENT SLOPES	2.0	4.4%
LeF	LOS GATOS LOAM, 30 TO 50 PERCENT SLOPES	9.8	21.7%
LhF	LOS OSOS CLAY LOAM, 30 TO 50 PERCENT SLOPES	1.0	2.1%
Totals for Area of Interest		**45.4**	**100.0%**

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BaA—BOTELLA CLAY LOAM, 0 TO 2 PERCENT SLOPES								
Botella	85	—	B	.24	5	35.4	33.6	31.0
GsA—GARRETSON LOAM, 0 TO 2 PERCENT SLOPES								
Garretson	85	—	B	.32	5	42.1	37.9	20.0
GbG—GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES								
Gaviota	85	—	D	.24	1	66.8	19.2	14.0
LeE—LOS GATOS LOAM, 15 TO 30 PERCENT SLOPES								
Los gatos	85	—	C	.28	2	39.8	37.7	22.5
LeF—LOS GATOS LOAM, 30 TO 50 PERCENT SLOPES								
Los gatos	85	—	C	.32	2	39.8	37.7	22.5
LhF—LOS OSOS CLAY LOAM, 30 TO 50 PERCENT SLOPES								
Los osos	85	—	C	.28	3	35.4	33.6	31.0

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 6' 24"
122° 5' 38"
37° 59' 44"
37° 59' 19"
578500
578600
578700
578800
578900
579000
579100
579200
579300
579400
579500
4205700
4205600
4205500
4205400
4205300
4205200
4205100
4205000
Arnold Dr
Shadowlake Dr
Ashford Pl
Hatchwood Ct
Fig Tree Ln
Gilda Ave
Eastwoodbury Ln
Windswept Ct
Santos Ranch Ct
Hull Ln
Muir Rd
Santos Ranch Ln
Tina Ct
Rosevale Dr
Nelson Cir
Kerri Anne Dr
TaC
Morello Ave
Eastgate Ln
Sundance Pl
LeC
CoB
Rolling Hill Pkwy
Rainbow Dr
Morello Ct
Paradise Dr
Diablo Ct
Dale Rd
Vine Hill Way
Gatewood Ct
Elderwood Dr
Map Scale: 1:6,430 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 300 600 1,200 1,800

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:5,430 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CoE	CUT AND FILL LAND-MILLSHOLM COMPLEX, 9 TO 30 PERCENT SLOPES	0.2	0.4%
LcE	LODO CLAY LOAM, 9 TO 30 PERCENT SLOPES	30.9	57.4%
TaC	TIERRA LOAM, 2 TO 9 PERCENT SLOPES	22.3	41.5%
W	WATER	0.4	0.7%
Totals for Area of Interest		**53.8**	**100.0%**

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
CoE—CUT AND FILL LAND-MILLSHOLM COMPLEX, 9 TO 30 PERCENT SLOPES								
Cut and fill land (fill part)	75	—	D	—	—	—	—	—
Millsholm	15	—	D	.32	1	39.2	37.3	23.5
LcE—LODO CLAY LOAM, 9 TO 30 PERCENT SLOPES								
Lodo	85	—	D	.24	1	35.4	33.6	31.0
TaC—TIERRA LOAM, 2 TO 9 PERCENT SLOPES								
Tierra	85	—	D	.32	4	41.6	37.4	21.0
W—WATER								
Water	100	—	—	—	—	—	—	—

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 4' 48"
122° 4' 16"
37° 59' 44"
37° 59' 26"
580800
580890
580980
581070
581160
581250
581340
581430
581520
4205670
4205580
4205490
4205400
4205310
4205220
Starflower Dr
Arnold Dr
Foothill Dr
Willowmyer Ct
Blum Rd
Contra Costa Canal
GbC
GbE
PaC
Pacheco Blvd
Contra Costa Canal Trl
Temple Dr
Mulr Rd
Peak Pl
Buchanan Cir
Map Scale: 1:3,880 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 200 400 800 1,200

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:3,880 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GbE	GAVIOTA SANDY LOAM, 15 TO 30 PERCENT SLOPES	12.4	34.8%
GbG	GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES	1.6	4.4%
PkC	POSITAS LOAM, 2 TO 9 PERCENT SLOPES	21.7	60.8%
Totals for Area of Interest		**35.7**	**100.0%**

RUSLE2 Related Attributes

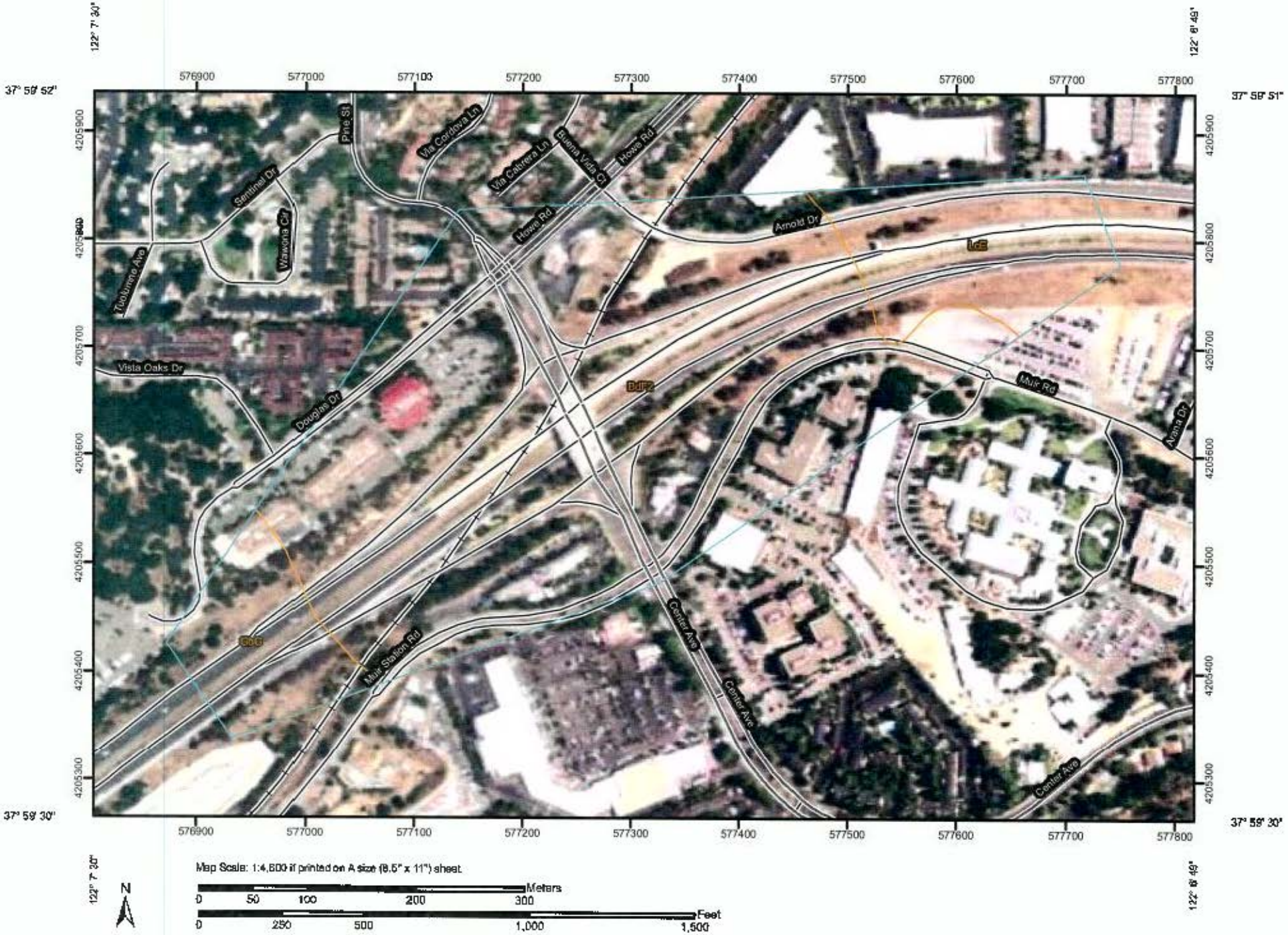
This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
GbE—GAVIOTA SANDY LOAM, 15 TO 30 PERCENT SLOPES								
Gaviota	85	—	D	.24	1	66.8	19.2	14.0
GbG—GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES								
Gaviota	85	—	D	.24	1	66.8	19.2	14.0
PkC—POSITAS LOAM, 2 TO 9 PERCENT SLOPES								
Positas	85	—	D	.37	4	42.1	37.9	20.0

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 7' 30"
122° 6' 49"
37° 59' 52"
37° 59' 51"
37° 59' 30"
37° 59' 30"
576900
577000
577100
577200
577300
577400
577500
577600
577700
577800
4205900
4205800
4205700
4205600
4205500
4205400
4205300
Pine St
Via Cordova Ln
Via Cabrera Ln
Buena Vista Ct
Howe Rd
Sentinel Dr
Wawona Ct
Arnold Dr
IcE
Tuolumne Ave
Vista Oaks Dr
Douglas Dr
BdF2
Muir Rd
Arana Dr
GbC
Muir Station Rd
Center Ave
Map Scale: 1:4,800 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1,000 1,500

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:4,800 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 8/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CaA	CAPAY CLAY, 0 TO 2 PERCENT SLOPES	9.3	17.2%
Cc	CLEAR LAKE CLAY	24.2	44.4%
DdD	DIABLO CLAY, 9 TO 15 PERCENT SLOPES	6.8	12.6%
Oa	OMNI CLAY LOAM	14.0	25.8%
Totals for Area of Interest		**54.4**	**100.0%**

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
CaA—CAPAY CLAY, 0 TO 2 PERCENT SLOPES								
Capay	85	—	D	.20	5	28.1	29.4	42.5
Cc—CLEAR LAKE CLAY								
Clear lake	85	—	D	.20	5	22.1	27.9	50.0
DdD—DIABLO CLAY, 9 TO 15 PERCENT SLOPES								
Diablo	85	—	D	.20	4	22.1	27.9	50.0
Oa—OMNI CLAY LOAM								
Omni	85	—	D	.24	5	34.2	32.3	33.5

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 2' 25"
122° 1' 10"
38° 0' 47"
38° 0' 46"
38° 0' 7"
38° 0' 7"
584400
584600
584800
585000
585200
585400
585600
585800
586000
4207600
4207400
4207200
4207000
4206800
4206600
Mason Cir
Pike Ct
Pike Ln
Industrial Way
Spring Dr
Mallard Dr
RbA
KaC
Arnold Industrial Way
AbD
Bayview Cir
Riverview Dr
Panoramic Dr
Bayview Ct
Port Chicago Hwy
Saint George Dr
Brunswick St
Salisbury Ln
Yukon St
Montreal Cir
Calgary Ln
Vancouver Way
Edmonton Way
Hillsborough Dr
Ranchlite Dr
Sanford St
Ranchford Ct
San Michelle Dr
San Michelle Ct
Grant Way
Sunview Way
Sunview Pl
Sunview Ter
Naval Weapons Quarters Sta
KaE
ZaA
Northwood Dr
Crambrook Way
Toronto Ln
Quebec St
Greenbriar St
Map Scale: 19,730 if printed on A size (8.5" x 11") sheet.
N
Meters
0 100 200 400 600
Feet
0 450 900 1,800 2,700

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:8,730 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AbD	ALTAMONT CLAY, 9 TO 15 PERCENT SLOPES	83.9	65.6%
KaC	KIMBALL GRAVELLY CLAY LOAM, 2 TO 9 PERCENT SLOPES	3.5	2.7%
KaE	KIMBALL GRAVELLY CLAY LOAM, 9 TO 30 PERCENT SLOPES	2.6	2.0%
RbA	RINCON CLAY LOAM, 0 TO 2 PERCENT SLOPES	37.5	29.3%
ZaA	ZAMORA SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	0.3	0.3%
Totals for Area of Interest		**127.8**	**100.0%**

RUSLE2 Related Attributes

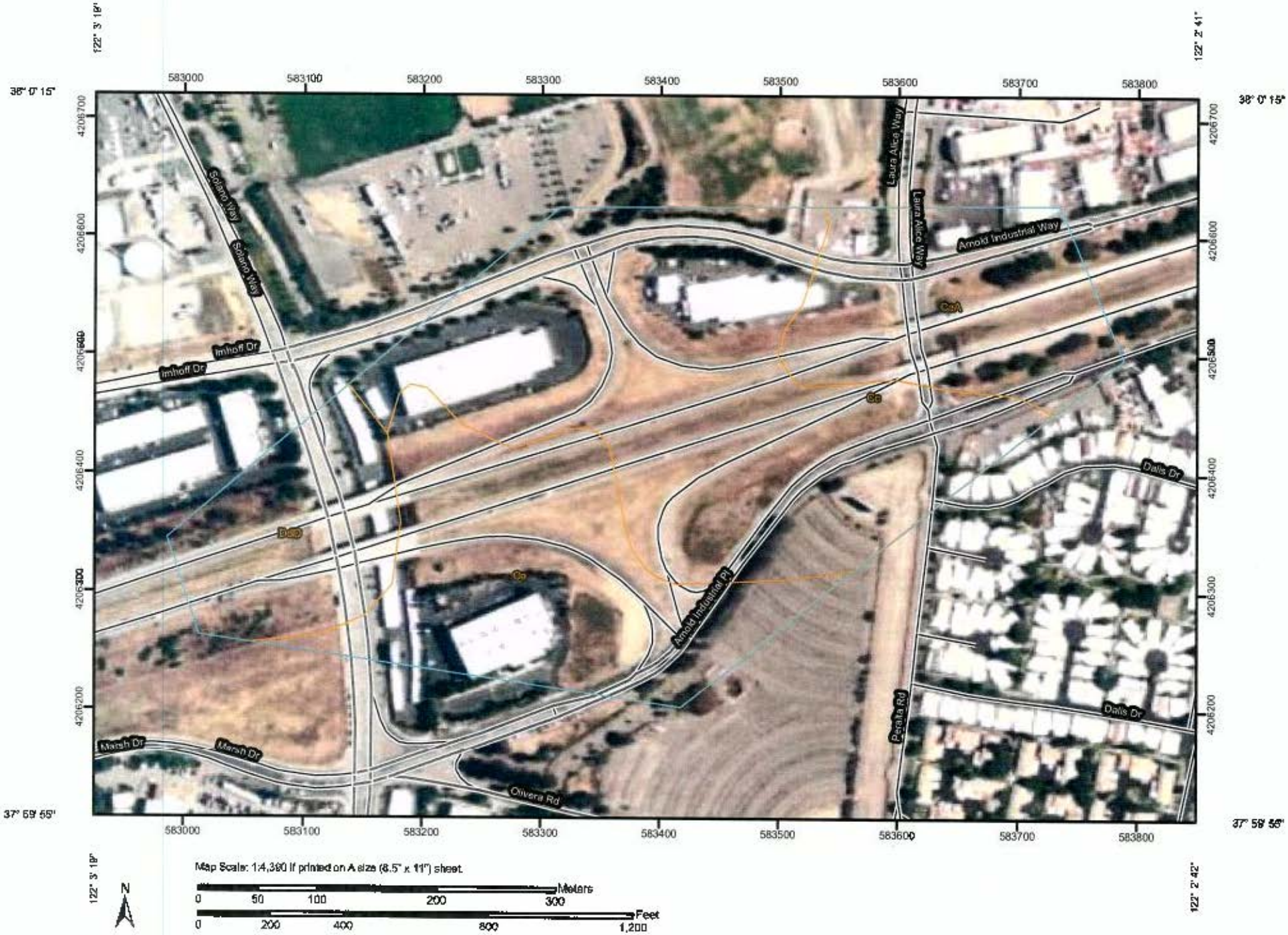
This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
AbD—ALTAMONT CLAY, 9 TO 15 PERCENT SLOPES								
Altamont	85	—	D	.20	4	22.1	27.9	50.0
KaC—KIMBALL GRAVELLY CLAY LOAM, 2 TO 9 PERCENT SLOPES								
Kimball	85	—	C	.32	3	35.4	33.6	31.0
KaE—KIMBALL GRAVELLY CLAY LOAM, 9 TO 30 PERCENT SLOPES								
Kimball	85	—	C	.32	3	35.4	33.6	31.0
RbA—RINCON CLAY LOAM, 0 TO 2 PERCENT SLOPES								
Rincon	85	—	C	.28	5	35.4	33.6	31.0
ZaA—ZAMORA SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES								
Zamora	85	—	B	.32	5	6.0	59.0	35.0

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 3' 18"
122° 2' 41"
38° 0' 15"
37° 59' 55"
583000
583100
583200
583300
583400
583500
583600
583700
583800
4206700
4206600
4206500
4206400
4206300
4206200
Solano Way
Imhoff Dr
Laura Alice Way
Arnold Industrial Way
Arnold Industrial Pl
Dalis Dr
Peralta Rd
Marsh Dr
Olivera Rd
CaA
Ca
DaD
Map Scale: 1:4,390 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 200 400 800 1,200

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:4,390 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/13/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BdF2	BRIONES LOAMY SAND, 30 TO 50 PERCENT SLOPES, ERODED	44.7	78.5%
GbG	GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES	5.0	8.7%
LoE	LODO CLAY LOAM, 9 TO 30 PERCENT SLOPES	7.3	12.8%
Totals for Area of Interest		**57.0**	**100.0%**

RUSLE2 Related Attributes

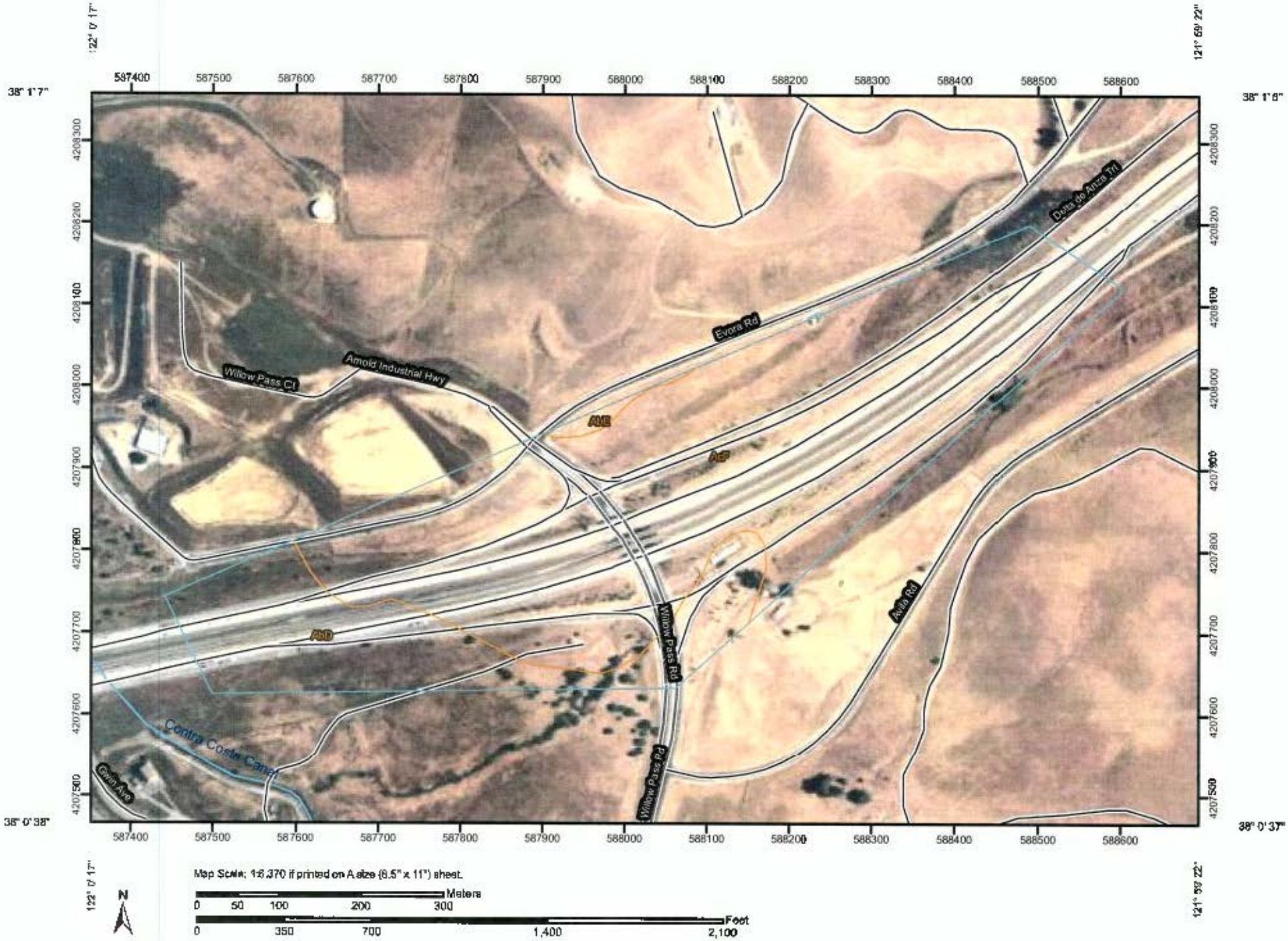
This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BdF2—BRIONES LOAMY SAND, 30 TO 50 PERCENT SLOPES, ERODED								
Briones	85	—	B	.20	3	80.5	17.0	2.5
GbG—GAVIOTA SANDY LOAM, 50 TO 75 PERCENT SLOPES								
Gaviota	85	—	D	.24	1	66.8	19.2	14.0
LcE—LODO CLAY LOAM, 9 TO 30 PERCENT SLOPES								
Lodo	85	—	D	.24	1	35.4	33.6	31.0

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008


122° 0' 17"
121° 59' 22"
38° 1' 7"
38° 0' 38"
587400
587500
587600
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588500
588600
4208300
4208200
4208100
4208000
4207900
4207800
4207700
4207600
4207500
Willow Pass Ct
Arnold Industrial Hwy
Evora Rd
Delta de Anza Trl
AbE
AbF
AbD
Willow Pass Rd
Avila Rd
Contra Costa Canal
Gwin Ave
Map Scale: 1:6,370 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 350 700 1,400 2,100

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,370 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

Date(s) aerial images were photographed: 6/13/2005; 6/30/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Contra Costa County, California (CA013)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AbD	ALTAMONT CLAY, 9 TO 15 PERCENT SLOPES	16.1	23.2%
AbE	ALTAMONT CLAY, 15 TO 30 PERCENT SLOPES	0.5	0.8%
AcF	ALTAMONT-FONTANA COMPLEX, 30 TO 50 PERCENT SLOPES	53.0	76.1%
Totals for Area of Interest		**69.7**	**100.0%**

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes– Contra Costa County, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
AbD—ALTAMONT CLAY, 9 TO 15 PERCENT SLOPES								
Altamont	85	—	D	.20	4	22.1	27.9	50.0
AbE—ALTAMONT CLAY, 15 TO 30 PERCENT SLOPES								
Altamont	85	—	D	.20	4	22.1	27.9	50.0
AcF—ALTAMONT-FONTANA COMPLEX, 30 TO 50 PERCENT SLOPES								
Altamont	50	—	D	.20	4	22.1	27.9	50.0
Fontana	35	—	B	.37	3	18.1	50.9	31.0

Data Source Information

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 8, Jul 22, 2008

CONCORD WASTEWATER PLAN, CALIFORNIA

Period of Record General Climate Summary - Precipitation

Station:(041967) CONCORD WASTEWATER PLAN															
From Year=1991 To Year=2012															
	Precipitation											Total Snowfall			
	Mean	High	Year	Low	Year	1 Day Max.		>= 0.01 in.	>= 0.10 in.	>= 0.50 in.	>= 1.00 in.	Mean	High	Year	
	in.	in.	-	in.	-	in.	dd/yyyy or yyyymmdd	# Days	# Days	# Days	# Days	in.	in.	-	
January	3.73	10.16	1995	0.43	2007	3.24	04/2008	11	7	3	1	0.0	0.0	1992	
February	3.89	11.13	1998	0.11	1997	2.19	03/1998	11	8	3	1	0.0	0.0	1992	
March	2.33	8.10	1995	0.15	2007	1.42	09/1995	8	6	2	0	0.0	0.0	1992	
April	1.17	3.81	2006	0.00	2008	1.10	13/2003	6	4	1	0	0.0	0.0	1992	
May	0.68	2.70	1998	0.00	1992	1.16	16/1996	4	2	0	0	0.0	0.0	1992	
June	0.18	1.75	2011	0.00	1996	1.02	16/1995	1	0	0	0	0.0	0.0	1992	
July	0.00	0.00	1992	0.00	1992	0.00	01/1992	0	0	0	0	0.0	0.0	1992	
August	0.03	0.40	1997	0.00	1992	0.40	20/1997	0	0	0	0	0.0	0.0	1992	
September	0.03	0.11	2000	0.00	1992	0.10	25/2001	1	0	0	0	0.0	0.0	1991	
October	0.77	2.90	2009	0.00	1995	2.00	13/2009	3	2	0	0	0.0	0.0	1991	
November	1.88	5.49	1994	0.01	1995	2.48	06/1994	6	4	1	0	0.0	0.0	1991	
December	3.69	11.79	2005	0.07	2011	3.95	31/2005	10	7	3	1	0.0	0.0	1991	
Annual	18.38	26.62	1995	10.57	2007	3.95	20051231	59	40	13	3	0.0	0.0	1992	
Winter	11.32	20.14	1998	4.06	2012	3.95	20051231	31	23	8	2	0.0	0.0	1992	
Spring	4.17	10.64	2006	0.15	2008	1.42	19950309	17	11	3	1	0.0	0.0	1992	
Summer	0.21	1.75	2011	0.00	1996	1.02	19950616	1	1	0	0	0.0	0.0	1992	
Fall	2.68	6.02	1997	0.01	1995	2.48	19941106	9	6	2	0	0.0	0.0	1991	

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

CONCORD WASTEWATER PLAN, CALIFORNIA

Period of Record General Climate Summary - Temperature

Station:(041967) CONCORD WASTEWATER PLAN

From Year=1991 To Year=2012

	Monthly Averages			Daily Extremes				Monthly Extremes				Max. Temp.		Min. Temp.	
	Max.	Min.	Mean	High	Date	Low	Date	Highest Mean	Year	Lowest Mean	Year	>= 90 F	<= 32 F	<= 32 F	<= 0 F
	F	F	F	F	dd/yyyy or yyyymmdd	F	dd/yyyy or yyyymmdd	F	-	F	-	# Days	# Days	# Days	# Days
January	57.2	41.5	49.4	74	12/2009	26	13/2007	52.7	1995	46.4	1992	0.0	0.0	1.6	0.0
February	61.8	44.0	52.9	78	06/2011	30	26/2011	56.2	1992	50.4	2011	0.0	0.0	0.1	0.0
March	67.1	46.4	56.8	86	15/2004	34	08/2002	62.2	2004	51.9	2006	0.0	0.0	0.0	0.0
April	71.1	48.6	59.9	96	27/2004	38	01/1999	63.5	1992	55.9	2003	0.5	0.0	0.0	0.0
May	77.5	53.1	65.3	101	31/2001	41	13/1999	70.9	2001	59.4	1998	2.3	0.0	0.0	0.0
June	83.5	56.6	70.0	108	15/2000	47	19/2010	72.8	2001	66.3	1998	7.7	0.0	0.0	0.0
July	87.6	58.0	72.8	110	23/2006	51	18/1999	76.9	2006	70.2	2000	11.3	0.0	0.0	0.0
August	87.8	58.4	73.1	106	25/2010	51	27/2009	75.3	1996	70.3	2010	11.9	0.0	0.0	0.0
September	85.2	57.2	71.2	102	19/2000	47	30/2007	73.8	1997	68.1	2005	9.1	0.0	0.0	0.0
October	77.2	52.9	65.0	99	04/1991	40	31/1991	68.1	1991	62.2	2007	1.9	0.0	0.0	0.0
November	65.7	45.8	55.7	83	02/1997	31	11/2000	60.3	1995	50.0	1994	0.0	0.0	0.2	0.0
December	57.7	41.3	49.5	74	19/1999	24	23/1998	53.8	1995	46.2	1994	0.0	0.0	2.1	0.0
Annual	73.3	50.3	61.8	110	20060723	24	19981223	63.2	1996	60.7	1994	44.7	0.0	4.0	0.0
Winter	58.9	42.3	50.6	78	20110206	24	19981223	53.2	1996	48.4	1999	0.0	0.0	3.8	0.0
Spring	71.9	49.4	60.6	101	20010531	34	20020308	63.9	1997	58.0	1999	2.8	0.0	0.0	0.0
Summer	86.3	57.7	72.0	110	20060723	47	20100619	74.1	1996	70.2	2010	30.9	0.0	0.0	0.0
Fall	76.0	51.9	64.0	102	20000919	31	20001111	66.5	1995	61.6	1994	11.0	0.0	0.2	0.0

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

Western Regional Climate Center, wrcc@dri.edu

MARTINEZ WATER PLANT, CALIFORNIA

Period of Record General Climate Summary - Precipitation

Station:(045378) MARTINEZ WATER PLANT														
From Year=1970 To Year=2012														
	Precipitation											Total Snowfall		
	Mean	High	Year	Low	Year	1 Day Max.		>= 0.01 in.	>= 0.10 in.	>= 0.50 in.	>= 1.00 in.	Mean	High	Year
	in.	in.	-	in.	-	in.	dd/yyyy or yyyymmdd	# Days	# Days	# Days	# Days	in.	in.	-
January	3.93	10.38	1995	0.33	1984	4.38	05/1982	11	7	3	1	0.0	0.0	1971
February	3.61	12.18	1998	0.13	1995	3.22	03/1998	10	7	3	1	0.0	0.0	1970
March	2.92	10.00	1995	0.00	1988	2.30	31/1982	9	6	2	1	0.0	0.0	1970
April	1.20	4.33	2006	0.04	1985	1.50	13/2003	6	3	1	0	0.0	0.0	1970
May	0.47	2.66	1998	0.00	1970	1.53	16/1996	3	1	0	0	0.0	0.0	1970
June	0.10	1.37	1995	0.00	1971	1.28	16/1995	1	0	0	0	0.0	0.0	1970
July	0.02	0.28	1974	0.00	1970	0.26	08/1974	0	0	0	0	0.0	0.0	1970
August	0.05	0.71	1983	0.00	1970	0.65	20/1997	0	0	0	0	0.0	0.0	1970
September	0.18	1.23	1989	0.00	1970	0.95	30/1983	1	1	0	0	0.0	0.0	1970
October	0.95	4.00	2009	0.00	1978	3.08	14/2009	3	2	1	0	0.0	0.0	1970
November	2.52	6.86	1994	0.04	1995	3.78	06/1994	8	5	2	1	0.0	0.0	1970
December	3.44	10.85	2005	0.00	1989	3.68	31/2005	10	7	2	1	0.0	0.0	1970
Annual	19.37	39.09	1983	7.80	1976	4.38	19820105	63	40	13	4	0.0	0.0	1971
Winter	10.97	21.83	1998	2.89	1976	4.38	19820105	32	21	8	3	0.0	0.0	1971
Spring	4.58	12.07	1983	0.09	2008	2.30	19820331	18	11	3	1	0.0	0.0	1970
Summer	0.17	1.37	1995	0.00	1971	1.28	19950616	1	1	0	0	0.0	0.0	1970
Fall	3.65	8.70	1982	0.04	1995	3.78	19941106	12	8	2	1	0.0	0.0	1970

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons

Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May

Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

MARTINEZ WATER PLANT, CALIFORNIA

Period of Record General Climate Summary - Temperature

Station:(045378) MARTINEZ WATER PLANT															
From Year=1970 To Year=2012															
	Monthly Averages			Daily Extremes				Monthly Extremes				Max. Temp.		Min. Temp.	
	Max.	Min.	Mean	High	Date	Low	Date	Highest Mean	Year	Lowest Mean	Year	>= 90 F	<= 32 F	<= 32 F	<= 0 F
	F	F	F	F	dd/yyyy or yyyymmdd	F	dd/yyyy or yyyymmdd	F	-	F	-	# Days	# Days	# Days	# Days
January	55.2	38.6	46.9	74	13/2009	20	13/2007	51.4	1995	42.2	1985	0.0	0.0	4.6	0.0
February	60.9	41.4	51.2	80	22/1985	25	26/2011	55.0	1986	46.7	2011	0.0	0.0	1.6	0.0
March	66.0	44.1	55.1	88	26/1988	29	02/1971	60.4	2004	50.5	1991	0.0	0.0	0.2	0.0
April	71.7	45.7	58.7	98	30/1996	29	04/1999	63.3	1987	53.6	1975	0.6	0.0	0.1	0.0
May	78.9	49.5	64.2	104	28/1984	34	12/1976	70.7	1997	58.9	1998	3.9	0.0	0.0	0.0
June	85.3	53.2	69.3	110	19/1981	31	30/1976	77.1	1981	64.8	2009	9.1	0.0	0.0	0.0
July	89.0	54.5	71.7	115	14/1972	41	07/1979	75.0	1988	67.6	2009	14.4	0.0	0.0	0.0
August	88.1	54.3	71.2	107	11/1971	42	23/1970	75.0	1984	67.0	2010	12.5	0.0	0.0	0.0
September	84.9	53.3	69.1	108	14/1971	40	23/2005	74.9	1984	63.5	2005	8.5	0.0	0.0	0.0
October	76.4	48.9	62.6	103	03/1980	34	30/1971	67.0	1991	59.8	2004	1.7	0.0	0.0	0.0
November	64.0	43.2	53.6	82	02/1997	25	13/1985	59.0	1995	48.8	1994	0.0	0.0	0.8	0.0
December	55.6	38.5	47.1	74	20/1999	19	22/1990	52.6	1995	41.8	1990	0.0	0.0	5.3	0.0
Annual	73.0	47.1	60.1	115	19720714	19	19901222	62.6	1997	57.0	2011	50.7	0.0	12.6	0.0
Winter	57.2	39.5	48.4	80	19850222	19	19901222	51.6	1996	45.2	2009	0.0	0.0	11.5	0.0
Spring	72.2	46.4	59.3	104	19840528	29	19710302	63.6	1997	55.7	2010	4.5	0.0	0.3	0.0
Summer	87.5	54.0	70.7	115	19720714	31	19760630	74.0	1981	67.2	2009	36.0	0.0	0.0	0.0
Fall	75.1	48.5	61.8	108	19710914	25	19851113	64.7	1995	58.2	1985	10.2	0.0	0.8	0.0

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

Western Regional Climate Center, wrcc@dri.edu

PORT CHICAGO NAVAL DEP, CALIFORNIA

Period of Record General Climate Summary - Precipitation

Station:(047070) PORT CHICAGO NAVAL DEP														
From Year=1946 To Year=1975														
	Precipitation											Total Snowfall		
	Mean	High	Year	Low	Year	1 Day Max.		>= 0.01 in.	>= 0.10 in.	>= 0.50 in.	>= 1.00 in.	Mean	High	Year
	in.	in.	-	in.	-	in.	dd/yyyy or yyyymmdd	# Days	# Days	# Days	# Days	in.	in.	-
January	3.50	8.26	1973	0.74	1962	2.15	21/1964	10	7	3	1	0.0	0.0	1947
February	2.39	6.75	1969	0.00	1953	2.40	01/1963	8	5	2	0	0.0	0.0	1947
March	1.99	5.40	1975	0.08	1972	1.21	28/1963	8	5	1	0	0.0	0.0	1947
April	1.24	5.31	1958	0.00	1949	1.82	03/1958	5	4	1	0	0.0	0.0	1947
May	0.35	2.63	1957	0.00	1959	0.84	24/1973	2	1	0	0	0.0	0.0	1946
June	0.13	0.93	1967	0.00	1946	0.67	09/1964	1	0	0	0	0.0	0.0	1946
July	0.03	0.32	1974	0.00	1946	0.32	08/1974	0	0	0	0	0.0	0.0	1946
August	0.02	0.17	1965	0.00	1946	0.17	12/1965	0	0	0	0	0.0	0.0	1946
September	0.11	1.07	1959	0.00	1946	0.55	19/1959	1	0	0	0	0.0	0.0	1946
October	0.94	8.05	1962	0.00	1949	3.21	14/1962	3	2	1	0	0.0	0.0	1946
November	1.99	5.64	1970	0.00	1959	1.82	29/1970	7	4	2	0	0.0	0.0	1946
December	2.72	9.69	1955	0.23	1956	2.06	20/1969	9	6	2	1	0.0	0.0	1946
Annual	15.41	27.44	1973	8.47	1953	3.21	19621014	56	35	11	2	0.0	0.0	1947
Winter	8.61	17.04	1956	3.72	1961	2.40	19630201	28	18	6	2	0.0	0.0	1947
Spring	3.57	11.03	1958	0.64	1959	1.82	19580403	16	10	2	0	0.0	0.0	1947
Summer	0.18	0.93	1967	0.00	1946	0.67	19640609	1	1	0	0	0.0	0.0	1946
Fall	3.04	8.68	1972	0.24	1958	3.21	19621014	11	6	2	0	0.0	0.0	1946

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

PORT CHICAGO NAVAL DEP, CALIFORNIA

Period of Record General Climate Summary - Temperature

Station:(047070) PORT CHICAGO NAVAL DEP															
From Year=1946 To Year=1975															
	Monthly Averages			Daily Extremes				Monthly Extremes				Max. Temp.		Min. Temp.	
	Max.	Min.	Mean	High	Date	Low	Date	Highest Mean	Year	Lowest Mean	Year	>= 90 F	<= 32 F	<= 32 F	<= 0 F
	F	F	F	F	dd/yyyy or yyyymmdd	F	dd/yyyy or yyyymmdd	F	-	F	-	# Days	# Days	# Days	# Days
January	54.7	34.4	44.5	77	19/1950	17	05/1950	50.3	1953	38.2	1949	0.0	0.0	13.5	0.0
February	60.3	37.5	48.9	77	09/1951	21	02/1950	54.4	1963	43.6	1949	0.0	0.0	7.3	0.0
March	64.4	38.8	51.6	84	26/1952	25	03/1951	57.4	1972	48.2	1958	0.0	0.0	4.5	0.0
April	69.9	42.0	56.0	91	23/1949	30	09/1953	60.7	1966	49.5	1967	0.1	0.0	0.9	0.0
May	75.8	46.5	61.1	102	30/1950	32	08/1950	65.3	1973	56.5	1953	2.3	0.0	0.1	0.0
June	82.5	51.4	66.9	110	15/1961	40	02/1961	71.9	1973	61.2	1952	6.7	0.0	0.0	0.0
July	87.4	53.2	70.3	114	14/1972	43	07/1951	73.1	1961	66.4	1962	10.9	0.0	0.0	0.0
August	86.9	52.9	70.0	107	02/1946	40	27/1956	73.2	1972	66.2	1954	11.6	0.0	0.0	0.0
September	84.5	50.9	67.7	111	03/1950	35	30/1950	71.0	1967	62.5	1962	8.3	0.0	0.0	0.0
October	76.1	45.5	60.8	101	02/1952	28	28/1946	64.0	1964	57.7	1962	1.7	0.0	0.4	0.0
November	64.4	39.5	52.0	85	09/1955	23	28/1952	55.9	1950	48.8	1952	0.0	0.0	4.6	0.0
December	55.3	35.7	45.5	77	02/1949	16	11/1972	50.2	1950	41.0	1963	0.0	0.0	11.1	0.0
Annual	71.8	44.0	57.9	114	19720714	16	19721211	59.7	1973	56.4	1962	41.6	0.0	42.4	0.0
Winter	56.8	35.9	46.3	77	19491202	16	19721211	50.6	1970	41.2	1949	0.0	0.0	31.9	0.0
Spring	70.0	42.4	56.2	102	19500530	25	19510303	59.6	1972	53.8	1953	2.5	0.0	5.5	0.0
Summer	85.6	52.5	69.1	114	19720714	40	19560827	71.9	1972	66.2	1952	29.3	0.0	0.0	0.0
Fall	75.0	45.3	60.1	111	19500903	23	19521128	63.2	1967	57.4	1960	9.9	0.0	5.0	0.0

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:
Months with 5 or more missing days are not considered
Years with 1 or more missing months are not considered
Seasons are climatological not calendar seasons
Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

Western Regional Climate Center, wrcc@dri.edu

PRELIMINARY SITE INVESTIGATION REPORT

SR-4/SR-242 TOS
CONTRA COSTA COUNTY, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE, MS8C
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GEOCON PROJECT NO. E8560-02-54
CALTRANS EA 04-152721
CALTRANS PROJECT # 04-1200-0628-1

SEPTEMBER 2013

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REPORT LIMITATIONS

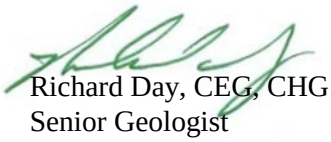
This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 4. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

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.

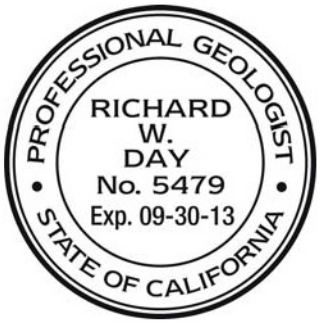
The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute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

GEOCON CONSULTANTS, INC.

Luann Beadle
Senior Staff Scientist



Richard Day, CEG, CHG
Senior Geologist



CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING

Reviewed By:	Recommended By:	Approved By:
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PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the onramp widening and Traffic Operating System (TOS) installation along State Route 4 (SR-4) and SR-242 in Contra Costa County, California was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A3578 and Task Order No. 54 (TO-54), EA 04-152721.

1.1 Project Description and Proposed Improvements

The project includes widening ramps, installing and implementing TOS along various locations along SR-4 from Post Mile (PM) 8.0 to PM 25.0 and along R-242 from PM 0.0 to PM 3.4. One changeable message sign, 2 extinguishable message signs, 14 closed circuit television cameras, and 45 traffic monitoring stations will be installed as part of project activities. Additionally, a total of 11 ramps will be widened. Work will take place within Caltrans right-of-way. The project location is depicted on the attached Key Map, Figure A.

1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of California Assessment Manual 17 (CAM 17) metals, particularly aerially-deposited lead (ADL), 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 DTSC Variance

The DTSC issued a statewide Variance effective July 1, 2009, regarding the management of ADL-impacted soils within Caltrans right-of-way. Under the Variance, soil that is classified as a non-RCRA hazardous waste, based primarily on ADL content, may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste (Caltrans Type Z-3).

ADL soil reused under the Variance must always be at least five feet above the highest groundwater elevation and, depending on lead concentrations, must be covered with at least one foot of non-hazardous soil or a pavement structure. The ADL soil may not be placed in areas where it might contact groundwater or surface water (such as streams and rivers), and must be buried in locations that are protected from erosion that may result from storm water run-on and run-off.

Review of the statewide Variance indicates the following conditions regarding the reuse and management of ADL-impacted soil as fill material for construction and maintenance operations. If ADL soil meets the Variance criteria but is not intended to be reused within Caltrans right-of-way, then the excavated soil must be disposed of as a California hazardous waste (Caltrans Type Z-2). A copy of the Variance is presented as Appendix A.

Caltrans Type Y-1: ADL soil exhibiting a total lead concentration less than or equal to 1,411 milligrams per kilogram (mg/kg), a DI-WET (WET using deionized water as extractant) lead concentration less than or equal to 1.5 milligrams per liter (mg/l), and a pH value greater than or equal

to 5.5 may be reused within the same Caltrans corridor and must be covered with at least one foot of non-hazardous soil.

Caltrans Type Y-2: ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration less than or equal to 1.5 mg/l, and a pH value greater than 5 and less than 5.5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration greater than 1.5 mg/l and less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration greater than 1,411 mg/kg and less than or equal to 3,397 mg/kg, a DI-WET lead concentration less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

Caltrans Type Z-2: ADL soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to 5 is not eligible for reuse under the Variance and must be disposed of as a California hazardous waste.

Caltrans Type Z-3: ADL soil exhibiting a TCLP lead concentration greater than or equal to 5 mg/l is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste.

2.3 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (updated May 2013), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. The ESLs are conservative values for more than 100 commonly detected contaminants which may be used to compare with environmental data collected at a site. "The ESLs are intended to help expedite the identification and evaluation of potential environmental concerns at sites where contamination has been identified. Data collected at a site can be directly compared to the ESLs, and the need for additional actions quickly determined" (RWQCB May 2013). ESLs are strictly risk assessment tools and "not intended to serve as a rule to determine if a waste is hazardous under the state or federal regulations (RWQCB May 2013)."

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 (≤3m bgs), Groundwater is a Current or Potential Source of Drinking Water
- Table B. Shallow Soil (≤3m bgs), Groundwater is not a Current or Potential Source of Drinking Water
- Table F. Surface Water Bodies
- 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.

3.0 SCOPE OF SERVICES

The scope of services performed under TO-54, EA 04-152721 included the following:

3.1 Pre-field Activities

- Prepared the *Preliminary Site Investigation Workplan* and *Health and Safety Plan*, dated August 2013.
- Retained the services of Advanced Technology Laboratories, Las Vegas (ATL-LV), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil and groundwater samples.
- Retained the services of EMSL, Inc., a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of soil samples.
- Retained the services of Lane Safety, a Caltrans-approved traffic control company, to provide traffic control services.
- Notified Underground Service Alert (USA) at least 48 hours prior to field work.

3.2 Field Activities

The field investigation was performed on August 8, 12, and 13, 2013, by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced 37 soil borings at the project location using hand-auger and direct-push drilling techniques. The borings were advanced to a maximum depth of 20 feet.

The following soil samples were collected:

- 73 for CAM 17 metals analysis.
- 38 for total lead analysis.
- 49 for TPHd/mo analyses.
- 77 for TPHg analysis.
- 95 for NOA analysis.
- 40 for pH analysis.
- 2 equipment rinse blanks for total lead analysis.

All samples were transported to California-certified environmental laboratories for analysis under standard chain-of-custody (COC) documentation.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples collected varied from the originally planned schedule described in the Task Order. The on-site Caltrans Task Order Manager determined that boring CCTV8 could not be sampled safely. The Task Order Manager was not provided with the location for boring CCTV11. Soil samples were collected from the remaining 37 boring locations identified by the Caltrans TO Manager using hand-auger and direct-push sampling techniques. Boring coordinates are presented on Table 1 and locations are shown on the Site Plan, Figures 1 through 4A, and 5 through 16.

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

Soil samples collected using a direct-push sample rig were obtained by hydraulically advancing a 2-inch-diameter, 4-foot-long stainless steel core-barrel sampler lined with an acetate sample tube into undisturbed soil. Soil samples were collected for laboratory analysis by cutting an approximately 6-inch-long section of the acetate tube from the target sample depth, capping the ends with Teflon tape and plastic end caps, and then placing the sample tube in a chest cooled with ice for storage and delivery to the analytical laboratory.

Sample containers were labeled and transported to a Caltrans-approved, certified environmental laboratory using standard COC documentation. Hand auger soil borings were back-filled to surface with soil cuttings; direct-push borings were backfilled to surface with neat cement.

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. Two equipment rinse blanks were 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 B.

The soil samples were analyzed as follows:

- 73 samples for CAM 17 metals using EPA Test Methods 6010 ICAP and 7471.
- 38 samples were analyzed for total lead using EPA Test Method 6010 ICAP.
- 1 sample with a total chromium concentration equal to or exceeding 50 mg/kg (i.e. equal to or exceeding ten times the STLC of 5.0 mg/l) were further analyzed for WET chromium.
- 11 samples with total lead concentrations equal to or exceeding 50 mg/kg (i.e. equal to or exceeding ten times the STLC of 5.0 mg/l) were further analyzed for WET lead.
- 3 samples with WET lead concentrations exceeding 5.0 mg/l were further analyzed for DI-WET lead.
- 4 samples with total lead in excess of the TTLC of 1,000 mg/kg or WET lead concentrations exceeding 5.0 mg/l were further analyzed for TCLP lead.
- 3 samples with total mercury concentrations equal to or exceeding 2.0 mg/kg (i.e. equal to or exceeding ten times the STLC of 0.2 mg/l) were further analyzed for WET mercury.
- 49 samples for TPHd/mo using EPA Test Method 8015B.
- 77 samples for TPHg using EPA Test Method 8015B.
- 95 samples for NOA using CARB 435.
- 40 samples for pH using EPA Test Method 9045C.

The 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 indicated that soil in the areas generally consisted of loose, soft, dry, light brown silty sand to a depth of approximately 2 feet. Medium dense, moist, light brown silty fine sand with trace clay and regolith gravels was present to a depth of up to 15 feet. Moderately dense, moist black clay with fine sand was present to 20 feet, and stiff, moist black clay 20 feet. Groundwater was not encountered.

5.2 Laboratory Analytical Results

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

Soil Sample Results:

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, silver, and thallium.
- Total chromium was reported at concentrations ranging from 6.9 to 56 mg/kg.
- WET chromium was reported at a concentration of 0.076 mg/l.
- Total lead was reported at concentrations ranging from <1.0 to 1,400 mg/kg.
- WET lead was reported at concentrations ranging from 1.1 to 45 mg/l.
- DI-WET lead was not detected in the samples at or above the reporting limit of 0.25 mg/l.
- TCLP lead was reported at concentrations ranging from 0.27 to 0.97 mg/l.
- Total mercury was reported at concentrations ranging from <0.099 mg/kg to 9.4 mg/kg.
- WET mercury was reported at concentrations ranging from <0.0002 to 0.001 mg/l.
- Remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.
- NOA was not detected in the samples at or above the target sensitivity of 0.25% 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 Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) were outside recovery criteria for several samples, possibly due to matrix interference, however the associated laboratory control sample recoveries were acceptable. The Method Blank associated with several samples reported barium about the reporting limit, but was

present at concentrations of less than one tenth of the amount measured in samples. Concentations of barium reported in affected samples were below ten times the STLC of 100 mg/l and below the ESLs. The RPD for one sample was outside of criteria for molybdenum, however the reported sample concentration was below ten times the STLC of 350 mg/l and the ESLs. The relative percent differences (RPD) for MS/MSD were outside of recovery limits for several samples, possibly due to sample non-homogeneity, however the results were validated by the associated Laboratory Control Samples. The surrogate recovery was below the laboratory acceptance limit for one sample, possibly due to matrix effect. 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.

5.4 Evaluation for Lead Detected in Soil Samples

The lead data for the site were divided into 24 sample populations for evaluation. A summary of datasets is included in Table 1. The following tables summarize the total lead data for the site. For those samples in which total lead was not detected, a value equal to one-half of the detection limit was used in the UCL calculation.

Dataset 1 (borings R1 and R2)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	940	480	1,400
1.0 to 1.5	9.35	7.7	11

Dataset 2 (borings R3 and R4)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	12.2	9.3	15
1.0 to 1.5	8.45	6.9	10

Dataset 3 (borings R5 and R6)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	22.5	19	26

1.0 to 1.5	11.1	3.1	19

Dataset 4 (borings R7 and R8)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	204	38	370
1.0 to 1.5	35.9	7.8	64

Dataset 5 (borings R9 and R10)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	366	82	650
1.0 to 1.5	25	24	26

Dataset 6 (borings R11 and R12)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	14.5	12	17
1.0 to 1.5	4.95	4.1	5.8

Dataset 7 (borings R13 and R14)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	87	78	96
1.0 to 1.5	30.3	4.6	56

Dataset 8 (borings R15 and R16)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	36	14	58
1.0 to 1.5	3.55	2.4	4.7

Dataset 9 (borings R17 and R18)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	15	10	20
1.0 to 1.5	38.3	4.6	72

Dataset 10 (borings R19 and R20)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	89	28	150
1.0 to 1.5	6.95	5.5	8.4

Dataset 11 (borings R21 and R22)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	32	21	43
1.0 to 1.5	11.3	5.6	17

Dataset 12 (boring CCTV-1)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	33	33
1.0 to 1.5	NC	2.5	2.5

NC – Not calculated due to insufficient data set

Dataset 13 (boring CCTV-2)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	2.5	2.5
1.0 to 1.5	NC	2.5	2.5

NC – Not calculated due to insufficient data set

Dataset 14 (boring CCTV-3)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	2.5	2.5
1.0 to 1.5	NC	2.5	2.5
2.5 to 3	NC	2.3	2.3
5.5 to 6	NC	2.5	2.5
8.5 to 9	NC	5.5	5.5

NC – Not calculated due to insufficient data set

Dataset 15 (boring CCTV-4)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	2.5	2.5
1.0 to 1.5	NC	2.5	2.5
2.5 to 3	NC	1.9	1.9
5.5 to 6	NC	2.5	2.5
8.5 to 9	NC	4.0	4.0

NC – Not calculated due to insufficient data set

Dataset 16 (boring CCTV-5)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	38	38
1.0 to 1.5	NC	27	27
2.5 to 3	NC	18	18
5.5 to 6	NC	11	11
8.5 to 9	NC	4.5	4.5

NC – Not calculated due to insufficient data set

Dataset 17 (borings CCTV-6 and CMS-1)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	4.05	2.5	5.6
1.0 to 1.5	3.25	2.5	4.0
2.5 to 3	3.35	2.5	4.2
5.5 to 6	3.15	2.5	3.8

Dataset 18 (boring CCTV-7)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	18	18
1.0 to 1.5	NC	2.5	2.5
2.5 to 3	NC	3.1	3.1
5.5 to 6	NC	5.0	5.0
8.5 to 9	NC	9.6	9.6

NC – Not calculated due to insufficient data set

Dataset 19 (boring CCTV-9)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	5.5	5.5
1.0 to 1.5	NC	5.6	5.6
2.5 to 3	NC	4.8	4.8
5.5 to 6	NC	5.1	5.1
8.5 to 9	NC	4.7	4.7

NC – Not calculated due to insufficient data set

Dataset 20 (boring CCTV-10)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	2.5	2.5
1.0 to 1.5	NC	7.3	7.3
2.5 to 3	NC	17	17

NC – Not calculated due to insufficient data set

Dataset 21 (boring CCTV-12)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	5.8	5.8
1.0 to 1.5	NC	2.5	2.5
2.5 to 3	NC	5.2	5.2
5.5 to 6	NC	5.5	5.5
8.5 to 9	NC	3.0	3.0

NC – Not calculated due to insufficient data set

Dataset 22 (boring CCTV-13)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	7.4	7.4
1.0 to 1.5	NC	5.8	5.8
2.5 to 3	NC	4.8	4.8
5.5 to 6	NC	5.1	5.1
8.5 to 9	NC	4.1	4.1

NC – Not calculated due to insufficient data set

Dataset 23 (boring CCTV-14)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	NC	19	19
1.0 to 1.5	NC	7.3	7.3
2.5 to 3	NC	21	21
5.5 to 6	NC	2.5	2.5
8.5 to 9	NC	5.9	5.9

NC – Not calculated due to insufficient data set

Dataset 24 (borings EMS1 and EMS2)

SAMPLE INTERVAL (feet)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	1.5	0.5	2.5
1.0 to 1.5	3.45	2.9	4.0
2.5 to 3	2.5	2.5	2.5
5.5 to 6	3.5	3.2	3.8
8.5 to 9	4.0	3.2	4.8
15.5 to 16	2.5	2.5	2.5

Correlation of Total and WET Lead

Total and corresponding WET lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET lead concentrations based on the maximum total lead concentrations presented in the tables above.

To estimate the degree of interrelation between total and corresponding WET lead values (*x* and *y*, respectively), the *correlation coefficient [r]* is used. The correlation coefficient is a ratio that ranges from +1 to –1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of –1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was calculated for 11 (*x, y*) data points (i.e., soil samples analyzed for both total lead [*x*] and WET lead [*y*]) from the site. The regression analysis yields an acceptable *coefficient of determination* (r^2) equaled 0.9526, which yields a corresponding *correlation coefficient* (*r*) of 0.9760.

For the *correlation coefficient* that indicates a linear relationship between total and WET lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0666(x)$, where *x* represents total lead concentrations and *y* represents predicted WET lead concentrations.

This equation was used to estimate the expected WET lead concentrations for the maximum total lead concentrations for the data set (see Section 5.4.1). Regression analysis results and a scatter plot depicting the (*x*,*y*) data points along with the regression line are included in Appendix C. The predicted WET lead concentrations are summarized in Tables 6a through 6c.

6.0 CONCLUSIONS

6.1 Lead in Soil

6.1.1 Dataset 1 (Borings R1 and R2)

The following table summarizes the predicted waste classification for excavated soil based on the maximum total lead values and predicted WET lead concentrations for data collected from this portion of the Site. Weighted averages are calculated by using the maximum total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized below and in Table 6a.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1.0 ft	1,400	**93.2**	**Hazardous**
Underlying soil (1.0 to 1.5 ft)	*11.0*	*0.7*	*Non-Hazardous*
0 to 1.5 ft	937	**62.4**	**Hazardous**

Based on the data presented in the above table, soil excavated to a depth of 1.0 foot would be classified as a RCRA hazardous waste since the maximum total lead concentration is greater than the TTLC of 1,000 mg/kg. Underlying soil would be classified as non-hazardous based on lead content.

6.1.2 Datasets 2, 3, 6, and 11 through 24

The maximum total lead concentration of 43 mg/kg is less than the TTLC of 1,000 mg/kg and less than 50 mg/kg (i.e., less than ten times the STLC of 5 mg/l). Accordingly, excavated soil would be classified as non-hazardous based on lead content.

6.1.3 Dataset 4 (Borings R7 and R8)

The following table summarizes the predicted waste classification for excavated soil based on the maximum total lead values and predicted WET lead concentrations for data collected from this portion of the Site. Weighted averages are calculated by using the maximum total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized below and in Table 6b.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1.0 ft	370	**24.6**	**Hazardous**
Underlying soil (1.0 to 1.5 ft)	*64*	*4.3*	*Non-Hazardous*
0 to 1.5 ft	268	**17.8**	**Hazardous**

Based on the data presented in the above table, soil excavated to a depth of 1.0 foot would be classified as a California hazardous waste since the UCL-predicted WET lead concentration is greater than the lead STLC of 5.0 mg/l. Based on the reported DI-WET and pH results, soil excavated from 0 to 1.0 foot may be reused onsite (as Caltrans Type Y-1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Underlying soil would be classified as non-hazardous based on lead content.

6.1.4 Dataset 5 (Borings R9 and R10)

The following table summarizes the predicted waste classification for excavated soil based on the maximum total lead values and predicted WET lead concentrations for data collected from this portion of the Site. Weighted averages are calculated by using the maximum total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized below and in Table 6c.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1.0 ft	650	**43.3**	**Hazardous**
Underlying soil (1.0 to 1.5 ft)	*26.0*	*1.7*	*Non-Hazardous*
0 to 1.5 ft	442	**29.4**	**Hazardous**

Based on the data presented in the above table, soil excavated to a depth of 1.0 foot would be classified as a California hazardous waste since the UCL-predicted WET lead concentration is greater than the lead STLC of 5.0 mg/l. Based on the reported DI-WET and pH results, soil excavated from 0 to 1.0 foot may be reused onsite (as Caltrans Type Y-1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Underlying soil would be classified as non-hazardous based on lead content.

6.1.5 Datasets 7 through 10

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg and the maximum WET lead concentration is less than the STLC of 5 mg/l. Accordingly, excavated soil would be classified as non-hazardous based on lead content.

6.2 Remaining CAM 17 Metals in Soil

With the exceptions of chromium and mercury, CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs. WET chromium was reported at a concentration below the STLC of < 5.0 mg/l; therefore soil would be classified as non-hazardous based on chromium concentrations. WET mercury was reported at concentrations below the STLC of 2.0 mg/l; therefore soil would be classified as non-hazardous based on mercury content.

The CAM 17 metals concentrations in site soil were compared to ESLs. Arsenic, lead, and mercury were reported at concentrations greater than one or more ESL values.

Because concentrations of arsenic, lead, and mercury exceeded one or more ESL, non-parametric bootstrap techniques were used to calculate the UCLs. Risk assessment characterization is based on the 95% UCL of the soil for the site; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment.

The upper one-sided 95% upper confidence limit (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 UCLs of the arithmetic mean concentration are used as the mean concentrations 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 UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean.

The bootstrap test result is included in Appendix C. ESLs, UCLs, and published background concentrations for arsenic 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[1]	PUBLISHED BACKGROUND RANGE [1]
Arsenic	37	5.22	0.39	0.96	10	3.5	0.6 to 11.0
Lead	1,400	94.4	80	320	320	23.9	12.4-97.1
Mercury	9.4	0.78	6.7	10	27	0.26	0.05-0.90

Concentrations reported in mg/kg

[1] 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 lead concentration is greater than the residential land use ESL; however, it is less than the commercial land use ESL and the construction exposure ESL and within the published background range.

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

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

Metals results for soil samples are summarized in Table 3.

6.3 Petroleum Hydrocarbons in Soil

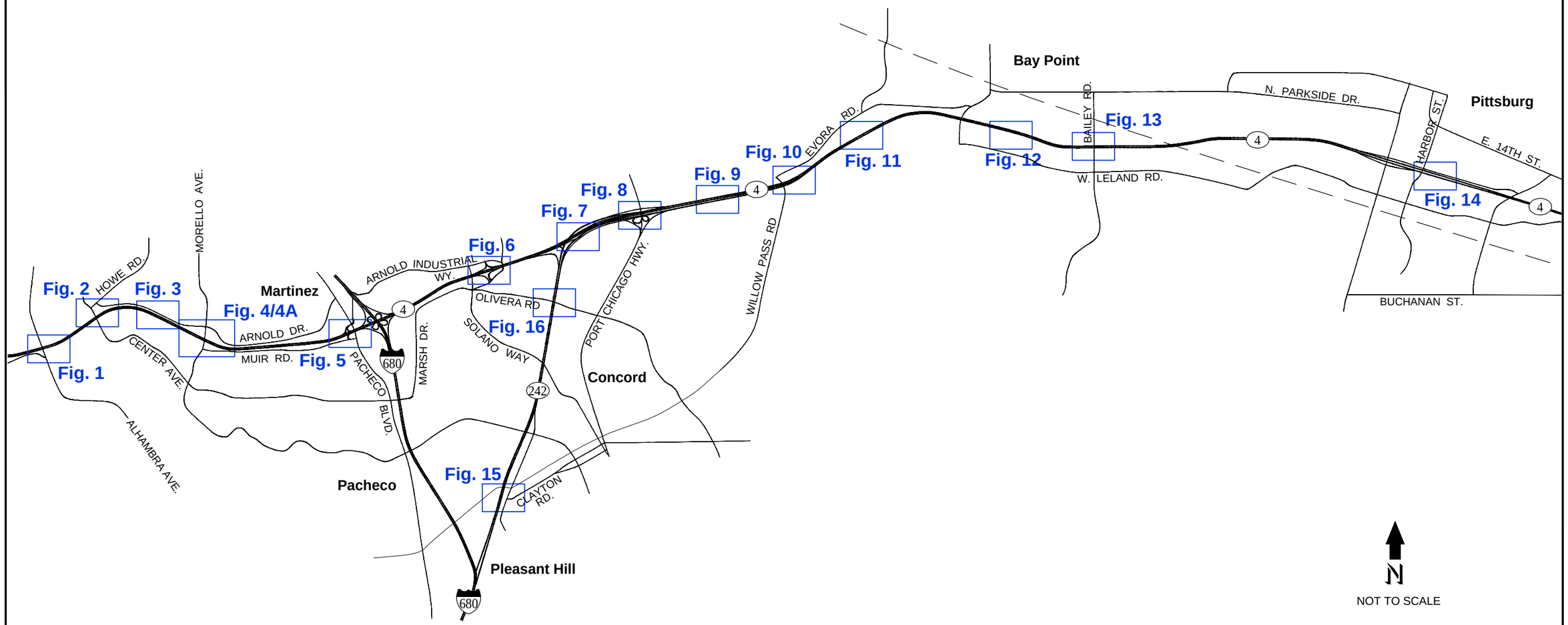
TPHg was not detected above the laboratory reporting limit of 1.0 mg/kg. TPHd/mo were reported in soil samples at concentrations below residential and commercial/industrial land use ESLs, and the construction exposure ESL (SFRWQCB, May 2013, Tables A and K-3). A summary of petroleum hydrocarbon concentrations in site soil is presented in Table 4.

6.4 Naturally-Occurring Asbestos in Soil

NOA was not detected at the 0.25% target sensitivity level in the 95 samples analyzed. A summary of NOA results is included in Table 5.

6.5 Worker Protection

The contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to metals in soil. The plan 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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KEY MAP

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Figure 3

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Figure 5

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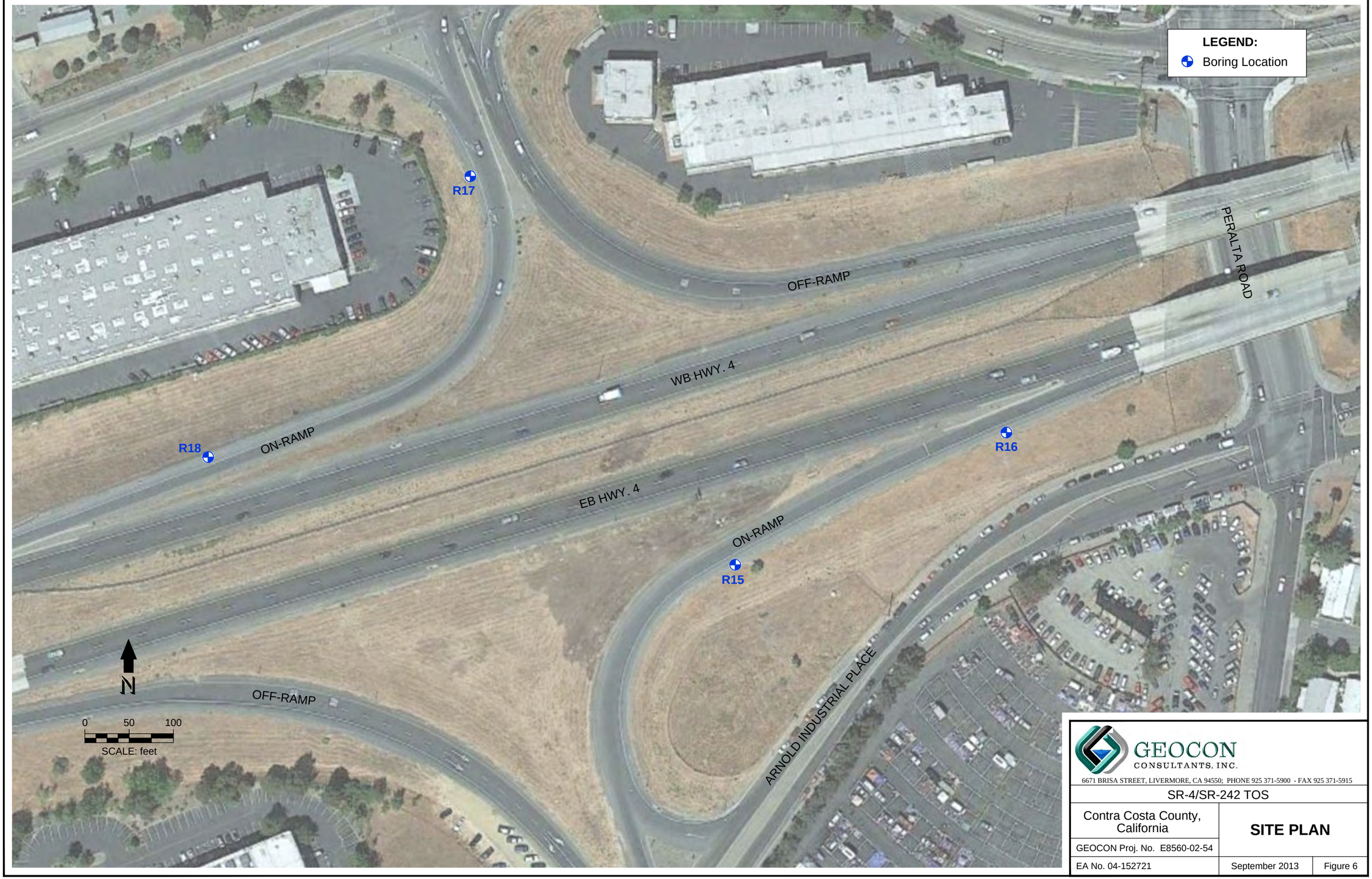

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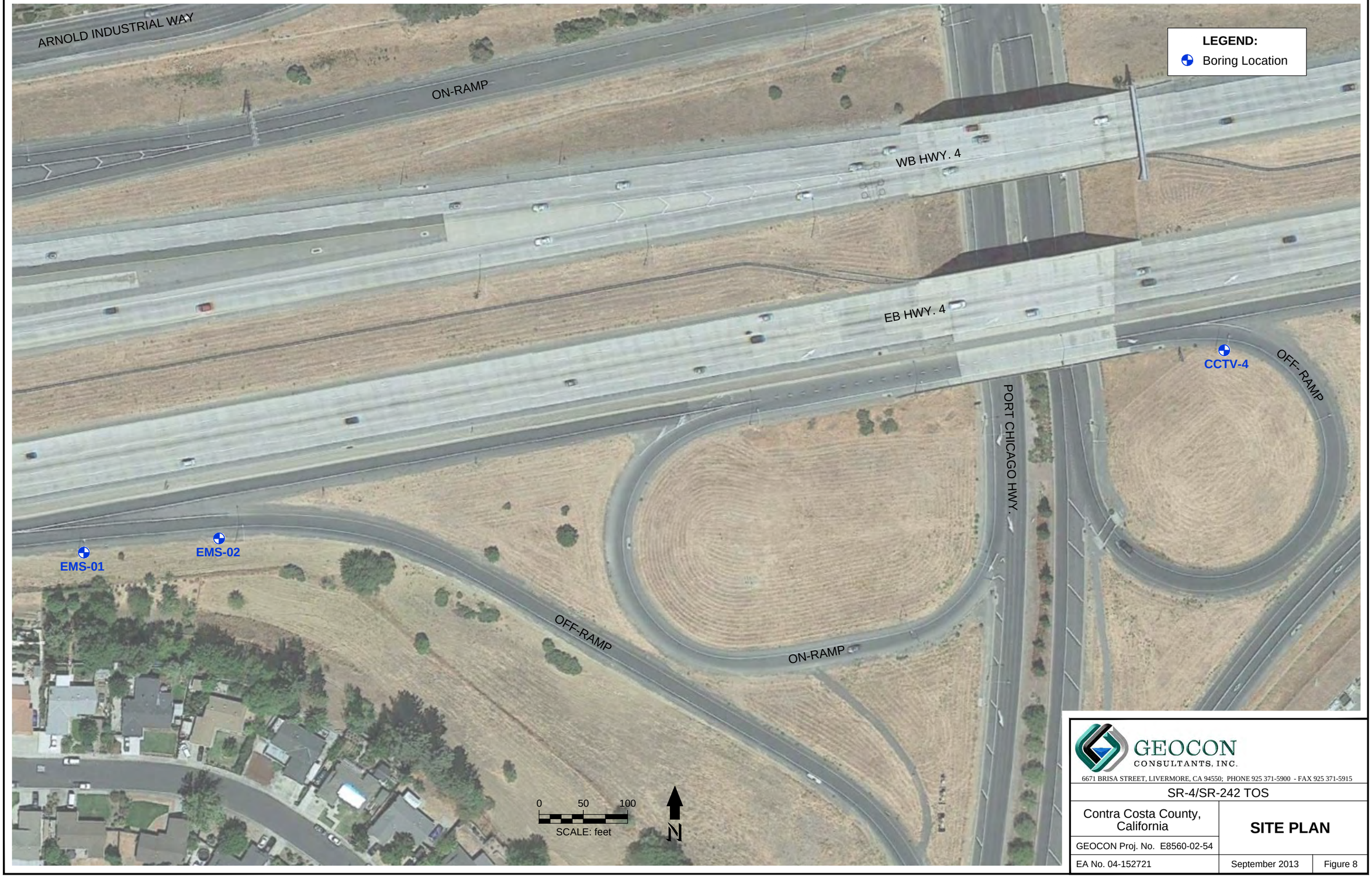

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TABLE 1
Boring Coordinates
SR-4/SR-242 TOS
Contra Costa County, California

Boring	Figure	Latitude	Longitude	Dataset
R1	1	37.990535397	-122.128577713	1
R2	1	37.990747952	-122.128110612	1
R3	2	37.995080032	-122.119072507	2
R4	2	37.995613229	-122.118170056	2
R5	2	37.995032455	-122.121211669	3
R6	2	37.994143389	-122.122349043	3
R7	4A	37.990888099	-122.099188552	4
R8	4A	37.990677952	-122.098211780	4
R9	4	37.992873940	-122.102159367	5
R10	4	37.993198448	-122.103355108	5
R11	5	37.992043237	-122.074489037	6
R12	5	37.992614162	-122.074829107	6
R13	5	37.993647940	-122.075458410	7
R14	5	37.992852176	-122.075862744	7
R15	6	38.001386311	-122.049619044	8
R16	6	38.001809692	-122.048565661	8
R17	6	38.002576199	-122.050682209	9
R18	6	38.001692462	-122.051691041	9
R19	7	38.008650594	-122.032224400	10
R20	7	38.007303299	-122.034880637	10
R21	10	38.013930603	-121.998945280	11
R22	10	38.013304692	-122.001445120	11
CCTV1	2	37.994936691	-122.120788144	12
CCTV2	3	37.995261111	-122.108530556	13
CCTV3	4 and 4A	37.991384658	-122.100465634	14
CCTV4	8	38.009302778	-122.021950000	15
CCTV5	9	38.012266667	-122.008197222	16
CCTV6	10	38.014225198	-121.996950024	17
CCTV7	11	38.021158333	-121.982927778	18
CCTV8			Not Sampled	
CCTV9	12	38.021146488	-121.957905923	19
CCTV10	13	38.019255556	-121.940747222	20
CCTV11			Not Sampled	
CCTV12	14	38.014981990	-121.882682458	21
CCTV13	15	37.969413889	-122.048269444	22
CCTV14	16	37.997370540	-122.038841831	23
CMS1	10	38.014185078	-121.997029323	17
EMS1	8	38.008624738	-122.026402084	24
EMS2	8	38.008675464	-122.025873461	24

TABLE 2
Summary of Lead and pH Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Dataset	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
R1-0	0 to 0.5	1	480	34	<0.25	0.27	7.6
R1-1	1 to 1.5	1	11	---	---	---	8.0
R2-0	0 to 0.5	1	1,400	---	---	0.97	---
R2-1	1 to 1.5	1	7.7	---	---	---	8.2
R3-0	0 to 0.5	2	9.3	---	---	---	---
R3-1	1 to 1.5	2	6.9	---	---	---	7.3
R4-0	0 to 0.5	2	15	---	---	---	---
R4-1	1 to 1.5	2	10	---	---	---	7.8
R5-0	0 to 0.5	3	19	---	---	---	---
R5-1	1 to 1.5	3	3.1	---	---	---	5.3
R6-0	0 to 0.5	3	26	---	---	---	---
R6-1	1 to 1.5	3	19	---	---	---	5.8
R7-0	0 to 0.5	4	38	---	---	---	---
R7-1	1 to 1.5	4	7.8	---	---	---	8.2
R8-0	0 to 0.5	4	370	25	<0.25	0.42	7.0
R8-1	1 to 1.5	4	64	2.5	---	---	7.6
R9-0	0 to 0.5	5	650	45	<0.25	0.61	---
R9-1	1 to 1.5	5	26	---	---	---	7.9
R10-0	0 to 0.5	5	82	1.4	---	---	---
R10-1	1 to 1.5	5	24	---	---	---	7.8
R11-0	0 to 0.5	6	12	---	---	---	---
R11-1	1 to 1.5	6	5.8	---	---	---	8.5
R12-0	0 to 0.5	6	17	---	---	---	---
R12-1	1 to 1.5	6	4.1	---	---	---	5.4
R13-0	0 to 0.5	7	96	4.7	---	---	---
R13-1	1 to 1.5	7	56	2.3	---	---	7.3
R14-0	0 to 0.5	7	78	3.5	---	---	---
R14-1	1 to 1.5	7	4.6	---	---	---	8.6
R15-0	0 to 0.5	8	14	---	---	---	---
R15-1	1 to 1.5	8	2.4	---	---	---	8.4

TABLE 2
Summary of Lead and pH Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Dataset	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
R16-0	0 to 0.5	8	58	3.0	---	---	---
R16-1	1 to 1.5	8	4.7	---	---	---	8.5
R17-0	0 to 0.5	9	10	---	---	---	---
R17-1	1 to 1.5	9	4.6	---	---	---	8.4
R18-0	0 to 0.5	9	20	---	---	---	---
R18-1	1 to 1.5	9	72	4.9	---	---	8.2
R19-0	0 to 0.5	10	150	1.1	---	---	---
R19-1	1 to 1.5	10	5.5	---	---	---	8.4
R20-0	0 to 0.5	10	28	---	---	---	---
R20-1	1 to 1.5	10	8.4	---	---	---	8.3
R21-0	0 to 0.5	11	21	---	---	---	---
R21-1	1 to 1.5	11	5.6	---	---	---	8.2
R22-0	0 to 0.5	11	43	---	---	---	---
R22-1	1 to 1.5	11	17	---	---	---	8.4
CCTV1-0	0 to 0.5	12	33	---	---	---	---
CCTV1-1	1 to 1.5	12	<5.0	---	---	---	---
CCTV2-0	0 to 0.5	13	<5.0	---	---	---	---
CCTV2-1	1 to 1.5	13	<5.0	---	---	---	---
CCTV3-0	0 to 0.5	14	<5.0	---	---	---	---
CCTV3-1	1 to 1.5	14	<5.0	---	---	---	---
CCTV3-2.5	2.5 to 3	14	2.3	---	---	---	7.8
CCTV3-5.5	5.5 to 6	14	<5.0	---	---	---	---
CCTV3-8.5	8.5 to 9	14	5.5	---	---	---	---
CCTV4-0	0 to 0.5	15	<5.0	---	---	---	---
CCTV4-1	1 to 1.5	15	<5.0	---	---	---	---
CCTV4-2.5	2.5 to 3	15	1.9	---	---	---	8.4
CCTV4-5.5	5.5 to 6	15	<5.0	---	---	---	---
CCTV4-8.5	8.5 to 9	15	4.0	---	---	---	---
CCTV5-0	0 to 0.5	16	38	---	---	---	---
CCTV5-1	1 to 1.5	16	27	---	---	---	---
CCTV5-2.5	2.5 to 3	16	18	---	---	---	8.5
CCTV5-5.5	5.5 to 6	16	11	---	---	---	---
CCTV5-8.5	8.5 to 9	16	4.5	---	---	---	---

TABLE 2
Summary of Lead and pH Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Dataset	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
CCTV6-0	0 to 0.5	17	<5.0	---	---	---	---
CCTV6-1	1 to 1.5	17	<5.0	---	---	---	---
CCTV6-2.5	2.5 to 3	17	4.2	---	---	---	8.5
CCTV6-5.5	5.5 to 6	17	<5.0	---	---	---	---
CCTV7-0	0 to 0.5	18	18	---	---	---	---
CCTV7-1	1 to 1.5	18	<5.0	---	---	---	---
CCTV7-2.5	2.5 to 3	18	3.1	---	---	---	8.0
CCTV7-5.5	5.5 to 6	18	5.0	---	---	---	---
CCTV7-8.5	8.5 to 9	18	9.6	---	---	---	---
CCTV9-0	0 to 0.5	19	5.5	---	---	---	---
CCTV9-1	1 to 1.5	19	5.6	---	---	---	---
CCTV9-2.5	2.5 to 3	19	4.8	---	---	---	8.2
CCTV9-5.5	5.5 to 6	19	5.1	---	---	---	---
CCTV9-8.5	8.5 to 9	19	4.7	---	---	---	---
CCTV10-0	0 to 0.5	20	<5.0	---	---	---	---
CCTV10-1	1 to 1.5	20	7.3	---	---	---	---
CCTV10-2.5	2.5 to 3	20	17	---	---	---	8.1
CCTV12-0	0 to 0.5	21	5.8	---	---	---	---
CCTV12-1	1 to 1.5	21	<5.0	---	---	---	---
CCTV12-2.5	2.5 to 3	21	5.2	---	---	---	8.7
CCTV12-5.5	5.5 to 6	21	5.5	---	---	---	---
CCTV12-8.5	8.5 to 9	21	3.0	---	---	---	---
CCTV13-0	0 to 0.5	22	7.4	---	---	---	---
CCTV13-1	1 to 1.5	22	5.8	---	---	---	---
CCTV13-2.5	2.5 to 3	22	4.8	---	---	---	8.4
CCTV13-5.5	5.5 to 6	22	5.1	---	---	---	---
CCTV13-8.5	8.5 to 9	22	4.1	---	---	---	---
CCTV14-0	0 to 0.5	23	19	---	---	---	---
CCTV14-1	1 to 1.5	23	7.3	---	---	---	---
CCTV14-2.5	2.5 to 3	23	21	---	---	---	8.2
CCTV14-5.5	5.5 to 6	23	<5.0	---	---	---	---
CCTV14-8.5	8.5 to 9	23	5.9	---	---	---	---
CMS1-0	0 to 0.5	17	5.6	---	---	---	---
CMS1-1	1 to 1.5	17	4.0	---	---	---	8.6
CMS1-2.5	2.5 to 3	17	<5.0	---	---	---	---
CMS1-5.5	5.5 to 6	17	3.8	---	---	---	8.4

TABLE 2
Summary of Lead and pH Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Dataset	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
EMS1-0	0 to 0.5	24	<1.0	---	---	---	---
EMS1-1	1 to 1.5	24	2.9	---	---	---	---
EMS1-2.5	2.5 to 3	24	<5.0	---	---	---	8.2
EMS1-5.5	5.5 to 6	24	3.2	---	---	---	---
EMS1-11.5	11.5 to 12	24	4.8	---	---	---	---
EMS1-15.5	15.5 to 16	24	<5.0	---	---	---	8.3
EMS2-0	0 to 0.5	24	2.5	---	---	---	---
EMS2-1	1 to 1.5	24	4.0	---	---	---	---
EMS2-2.5	2.5 to 3	24	<5.0	---	---	---	8.0
EMS2-5.5	5.5 to 6	24	3.8	---	---	---	---
EMS2-11.5	11.5 to 12	24	3.2	---	---	---	---
EMS2-15.5	15.5 to 16	24	<5.0	---	---	---	8.1
Equipment Blank			<0.0050 mg/l				
Equipment Blank			<0.0050 mg/l				
Hazardous Waste Criteria							
TTLC (mg/kg)			1,000	---	---	---	---
STLC (mg/l)			---	5.0	---	---	---
TCLP (mg/l)			---	---	---	5.0	---

Notes:

mg/kg = Milligrams per kilogram
mg/l = Milligrams per liter
WET = Waste Extraction Test using citric acid as the extraction fluid
DI-WET = Waste Extraction Test using deionized water as the extraction fluid
TCLP = Toxicity characteristic leaching procedure
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration

TABLE 3
Summary of CAM 17 Metals Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
R1-0	0 to 0.5	<2.0	3.5	93	<1.0	<1.0	25	9.4	33	480	0.19	<1.0	21	<1.0	<1.0	<1.0	42	100
R1-1	1 to 1.5	<2.0	6.3	260	<1.0	<1.0	28	11	34	11	<0.10	<1.0	33	1.2	<1.0	<1.0	35	57
R2-0	0 to 0.5	<2.0	7.1	180	<1.0	<1.0	34	10	67	1,400	0.15	1.2	31	<1.0	<1.0	<1.0	41	220
R2-1	1 to 1.5	<2.0	5.5	280	<1.0	<1.0	26	12	39	7.7	<0.099	<1.0	36	<1.0	<1.0	<1.0	30	54
R3-0	0 to 0.5	<2.0	4.3	95	<1.0	<1.0	19	5.2	12	9.3	<0.10	<1.0	15	<1.0	<1.0	<1.0	23	54
R3-1	1 to 1.5	<2.0	3.5	72	<1.0	<1.0	18	8.7	9.0	6.9	<0.099	<1.0	16	<1.0	<1.0	<1.0	17	33
R4-0	0 to 0.5	<2.0	5.0	95	<1.0	<1.0	13	6.3	12	15	<0.10	<1.0	15	<1.0	<1.0	<1.0	27	35
R4-1	1 to 1.5	<2.0	4.4	99	<1.0	<1.0	13	5.8	12	10	<0.10	<1.0	15	<1.0	<1.0	<1.0	23	29
R5-0	0 to 0.5	<2.0	5.2	27	<1.0	<1.0	9.4	3.4	11	19	0.22	<1.0	8.2	<1.0	<1.0	<1.0	18	81
R5-1	1 to 1.5	<2.0	2.9	13	<1.0	<1.0	6.9	3.6	2.8	3.1	<0.10	<1.0	5.3	<1.0	<1.0	<1.0	13	19
R6-0	0 to 0.5	<2.0	4.2	35	<1.0	<1.0	11	3.2	20	26	1.2	<1.0	8.4	<1.0	<1.0	<1.0	20	61
R6-1	1 to 1.5	<2.0	3.8	26	<1.0	<1.0	11	4.0	9.6	19	<0.099	<1.0	8.5	<1.0	<1.0	<1.0	19	44
R7-0	0 to 0.5	<2.0	<1.0	34	<1.0	<1.0	16	19	49	38	3.8 *<0.0002*	<1.0	19	2.0	<1.0	<1.0	130	65
R7-1	1 to 1.5	<2.0	<1.0	27	<1.0	<1.0	14	20	45	7.8	9.1 *0.0014*	<1.0	15	2.8	<1.0	<1.0	130	48
R8-0	0 to 0.5	<2.0	4.1	82	<1.0	<1.0	24	9.7	47	370	1.4	<1.0	27	1.2	<1.0	<1.0	54	210
R8-1	1 to 1.5	<2.0	5.8	98	<1.0	<1.0	21	8.7	20	64	0.24	<1.0	24	<1.0	<1.0	<1.0	34	62
R9-0	0 to 0.5	<2.0	1.2	49	<1.0	<1.0	24	17	51	650	0.24	<1.0	24	1.2	<1.0	<1.0	110	210
R9-1	1 to 1.5	<2.0	1.2	41	<1.0	<1.0	13	13	15	26	<0.10	<1.0	14	<1.0	<1.0	<1.0	64	37
R10-0	0 to 0.5	<2.0	<1.0	28	<1.0	<1.0	20	22	49	82	0.33	<1.0	19	1.5	<1.0	<1.0	160	100
R10-1	1 to 1.5	<2.0	<1.0	13	<1.0	<1.0	12	17	41	24	0.11	<1.0	19	1.2	<1.0	<1.0	100	73
R11-0	0 to 0.5	<2.0	3.7	41	<1.0	<1.0	15	8.0	23	12	0.16	<1.0	13	<1.0	<1.0	<1.0	36	100
R11-1	1 to 1.5	<2.0	2.0	39	<1.0	<1.0	18	15	81	5.8	0.46	<1.0	15	<1.0	<1.0	<1.0	60	31
R12-0	0 to 0.5	<2.0	4.2	48	<1.0	<1.0	13	7.3	12	17	<0.10	<1.0	12	<1.0	<1.0	<1.0	27	140
R12-1	1 to 1.5	<2.0	2.0	34	<1.0	<1.0	9.8	5.0	5.9	4.1	<0.10	<1.0	6.3	<1.0	<1.0	<1.0	17	13
R13-0	0 to 0.5	<2.0	3.1	87	<1.0	<1.0	20	9.9	47	96	0.40	1.5	22	<1.0	<1.0	<1.0	55	350
R13-1	1 to 1.5	<2.0	5.5	41	<1.0	<1.0	18	10	25	56	0.35	<1.0	19	<1.0	<1.0	<1.0	44	39

TABLE 3
Summary of CAM 17 Metals Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
R14-0	0 to 0.5	<2.0	4.4	62	<1.0	<1.0	22	9.9	27	78	9.4 *0.001*	<1.0	19	<1.0	<1.0	<1.0	52	120
R14-1	1 to 1.5	<2.0	3.9	24	<1.0	<1.0	14	8.6	7.3	4.6	<0.099	<1.0	12	<1.0	<1.0	<1.0	27	32
R15-0	0 to 0.5	<2.0	<1.0	21	<1.0	<1.0	21	22	37	14	0.43	<1.0	18	1.0	<1.0	<1.0	79	30
R15-1	1 to 1.5	<2.0	<1.0	15	<1.0	<1.0	26	23	28	2.4	0.13	<1.0	21	1.1	<1.0	<1.0	85	22
R16-0	0 to 0.5	<2.0	3.3	82	<1.0	<1.0	24	12	38	58	0.012	<1.0	25	<1.0	<1.0	<1.0	54	87
R16-1	1 to 1.5	<2.0	2.6	59	<1.0	<1.0	16	9.2	18	4.7	<0.10	<1.0	15	<1.0	<1.0	<1.0	30	32
R17-0	0 to 0.5	<2.0	3.2	66	<1.0	<1.0	19	10	27	10	<0.10	<1.0	21	<1.0	<1.0	<1.0	41	66
R17-1	1 to 1.5	<2.0	3.3	58	<1.0	<1.0	14	8.2	15	4.6	<0.099	<1.0	14	<1.0	<1.0	<1.0	25	45
R18-0	0 to 0.5	<2.0	<1.0	32	<1.0	<1.0	24	17	53	20	0.28	<1.0	37	<1.0	<1.0	<1.0	82	56
R18-1	1 to 1.5	<2.0	2.6	54	<1.0	<1.0	20	12	36	72	<0.10	<1.0	17	<1.0	<1.0	<1.0	44	65
R19-0	0 to 0.5	<2.0	5	200	<1.0	<1.0	56 *0.076*	12	31	150	0.73	<1.0	43	<1.0	<1.0	<1.0	35	88
R19-1	1 to 1.5	<2.0	4.8	140	<1.0	<1.0	22	9.7	42	5.5	<0.10	<1.0	37	<1.0	<1.0	<1.0	35	30
R20-0	0 to 0.5	<2.0	7.6	140	<1.0	<1.0	33	12	40	28	0.17	<1.0	41	<1.0	<1.0	<1.0	52	84
R20-1	1 to 1.5	<2.0	7.7	180	<1.0	<1.0	22	9.3	27	8.4	<0.10	<1.0	28	<1.0	<1.0	<1.0	25	56
R21-0	0 to 0.5	<2.0	3.4	210	<1.0	<1.0	37	12	27	21	0.25	<1.0	62	<1.0	<1.0	<1.0	35	74
R21-1	1 to 1.5	<2.0	3.0	210	<1.0	<1.0	34	13	24	5.6	0.25	<1.0	67	<1.0	<1.0	<1.0	32	40
R22-0	0 to 0.5	<2.0	3.2	270	<1.0	<1.0	27	8.3	46	43	0.15	<1.0	40	1.2	<1.0	<1.0	34	170
R22-1	1 to 1.5	<2.0	5.4	120	<1.0	<1.0	18	8.8	26	17	<0.099	<1.0	20	1.1	<1.0	<1.0	29	50
CCTV3-2.5	2.5 to 3	<2.0	<1.0	31	<1.0	<1.0	15	4.7	3.4	2.3	<0.10	<1.0	18	<1.0	<1.0	<1.0	11	27
CCTV3-8.5	8.5 to 9	<2.0	3.1	54	<1.0	<1.0	18	3.1	8.7	5.5	<0.10	<1.0	23	<1.0	<1.0	<1.0	11	27
CCTV4-2.5	2.5 to 3	<2.0	2.3	56	<1.0	<1.0	9.4	7.8	10	1.9	<0.10	<1.0	12	<1.0	<1.0	<1.0	14	25
CCTV4-8.5	8.5 to 9	<2.0	3.2	74	<1.0	<1.0	14	7.9	24	4.0	<0.099	<1.0	12	<1.0	<1.0	<1.0	28	40
CCTV5-2.5	2.5 to 3	<2.0	3.0	160	<1.0	<1.0	20	9.2	24	18	<0.10	<1.0	23	<1.0	<1.0	<1.0	30	50
CCTV5-8.5	8.5 to 9	<2.0	2.9	160	<1.0	<1.0	15	6.8	15	4.5	0.29	<1.0	15	<1.0	<1.0	<1.0	27	42
CCTV6-2.5	2.5 to 3	<2.0	2.9	120	<1.0	<1.0	15	9	23	4.2	<0.10	<1.0	15	<1.0	<1.0	<1.0	25	47
CCTV7-2.5	2.5 to 3	<2.0	1.2	55	<1.0	<1.0	11	3.4	8.3	3.1	<0.099	<1.0	11	<1.0	<1.0	<1.0	13	25
CCTV7-8.5	8.5 to 9	<2.0	37	76	<1.0	<1.0	14	6.1	29	9.6	<0.10	2.9	13	<1.0	<1.0	<1.0	59	29

TABLE 3
Summary of CAM 17 Metals Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
CCTV9-2.5	2.5 to 3	<2.0	5.4	150	<1.0	<1.0	26	9.2	23	4.8	<0.10	<1.0	32	<1.0	<1.0	<1.0	38	39
CCTV9-8.5	8.5 to 9	<2.0	4.3	180	<1.0	<1.0	15	7.3	17	4.7	<0.099	<1.0	19	<1.0	<1.0	<1.0	36	30
CCTV10-2.5	2.5 to 3	<2.0	<1.0	63	<1.0	<1.0	27	18	43	17	0.23	<1.0	30	<1.0	<1.0	<1.0	93	25
CCTV12-2.5	2.5 to 3	<2.0	4.4	140	<1.0	<1.0	16	8.3	18	5.2	<0.10	<1.0	18	<1.0	<1.0	<1.0	33	44
CCTV12-8.5	8.5 to 9	<2.0	3.2	130	<1.0	<1.0	8.8	5.4	9.7	3.0	<0.10	<1.0	9.9	<1.0	<1.0	<1.0	23	31
CCTV13-2.5	2.5 to 3	<2.0	4.2	150	<1.0	<1.0	28	8.4	12	4.8	<0.10	<1.0	32	<1.0	<1.0	<1.0	27	36
CCTV13-8.5	8.5 to 9	<2.0	3.3	120	<1.0	<1.0	25	6.4	11	4.1	<0.099	<1.0	28	<1.0	<1.0	<1.0	22	33
CCTV14-2.5	2.5 to 3	<2.0	3.8	190	<1.0	<1.0	35	13	37	21	0.13	<1.0	54	<1.0	<1.0	<1.0	47	48
CCTV14-8.5	8.5 to 9	<2.0	2.1	140	<1.0	<1.0	33	13	36	5.9	<0.10	<1.0	47	<1.0	<1.0	<1.0	40	44
EMS1-0	0 to 0.5	<2.0	<1.0	<1.0	<1.0	<1.0	23	22	77	<1.0	1.5	<1.0	11	1.0	<1.0	<1.0	64	34
EMS1-1	1 to 1.5	<2.0	2.9	58	<1.0	<1.0	15	7	16	2.9	<0.10	<1.0	10	<1.0	<1.0	<1.0	28	36
EMS1-5.5	5.5 to 6	<2.0	2.8	82	<1.0	<1.0	16	6.9	13	3.2	<0.10	<1.0	12	<1.0	<1.0	<1.0	25	37
EMS1-11.5	11.5 to 12	<2.0	5.5	54	<1.0	<1.0	13	7.6	18	4.8	<0.10	<1.0	14	<1.0	<1.0	<1.0	24	43
EMS2-0	0 to 0.5	<2.0	2.9	410	<1.0	<1.0	29	12	32	2.5	0.24	<1.0	50	<1.0	<1.0	<1.0	38	37
EMS2-1	1 to 1.5	<2.0	3.6	61	<1.0	<1.0	14	7.4	24	4.0	<0.099	<1.0	11	<1.0	<1.0	<1.0	26	40
EMS2-5.5	5.5 to 6	<2.0	4.5	56	<1.0	<1.0	13	5.7	13	3.8	<0.10	<1.0	13	<1.0	<1.0	<1.0	24	43
EMS2-11.5	11.5 to 12	<2.0	3.5	74	<1.0	<1.0	12	5.9	12	3.2	<0.10	<1.0	11	<1.0	<1.0	<1.0	23	38
CMS1-0	0 to 0.5	<2.0	2.5	96	<1.0	<1.0	23	11	28	5.6	0.26	<1.0	20	<1.0	<1.0	<1.0	39	39
CMS1-1	1 to 1.5	<2.0	3.5	240	<1.0	<1.0	25	9.6	21	4.0	<0.099	<1.0	44	<1.0	<1.0	<1.0	29	38
CMS1-5.5	5.5 to 6	<2.0	2.7	52	<1.0	<1.0	14	7.2	16	3.8	<0.10	<1.0	12	<1.0	<1.0	<1.0	22	39
ESLs																		
Residential Land Use		20	0.39	750	4.0	12	750	23	230	80	6.7	40	150	10	20	0.78	200	600
Commercial/Industrial Land Use		40	0.96	1,500	8.0	12	750	80	230	320	10	40	150	10	40	10	200	600
Construction Worker Exposure		120	10	61,000	180	110	460,000	49	12,000	320	27	1,500	6,100	1,500	1,500	3.1	1,500	93,000
Hazardous Waste Criteria																		
TTLC (mg/kg)		500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
STLC (mg/l)		15	5.0	100	0.75	1.0	5.0	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
TCLP (mg/l)		---	5.0	100	---	1.0	6.0	---	---	5.0	0.2	---	---	1.0	5.0	---	---	---

Notes:

Results are shown in milligrams per kilogram (mg/kg).
<0.20 = STLC results shown in italics
Values listed for chromium are for Chromium III, as there is no standard for total chromium.
< = Analyte was not detected above the laboratory reporting limit.
ESLs = Environmental Screening Levels, Tables A-1, A-2, and K-3, SFRWQCB, Revised May 2013.
TTLC = total threshold limit concentration
STLC = soluble threshold limit concentration
TCLP = toxicity characteristic leaching procedure

TABLE 4
Summary of Organics Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
R1-0	0 to 0.5	---	---	<1.0
R1-1	1 to 1.5	3.9	8.1	<1.0
R2-0	0 to 0.5	---	---	<1.0
R2-1	1 to 1.5	4.4	11	<1.0
R3-0	0 to 0.5	---	---	<1.0
R3-1	1 to 1.5	3.2	9.2	<1.0
R4-0	0 to 0.5	---	---	<1.0
R4-1	1 to 1.5	3.3	10	<1.0
R5-0	0 to 0.5	---	---	<1.0
R5-1	1 to 1.5	2.3	6.9	<1.0
R6-0	0 to 0.5	---	---	<1.0
R6-1	1 to 1.5	4.4	16	<1.0
R7-0	0 to 0.5	---	---	<1.0
R7-1	1 to 1.5	16	53	<1.0
R8-0	0 to 0.5	---	---	<1.0
R8-1	1 to 1.5	27	86	<1.0
R9-0	0 to 0.5	---	---	<1.0
R9-1	1 to 1.5	2.5	5.8	<1.0
R10-0	0 to 0.5	---	---	<1.0
R10-1	1 to 1.5	14	41	<1.0
R11-0	0 to 0.5	---	---	<1.0
R11-1	1 to 1.5	26	90	<1.0
R12-0	0 to 0.5	---	---	<1.0
R12-1	1 to 1.5	1.0	2.0	<1.0
R13-0	0 to 0.5	---	---	<1.0
R13-1	1 to 1.5	12	40	<1.0
R14-0	0 to 0.5	---	---	<1.0
R14-1	1 to 1.5	11	29	<1.0
R15-0	0 to 0.5	---	---	<1.0
R15-1	1 to 1.5	3.3	13	<1.0

TABLE 4
Summary of Organics Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
R16-0	0 to 0.5	---	---	<1.0
R16-1	1 to 1.5	3.1	9.8	<1.0
R17-0	0 to 0.5	---	---	<1.0
R17-1	1 to 1.5	3.7	10	<1.0
R18-0	0 to 0.5	---	---	<1.0
R18-1	1 to 1.5	11	37	<1.0
R19-0	0 to 0.5	---	---	<1.0
R19-1	1 to 1.5	1.6	3.4	<1.0
R20-0	0 to 0.5	---	---	<1.0
R20-1	1 to 1.5	2.4	8.2	<1.0
R21-0	0 to 0.5	---	---	<1.0
R21-1	1 to 1.5	11	26	<1.0
R22-0	0 to 0.5	---	---	<1.0
R22-1	1 to 1.5	6.7	13	<1.0
CCTV1-1	1 to 1.5	---	---	<1.0
CCTV2-1	1 to 1.5	---	---	<1.0
CCTV3-1	1 to 1.5	---	---	<1.0
CCTV3-2.5	2.5 to 3	---	---	<1.0
CCTV3-5.5	5.5 to 6	<1.0	<1.0	---
CCTV3-8.5	8.5 to 9	<1.0	<1.0	---
CCTV4-1	1 to 1.5	---	---	<1.0
CCTV4-2.5	2.5 to 3	---	---	<1.0
CCTV4-5.5	5.5 to 6	1.1	1.3	---
CCTV4-8.5	8.5 to 9	3.7	4.9	---
CCTV5-1	1 to 1.5	---	---	<1.0
CCTV5-2.5	2.5 to 3	---	---	<1.0
CCTV5-5.5	5.5 to 6	7.0	19	---
CCTV5-8.5	8.5 to 9	2.7	5.4	---
CCTV6-1	1 to 1.5	---	---	<1.0
CCTV6-2.5	2.5 to 3	---	---	<1.0
CCTV6-5.5	5.5 to 6	3.9	6.6	---

TABLE 4
Summary of Organics Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
CCTV7-1	1 to 1.5	---	---	<1.0
CCTV7-2.5	2.5 to 3	---	---	<1.0
CCTV7-5.5	5.5 to 6	<1.0	<1.0	---
CCTV7-8.5	8.5 to 9	<1.0	<1.0	---
CCTV9-1	1 to 1.5	---	---	<1.0
CCTV9-2.5	2.5 to 3	---	---	<1.0
CCTV9-5.5	5.5 to 6	<1.0	<1.0	---
CCTV9-8.5	8.5 to 9	1.2	1.8	---
CCTV10-1	1 to 1.5	---	---	<1.0
CCTV10-2.5	2.5 to 3	---	---	<1.0
CCTV12-1	1 to 1.5	---	---	<1.0
CCTV12-2.5	2.5 to 3	---	---	<1.0
CCTV12-5.5	5.5 to 6	2.2	3.2	---
CCTV12-8.5	8.5 to 9	<1.0	1.3	---
CCTV13-1	1 to 1.5	---	---	<1.0
CCTV13-2.5	2.5 to 3	---	---	<1.0
CCTV13-5.5	5.5 to 6	1.4	1.9	---
CCTV13-8.5	8.5 to 9	1.5	1.9	---
CCTV14-1	1 to 1.5	---	---	<1.0
CCTV14-2.5	2.5 to 3	---	---	<1.0
CCTV14-5.5	5.5 to 6	1.3	2.1	---
CCTV14-8.5	8.5 to 9	1.2	1.8	---
CMS1-0	0 to 0.5	17	60	<1.0
CMS1-1	1 to 1.5	---	---	<1.0
CMS1-2.5	2.5 to 3	---	---	<1.0
CMS1-5.5	5.5 to 6	1.1	1.4	---
EMS1-0	0 to 0.5	1.2	2.1	<1.0
EMS1-1	1 to 1.5	---	---	<1.0
EMS1-2.5	2.5 to 3	1.5	2.3	---
EMS1-5.5	5.5 to 6	<1.0	1.4	<1.0
EMS1-11.5	11.5 to 12	---	---	<1.0
EMS1-15.5	15.5 to 16	9.1	12	---

TABLE 4
Summary of Organics Results
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
EMS2-0	0 to 0.5	2.2	4.0	<1.0
EMS2-1	1 to 1.5	---	---	<1.0
EMS2-2.5	2.5 to 3	<1.0	<1.0	---
EMS2-5.5	5.5 to 6	1.8	1.5	<1.0
EMS2-11.5	11.5 to 12	---	---	<1.0
EMS2-15.5	15.5 to 16	1.6	2.1	---
	ESLs			
	Residential	100	500	100
	Commercial/Industrial	500	2,500	500
	Construction Exposure	900	28,000	1,800

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
--- = Not analyzed or no standard for this compound
< = Not detected above the stated laboratory reporting limit
ESLs ESLs = Environmental Screening Levels, Tables A-1, A-2, and K-3, SFRWQCB, Revised May 2013.

TABLE 5
Summary of NOA Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
R1-0	0 to 0.5	ND
R1-1	1 to 1.5	ND
R2-0	0 to 0.5	ND
R2-1	1 to 1.5	ND
R3-0	0 to 0.5	ND
R3-1	1 to 1.5	ND
R4-0	0 to 0.5	ND
R4-1	1 to 1.5	ND
R5-0	0 to 0.5	ND
R5-1	1 to 1.5	ND
R6-0	0 to 0.5	ND
R6-1	1 to 1.5	ND
R7-0	0 to 0.5	ND
R7-1	1 to 1.5	ND
R8-0	0 to 0.5	ND
R8-1	1 to 1.5	ND
R9-0	0 to 0.5	ND
R9-1	1 to 1.5	ND
R10-0	0 to 0.5	ND
R10-1	1 to 1.5	ND
R11-0	0 to 0.5	ND
R11-1	1 to 1.5	ND
R12-0	0 to 0.5	ND
R12-1	1 to 1.5	ND
R13-0	0 to 0.5	ND
R13-1	1 to 1.5	ND
R14-0	0 to 0.5	ND
R14-1	1 to 1.5	ND

TABLE 5
Summary of NOA Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
R15-0	0 to 0.5	ND
R15-1	1 to 1.5	ND
R16-0	0 to 0.5	ND
R16-1	1 to 1.5	ND
R17-0	0 to 0.5	ND
R17-1	1 to 1.5	ND
R18-0	0 to 0.5	ND
R18-1	1 to 1.5	ND
R19-0	0 to 0.5	ND
R19-1	1 to 1.5	ND
R20-0	0 to 0.5	ND
R20-1	1 to 1.5	ND
R21-0	0 to 0.5	ND
R21-1	1 to 1.5	ND
R22-0	0 to 0.5	ND
R22-1	1 to 1.5	ND
CCTV1-0	0 to 0.5	ND
CCTV1-1	1 to 1.5	ND
CCTV2-0	0 to 0.5	ND
CCTV2-1	1 to 1.5	ND
CCTV3-0	0 to 0.5	ND
CCTV3-1	1 to 1.5	ND
CCTV3-5.5	5.5 to 6	ND
CCTV3-8.5	8.5 to 9	ND
CCTV4-0	0 to 0.5	ND
CCTV4-1	1 to 1.5	ND
CCTV4-5.5	5.5 to 6	ND
CCTV4-8.5	8.5 to 9	ND

TABLE 5
Summary of NOA Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
CCTV5-0	0 to 0.5	ND
CCTV5-1	1 to 1.5	ND
CCTV5-5.5	5.5 to 6	ND
CCTV5-8.5	8.5 to 9	ND
CCTV6-0	0 to 0.5	ND
CCTV6-1	1 to 1.5	ND
CCTV6-5.5	5.5 to 6	ND
CCTV7-0	0 to 0.5	ND
CCTV7-1	1 to 1.5	ND
CCTV7-5.5	5.5 to 6	ND
CCTV7-8.5	8.5 to 9	ND
CCTV9-0	0 to 0.5	ND
CCTV9-1	1 to 1.5	ND
CCTV9-5.5	5.5 to 6	ND
CCTV9-8.5	8.5 to 9	ND
CCTV10-0	0 to 0.5	ND
CCTV10-1	1 to 1.5	ND
CCTV12-0	0 to 0.5	ND
CCTV12-1	1 to 1.5	ND
CCTV12-5.5	5.5 to 6	ND
CCTV12-8.5	8.5 to 9	ND
CCTV13-0	0 to 0.5	ND
CCTV13-1	1 to 1.5	ND
CCTV13-5.5	5.5 to 6	ND
CCTV13-8.5	8.5 to 9	ND
CCTV14-0	0 to 0.5	ND
CCTV14-1	1 to 1.5	ND
CCTV14-5.5	5.5 to 6	ND
CCTV14-8.5	8.5 to 9	ND
CMS1-0	0 to 0.5	ND
CMS1-2.5	2.5 to 3	ND

TABLE 5
Summary of NOA Results - Soil
SR-4/SR-242 TOS
Contra Costa County, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
EMS1-0	0 to 0.5	ND
EMS1-2.5	1 to 1.5	ND
EMS1-5.5	5.5 to 6	ND
EMS1-15.5	15.5 to 16	ND
EMS2-0	0 to 0.5	ND
EMS2-2.5	1 to 1.5	ND
EMS2-5.5	5.5 to 6	ND
EMS2-15.5	15.5 to 16	ND

ND = None detected at 0.25% target analytical sensitivity.

TABLE 6a
Summary of Lead Statistical Analysis
SR-4/SR-242 TOS
Contra Costa County, California

Dataset 1 (borings R1 and R2)

TOTAL LEAD

	Maximum
0 ft	1,400
1.0 ft	11.0

EXCAVATION SCENARIOS

	Weighted Averages	
Excavation Depth	**Maximum Total Lead (mg/kg)**	**WET Lead* (mg/l)**
0 to 1.0 ft	1,400	93.2
Underlying Soil (1.0 to 1.5 ft)	*11.0*	*0.7*
0 to 1.5 ft	937	62.4

Notes:
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET lead concentrations are predicted using slope of regression line, where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0666\ x$

TABLE 6b
Summary of Lead Statistical Analysis
SR-4/SR-242 TOS
Contra Costa County, California

Dataset 4 Borings R7 and R8

TOTAL LEAD

	Maximum
0 ft	370
1.0 ft	64.0

EXCAVATION SCENARIOS

	Weighted Averages	
Excavation Depth	**Maximum Total Lead (mg/kg)**	**WET Lead* (mg/l)**
0 to 1.0 ft	370	24.6
Underlying Soil (1.0 to 1.5 ft)	*64*	*4.3*
0 to 1.5 ft	268	17.8

Notes:
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET lead concentrations are predicted using slope of regression line, where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0666\ x$

TABLE 6c
Summary of Lead Statistical Analysis
SR-4/SR-242 TOS
Contra Costa County, California

Dataset 5 Borings R9 and R10

TOTAL LEAD

	Maximum
0 ft	650
1.0 ft	26.0

EXCAVATION SCENARIOS

	Weighted Averages	
Excavation Depth	**Maximum Total Lead (mg/kg)**	**WET Lead* (mg/l)**
0 to 1.0 ft	650	43.3
Underlying Soil (1.0 to 1.5 ft)	*26.0*	*1.7*
0 to 1.5 ft	442	29.4

Notes:
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET lead concentrations are predicted using slope of regression line, where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0666\ x$

APPENDIX A

California Environmental Protection Agency
Department of Toxic Substances Control

VARIANCE

Applicant Names:

State of California
Department of Transportation
(Caltrans)
1120 N Street
Sacramento, California 95814

Variance No. V09HQSCD006

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

Pursuant to California Health and Safety Code, Section 25143, the Department of Toxic Substances Control hereby issues the attached Variance consisting of 9 pages to the Department of Transportation.

Beverly Rikala
Team Leader, Operating Facilities Team
Department of Toxic Substances Control

Date: 6/30/09

1. INTRODUCTION.

a) Pursuant to Health and Safety Code, section 25143, the California Department of Toxic Substances Control (DTSC) grants this variance to the applicant below for waste considered to be hazardous solely because of its lead concentrations and as further specified herein.

b) DTSC hereby grants this variance only from the requirements specified herein and only in accordance with all terms and conditions specified herein.

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

State of California
Department of Transportation, (Caltrans)
All Districts

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

DATE ISSUED: July 1, 2009 EXPIRATION DATE: July 1, 2014

5. APPLICABLE STATUTES AND REGULATIONS. The hazardous waste that is the subject of this variance is fully regulated under Health and Safety Code, section 25100, et seq. and California Code of Regulations, title 22, division 4.5 except as specifically identified in Section 8 of this variance.

6. DEFINITION. For purposes of this variance, "lead-contaminated soil(s)" shall mean soil that meets the criteria for hazardous waste but contains less than 3397 mg/kg total lead and is hazardous primarily because of aerially-deposited lead contamination associated with exhaust emissions from the operation of motor vehicles.

7. FINDINGS/DETERMINATIONS. DTSC has determined that the variance applicant meets the requirements set forth in Health and Safety Code, section 25143 for a variance from specific regulatory requirements as outlined in Section 8 of this variance. The specific determinations and findings made by DTSC are as follows:

a) Caltrans intends to excavate, stockpile, transport, bury and cover large volumes of soil associated with highway construction projects. In the more urbanized highway corridors around the State this soil is contaminated with lead, primarily due to historic emissions from automobile exhausts. In situ sampling and laboratory testing has shown that some of the soil contains concentrations of lead in excess of State regulatory thresholds, and thus any generated waste from disturbance of the soil

would be regulated as hazardous waste. Such soil contains a Total Threshold Limit Concentration (TTLC) of 1000 milligrams per kilogram (mg/kg) or more lead and/or it meets or exceeds the Soluble Threshold Limit Concentration (STLC) for lead of 5 milligrams per liter (mg/l). A Human Health Risk Assessment prepared for this variance concludes that soil contaminated with elevated concentrations of lead can be managed in a way that presents no significant risk to human health.

b) The lead-contaminated soil will be placed only in Caltrans' right-of-way. Depending on concentration levels, the wastes will be covered with a minimum thickness of one (1) foot of non-hazardous soil or asphalt/concrete cover and will always be at least five (5) feet above the highest groundwater elevation. Caltrans will assure that proper health and safety procedures will be followed for workers, including any persons engaged in maintenance work in areas where the waste has been buried and covered.

c) DTSC finds and requires that the lead-contaminated soil excavated, stockpiled, transported, buried and covered pursuant to this variance is a non-RCRA hazardous waste, and that the waste management activity is insignificant as a potential hazard to human health and safety and the environment, when managed in accordance with the conditions, limitations and other requirements specified in this variance.

8. PROVISIONS WAIVED.

Provided Caltrans meets the terms and conditions of this variance, DTSC waives the hazardous waste management requirements of Health and Safety Code, Chapter 6.5 and California Code of Regulations, title 22 for the lead-contaminated soil that Caltrans reuses in projects that would require Caltrans to obtain a permit for a disposal facility and any other generator requirements that concern the transportation, manifesting, storage and land disposal of hazardous waste.

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

In order for the provisions discussed in section 8 to be waived, lead-contaminated soil must not exceed the contaminant concentrations discussed below and Caltrans management practices must meet all the following conditions:

a) Caltrans implementation of this variance shall comply with all applicable state laws and regulations for water quality control, water quality control plans, waste discharge requirements (including storm water permits), and others issued by the State Water Resources Control Board (SWRCB) and/or a California Regional Water Quality Control Board (RWQCB). Caltrans shall provide written notification to the appropriate RWQCB at least 30 days prior to advertisement for bids of projects that involve invocation of this variance, or as otherwise negotiated with the SWRCB or appropriate RWQCB.

b) The waivers in this variance shall only be applied to lead-contaminated soil that is not a RCRA hazardous waste and is hazardous primarily because of aerially-

deposited lead contamination associated with exhaust emissions from the operation of motor vehicles. The variance is not applicable to any other hazardous waste.

c) Soil containing 1.5 mg/l extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 1411 mg/kg or less total lead may be used as fill provided that the lead-contaminated soil is placed a minimum of five (5) feet above the maximum historic water table elevation and covered with at least one (1) foot of nonhazardous soil that will be maintained by Caltrans to prevent future erosion.

d) Soil containing 150 mg/L extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 3397 mg/kg or less total lead may be used as fill provided that the lead-contaminated soils are placed a minimum of five (5) feet above the maximum historic water table elevation and protected from infiltration by a pavement structure which will be maintained by Caltrans.

e) Lead-contaminated soil with a pH less than 5.5 but greater than 5.0 shall only be used as fill material under the paved portion of the roadway. Lead-contaminated soil with a pH at or less than 5.0 shall be managed as a hazardous waste.

f) For each project that has the potential to generate waste by disturbing lead-contaminated soil (as defined in 6), Caltrans shall conduct sampling and analysis to adequately characterize the soils containing aerially deposited lead in the areas of planned excavation along the project route. Such sampling and analysis shall include the Toxicity Characteristic Leaching Procedure (TCLP) as prescribed by the United States Environmental Protection Agency to determine whether concentrations of contaminants in soil exceed federal criteria for classification as a hazardous waste.

g) Lead-contaminated soil managed pursuant to this variance shall not be moved outside the designated corridor boundaries (see paragraph t) below. All lead-contaminated soil not buried and covered within the same Caltrans corridor where it originated is not eligible for management under this variance and shall be managed as a hazardous waste.

h) Lead-contaminated soil managed pursuant to this variance shall not be placed in areas where it would become in contact with groundwater or surface water (such as streams and rivers).

i) Lead-contaminated soil managed pursuant to this variance shall be buried and covered only in locations that are protected from erosion that may result from storm water run-on and run-off.

j) The lead-contaminated soil shall be buried and covered in a manner that will prevent accidental or deliberate breach of the asphalt, concrete, and/or cover soil.

k) The presence of lead-contaminated soil shall be incorporated into the projects' as-built drawings. The as-built drawings shall be annotated with the location, representative analytical data, and volume of lead-contaminated soil. The as-built drawings shall also state the depth of the cover. These as-built drawings shall be retained by Caltrans.

l) Caltrans shall ensure that no other hazardous wastes, other than the lead-contaminated hazardous waste soil, are placed in the burial areas.

m) Lead-contaminated soil shall not be buried within ten (10) feet of culverts or locations subject to frequent worker exposure.

n) Excavated lead-contaminated soil not placed into the designated area (fill area, roadbed area) by the end of the working day shall be stockpiled and covered with sheets of polyethylene or at least one foot of non-hazardous soil. The lead-contaminated soil, while stockpiled or under transport, shall be protected from contacting surface water and from being dislodged or transported by wind or storm water. The stockpile covers shall be inspected at least once a week and within 24 hours after rainstorms. If the lead-contaminated soil is stockpiled for more than 4 days from the time of excavation, Caltrans shall restrict public access to the stockpile by using barriers that meet the safety requirements of the construction zone. The lead-contaminated soil shall be stockpiled for no more than 90 days from the time the soil is first excavated. If the contaminated soil is stockpiled beyond the 90 day limit Caltrans shall:

1. notify DTSC in writing of the 90 day exceedance and expected date of removal;
2. perform weekly inspections of the stockpiled material to ensure that there is adequate protection from run-on, runoff, public access, and wind dispersion; and
3. notify DTSC on weekly basis of the stockpile status until the stockpile is removed.

The lead-contaminated soil shall be stockpiled for no more than 180 days from the time the soil is first excavated.

o) Caltrans shall ensure that all stockpiling of lead-contaminated soil remains within the project area of the specified corridor. Stockpiling of lead-contaminated soil within the specified corridor, but outside the project area, is prohibited.

p) Caltrans shall conduct confirmatory sampling of any stockpile area in areas not known or expected to contain lead-contaminated soil after removal of the lead-contaminated soil to ensure that contamination has not been left behind or has not migrated from the stockpiled material to the surrounding soils.

q) Caltrans shall stockpile lead-contaminated soil only on high ground (i.e. no sump areas or low points) so that stockpiled soil will not come in contact with surface

water run-on or run-off.

r) Caltrans shall not stockpile lead-contaminated soil in environmentally and ecologically sensitive areas.

s) Caltrans shall ensure that storm/rain run-off that has come into contact with stockpiled lead-contaminated soil will not flow to storm drains, inlets, or waters of the State.

t) Caltrans may dispose of the lead-contaminated soil only within the operating right-of-way of an existing highway, as defined in Streets and Highways Code, section 23. Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project only if the lead-contaminated soil remains within the same designated corridor.

Caltrans shall record any movement of lead-contaminated soil by using a bill of lading. The bill of lading must contain: 1) the US DOT description including shipping name, hazard class and ID number; 2) handling codes; 3) quantity of material; 4) volume of material; 5) date of shipment; 6) origin and destination of shipment; and 7) any specific handling instructions. The bill of lading shall be referenced in and kept on file with the project's as-built drawings. The lead-contaminated soil must be kept covered during transportation.

u) For each specific corridor where this variance is to be implemented, all of the following information shall be submitted in writing to DTSC at least five (5) days before construction of any project begins:

1. plan drawing designating the boundaries of the corridor where lead-contaminated soils will be excavated, stockpiled, buried and covered;

2. a list of the Caltrans projects that the corridor encompasses;

3. a list of Caltrans contractors that will be conducting any phase of work on any project affected by this variance;

4. duration of corridor construction;

5. location where sampling and analytical data used to make lead concentration level determinations are kept (e.g. a particular Caltrans project file);

6. name and phone number (including area code) of project resident engineer and project manager;

7. location where Caltrans and contractor health and safety plan and records are kept;

8. location of project special provisions (including page or section number) for soil excavation, transportation, stockpile, burial and placement of cover material;

9. location of project drawings (including drawing page number) for soil excavation, burial and placement of cover in plan and cross section (for example, "The project plans are located at the resident engineer's office located at 5th and Main Streets, City of Fresno, See pages xxxxx of contract xxxx");

10. updated information if a Caltrans project within the corridor is added, changed or deleted; and

11. type of environmental document prepared for each project, date of adoption, document title, Clearing House number and where the document is available for review. A copy of the Caltrans Categorical Exemption, Categorical Exclusion Form, or if filed, the Notice of Exemption for any project shall be submitted to the DTSC Headquarters Project Manager.

v) Changes in location of lead-contaminated soil placement, quantities or protection measures (field changes) shall be noted in the resident engineer's project log within five (5) days of the field change.

w) Caltrans shall ensure that field changes are in compliance with the requirements of this variance.

x) Operational procedures described in the California Environmental Quality Act (CEQA) Special Initial Study shall be followed by Caltrans for activities conducted under this variance.

y) Caltrans shall implement appropriate health and safety procedures to protect its employees and the public, and to prevent or minimize exposure to potentially hazardous wastes. A project-specific health and safety plan must be prepared and implemented. The monitoring and exposure standards shall be based on construction standards for exposure to lead in California Code of Regulations, title 8, section 1532.1.

z) Caltrans shall provide a district Coordinator for this variance. This Coordinator will be the primary point of contact for information flowing to, or received from, DTSC regarding any matter or submission under this variance. Caltrans shall promptly notify DTSC of the name of Coordinator and any change in the Coordinator.

aa) Caltrans shall conduct regular inspections, consistent with Caltrans' Maintenance Division's current Pavement Inspection and Slope Inspection programs, of the locations where lead-contaminated soil has been buried and/or covered pursuant to this variance. If site inspection reveals deterioration of cover so that conditions in the variance are not met, Caltrans shall repair or replace the cover.

bb) Caltrans shall develop and implement a record keeping mechanisms to record and retain permanent records of all locations where lead-contaminated soil has been buried per this variance. The records shall be made available to DTSC.

cc) If areas subject to the terms of this variance are sold, relinquished or abandoned (including roadways), all future property owners shall be notified in writing in advance by Caltrans of the requirements of this variance, and Caltrans shall provide the owner with a copy of the variance. A copy of such a notice shall be sent to DTSC and contain the corridor location and project. Caltrans shall also disclose to DTSC and the new owner the location of areas where lead-contaminated soil has been buried. Future property owners shall be subject to the same requirements as Caltrans.

dd) For the purposes of informing the public about instances where the variance is implemented, Caltrans shall:

1. maintain current fact sheets at all Caltrans resident engineer offices and the Caltrans District office. Caltrans shall make the fact sheets available to anyone expressing an interest in variance-related work.

2. maintain a binder(s) containing copies of all reports submitted to DTSC at the District office. Caltrans shall ensure that the binders are readily accessible to the public.

3. carry out the following actions when it identifies additional projects:

(A) notify the public via a display advertisement in a newspaper of general circulation in that area.

(B) update and distribute the fact sheet to the mailing list and repository locations.

ee) Lead-contaminated soil may be buried only in areas where access is limited or where lead-contaminated soil is covered and contained by a pavement structure.

ff) Dust containing lead-contaminated soil must be controlled. Water or dust palliative may be applied to control dust. If visible dust migration occurs, all excavation, stockpiling and truck loading and burying must be stopped. The granting of this variance confers no relief on Caltrans from compliance with the laws, regulations and requirements enforced by any local air district or the California Air Resources Board.

gg) Sampling and analysis is required to show the lead-contaminated soil meets the variance criteria. All sampling and analysis must be conducted in accordance with the appropriate methods specified in U.S. EPA SW-846.

hh) DTSC retains the right to require Caltrans or any future owner to remove, and properly dispose of, lead-contaminated soil in the event DTSC determines it is necessary for protection of public health, safety or the environment.

ii) DTSC finds that some projects involving lead-contaminated soil are joint projects between Caltrans and other government entities. In these joint projects, Caltrans may not be the lead agency implementing the project although Caltrans is still involved if the project occurs on its right-of-way.

Caltrans may invoke this variance for joint projects where Caltrans and local government entity are involved provided that 1) the project is within the Caltrans Right-of-Way; 2) Caltrans reviews/ oversees all phases of the project including design, contracting, environmental assessment, construction, operation, and maintenance; and 3) Caltrans oversees the project to verify all variance conditions are complied with. Caltrans will be fully responsible for the variance notification and implementation in these joint projects.

jj) All correspondence shall be directed to the following office:

Hazardous Waste Permitting
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

a) The issuance of this variance does not relieve Caltrans of the responsibility for compliance with Health and Safety Code, chapter 6.5, or the regulations adopted thereunder, and any other laws and regulations other than those specifically identified in Section 8 of this variance. Caltrans is subject to all terms and conditions herein. The granting of this variance confers no relief from compliance with any federal, State or local requirements other than those specifically provided herein.

b) The issuance of this variance does not release Caltrans from any liability associated with the handling of hazardous waste, except as specifically provided herein and subject to all terms and conditions of this variance.

11. VARIANCE MODIFICATION OR REVOCATION. This variance is subject to review at the discretion of DTSC and may be modified or revoked by DTSC upon change of ownership and at any other time pursuant to Health and Safety Code, section 25143.

12. CEQA DETERMINATION. DTSC adopted a Negative Declaration on June 30, 2009.

Approved:

6/30/09
Date

Beverly Rikala
Operating Facilities Team
Department of Toxic Substances Control

APPENDIX B

August 14, 2013

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-009222007A

Workorder No.: N010777

RE: SR-4/242 TDS, E8560-02-54

Attention: Luann Beadle

Enclosed are the results for sample(s) received on August 09, 2013 by Advanced Technology Laboratories, Inc. . 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,

for Gregesmundo

Jose Tenorio Jr.
Laboratory Director

CLIENT: Geocon Consultants, Inc.
Project: SR-4/242 TDS, E8560-02-54
Lab Order: N010777

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

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.

Method Blank (MB2-43648) has hit above the reporting limit for Barium but less than 1/10 of the amount measured in samples. Samples affected were N010777-011A-DUP, N010777-011A-MS, N010777-012A, N010777-013A, N010777-014A, N010777-015A, N010777-016A, N010777-017A, N010777-018A and N010777-019A.

RPD for Sample Duplicate (DUP) N010777-011A-DUP is outside criteria possibly for Molybdenum.

Analytical Comments for EPA 7471A:

Matrix Spike (MS) is outside recovery criteria on QC sample N010777-029A-MS possibly due to non-homogeneity of sample.

RPD for Sample Duplicate (DUP) N010777-001A-DUP is outside criteria possibly due to non-homogeneity of sample.

Analytical Comments for EPA 8015B DRO:

RPD for Sample Duplicate (DUP) N010777-022A-DUP is outside criteria possibly due to non-homogeneity of sample.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *14-Aug-13*

CLIENT: Geocon Consultants, Inc.
Project: SR-4/242 TDS, E8560-02-54
Lab Order: N010777
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N010777-001A	R1-0	Soil	8/8/2013 8:30:00 AM	8/9/2013	8/14/2013
N010777-002A	R1-1	Soil	8/8/2013 8:40:00 AM	8/9/2013	8/14/2013
N010777-003A	R2-0	Soil	8/8/2013 8:25:00 AM	8/9/2013	8/14/2013
N010777-004A	R2-1	Soil	8/8/2013 8:35:00 AM	8/9/2013	8/14/2013
N010777-005A	R3-0	Soil	8/8/2013 9:15:00 AM	8/9/2013	8/14/2013
N010777-006A	R3-1	Soil	8/8/2013 9:25:00 AM	8/9/2013	8/14/2013
N010777-007A	R4-0	Soil	8/8/2013 9:10:00 AM	8/9/2013	8/14/2013
N010777-008A	R4-1	Soil	8/8/2013 9:15:00 AM	8/9/2013	8/14/2013
N010777-009A	R7-0	Soil	8/8/2013 9:40:00 AM	8/9/2013	8/14/2013
N010777-010A	R7-1	Soil	8/8/2013 9:45:00 AM	8/9/2013	8/14/2013
N010777-011A	R8-0	Soil	8/8/2013 9:40:00 AM	8/9/2013	8/14/2013
N010777-012A	R8-1	Soil	8/8/2013 9:45:00 AM	8/9/2013	8/14/2013
N010777-013A	R11-0	Soil	8/8/2013 10:15:00 AM	8/9/2013	8/14/2013
N010777-014A	R11-1	Soil	8/8/2013 10:25:00 AM	8/9/2013	8/14/2013
N010777-015A	R12-0	Soil	8/8/2013 10:15:00 AM	8/9/2013	8/14/2013
N010777-016A	R12-1	Soil	8/8/2013 10:20:00 AM	8/9/2013	8/14/2013
N010777-017A	R15-0	Soil	8/8/2013 10:55:00 AM	8/9/2013	8/14/2013
N010777-018A	R15-1	Soil	8/8/2013 11:00:00 AM	8/9/2013	8/14/2013
N010777-019A	R16-0	Soil	8/8/2013 10:55:00 AM	8/9/2013	8/14/2013
N010777-020A	R16-1	Soil	8/8/2013 11:00:00 AM	8/9/2013	8/14/2013
N010777-021A	R21-0	Soil	8/8/2013 11:35:00 AM	8/9/2013	8/14/2013
N010777-022A	R21-1	Soil	8/8/2013 11:40:00 AM	8/9/2013	8/14/2013
N010777-023A	R22-0	Soil	8/8/2013 12:00:00 PM	8/9/2013	8/14/2013
N010777-024A	R22-1	Soil	8/8/2013 12:05:00 PM	8/9/2013	8/14/2013
N010777-025A	CCTV5-0	Soil	8/8/2013 12:30:00 PM	8/9/2013	8/14/2013
N010777-026A	CCTV5-1	Soil	8/8/2013 12:35:00 PM	8/9/2013	8/14/2013
N010777-027A	CCTV5-2.5	Soil	8/8/2013 12:40:00 PM	8/9/2013	8/14/2013
N010777-028A	CCTV5-5.5	Soil	8/8/2013 12:45:00 PM	8/9/2013	8/14/2013
N010777-029A	CCTV5-8.5	Soil	8/8/2013 12:50:00 PM	8/9/2013	8/14/2013

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:30:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 10:35 AM
Surr: Chlorobenzene - d5	54.6	51-136		%REC	1	8/12/2013 10:35 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.19	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 02:42 PM
Arsenic	3.5	1.0		mg/Kg	1	8/12/2013 02:42 PM
Barium	93	1.0		mg/Kg	1	8/12/2013 02:42 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Chromium	25	1.0		mg/Kg	1	8/12/2013 02:42 PM
Cobalt	9.4	1.0		mg/Kg	1	8/12/2013 02:42 PM
Copper	33	2.0		mg/Kg	1	8/12/2013 02:42 PM
Lead	480	1.0		mg/Kg	1	8/12/2013 02:42 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Nickel	21	1.0		mg/Kg	1	8/12/2013 02:42 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 02:42 PM
Vanadium	42	1.0		mg/Kg	1	8/12/2013 02:42 PM
Zinc	100	1.0		mg/Kg	1	8/12/2013 02:42 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-002		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.0	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	3.9	1.0		mg/Kg	1	8/12/2013 02:44 PM
ORO	8.1	1.0		mg/Kg	1	8/12/2013 02:44 PM
Surr: p-Terphenyl	92.4	59-127		%REC	1	8/12/2013 02:44 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 11:03 AM
Surr: Chlorobenzene - d5	97.8	51-136		%REC	1	8/12/2013 11:03 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 03:35 PM
Arsenic	6.3	1.0		mg/Kg	1	8/12/2013 03:35 PM
Barium	260	1.0		mg/Kg	1	8/12/2013 03:35 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 03:35 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 03:35 PM
Chromium	28	1.0		mg/Kg	1	8/12/2013 03:35 PM
Cobalt	11	1.0		mg/Kg	1	8/12/2013 03:35 PM
Copper	34	2.0		mg/Kg	1	8/12/2013 03:35 PM
Lead	11	1.0		mg/Kg	1	8/12/2013 03:35 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 03:35 PM
Nickel	33	1.0		mg/Kg	1	8/12/2013 03:35 PM
Selenium	1.2	1.0		mg/Kg	1	8/12/2013 03:35 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 03:35 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-002		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 03:35 PM
Vanadium	35	1.0		mg/Kg	1	8/12/2013 03:35 PM
Zinc	57	1.0		mg/Kg	1	8/12/2013 03:35 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R2-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-003		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 02:19 PM
Surr: Chlorobenzene - d5	71.3	51-136		%REC	1	8/12/2013 02:19 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.15	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 03:42 PM
Arsenic	7.1	1.0		mg/Kg	1	8/12/2013 03:42 PM
Barium	180	1.0		mg/Kg	1	8/12/2013 03:42 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 03:42 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 03:42 PM
Chromium	34	1.0		mg/Kg	1	8/12/2013 03:42 PM
Cobalt	10	1.0		mg/Kg	1	8/12/2013 03:42 PM
Copper	67	2.0		mg/Kg	1	8/12/2013 03:42 PM
Lead	1400	1.0		mg/Kg	1	8/12/2013 03:42 PM
Molybdenum	1.2	1.0		mg/Kg	1	8/12/2013 03:42 PM
Nickel	31	1.0		mg/Kg	1	8/12/2013 03:42 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 03:42 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 03:42 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 03:42 PM
Vanadium	41	1.0		mg/Kg	1	8/12/2013 03:42 PM
Zinc	220	1.0		mg/Kg	1	8/12/2013 03:42 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R2-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:35:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-004		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	4.4	1.0		mg/Kg	1	8/12/2013 03:36 PM
ORO	11	1.0		mg/Kg	1	8/12/2013 03:36 PM
Surr: p-Terphenyl	76.2	59-127		%REC	1	8/12/2013 03:36 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 01:23 PM
Surr: Chlorobenzene - d5	81.9	51-136		%REC	1	8/12/2013 01:23 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 03:49 PM
Arsenic	5.5	1.0		mg/Kg	1	8/12/2013 03:49 PM
Barium	280	1.0		mg/Kg	1	8/12/2013 03:49 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 03:49 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 03:49 PM
Chromium	26	1.0		mg/Kg	1	8/12/2013 03:49 PM
Cobalt	12	1.0		mg/Kg	1	8/12/2013 03:49 PM
Copper	39	2.0		mg/Kg	1	8/12/2013 03:49 PM
Lead	7.7	1.0		mg/Kg	1	8/12/2013 03:49 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 03:49 PM
Nickel	36	1.0		mg/Kg	1	8/12/2013 03:49 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 03:49 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 03:49 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R2-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:35:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-004		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 03:49 PM
Vanadium	30	1.0		mg/Kg	1	8/12/2013 03:49 PM
Zinc	54	1.0		mg/Kg	1	8/12/2013 03:49 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R3-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:15:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-005		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 01:51 PM
Surr: Chlorobenzene - d5	72.2	51-136		%REC	1	8/12/2013 01:51 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 03:56 PM
Arsenic	4.3	1.0		mg/Kg	1	8/12/2013 03:56 PM
Barium	95	1.0		mg/Kg	1	8/12/2013 03:56 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Chromium	19	1.0		mg/Kg	1	8/12/2013 03:56 PM
Cobalt	5.2	1.0		mg/Kg	1	8/12/2013 03:56 PM
Copper	12	2.0		mg/Kg	1	8/12/2013 03:56 PM
Lead	9.3	1.0		mg/Kg	1	8/12/2013 03:56 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Nickel	15	1.0		mg/Kg	1	8/12/2013 03:56 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 03:56 PM
Vanadium	23	1.0		mg/Kg	1	8/12/2013 03:56 PM
Zinc	54	1.0		mg/Kg	1	8/12/2013 03:56 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R3-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-006		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	7.3	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	3.2	1.0		mg/Kg	1	8/12/2013 04:03 PM
ORO	9.2	1.0		mg/Kg	1	8/12/2013 04:03 PM
Surr: p-Terphenyl	74.8	59-127		%REC	1	8/12/2013 04:03 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 02:47 PM
Surr: Chlorobenzene - d5	101	51-136		%REC	1	8/12/2013 02:47 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:03 PM
Arsenic	3.5	1.0		mg/Kg	1	8/12/2013 04:03 PM
Barium	72	1.0		mg/Kg	1	8/12/2013 04:03 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:03 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:03 PM
Chromium	18	1.0		mg/Kg	1	8/12/2013 04:03 PM
Cobalt	8.7	1.0		mg/Kg	1	8/12/2013 04:03 PM
Copper	9.0	2.0		mg/Kg	1	8/12/2013 04:03 PM
Lead	6.9	1.0		mg/Kg	1	8/12/2013 04:03 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:03 PM
Nickel	16	1.0		mg/Kg	1	8/12/2013 04:03 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 04:03 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:03 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R3-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-006		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:03 PM
Vanadium	17	1.0		mg/Kg	1	8/12/2013 04:03 PM
Zinc	33	1.0		mg/Kg	1	8/12/2013 04:03 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R4-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:10:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-007		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 03:15 PM
Surr: Chlorobenzene - d5	102	51-136		%REC	1	8/12/2013 03:15 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:11 PM
Arsenic	5.0	1.0		mg/Kg	1	8/12/2013 04:11 PM
Barium	95	1.0		mg/Kg	1	8/12/2013 04:11 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Chromium	13	1.0		mg/Kg	1	8/12/2013 04:11 PM
Cobalt	6.3	1.0		mg/Kg	1	8/12/2013 04:11 PM
Copper	12	2.0		mg/Kg	1	8/12/2013 04:11 PM
Lead	15	1.0		mg/Kg	1	8/12/2013 04:11 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Nickel	15	1.0		mg/Kg	1	8/12/2013 04:11 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:11 PM
Vanadium	27	1.0		mg/Kg	1	8/12/2013 04:11 PM
Zinc	35	1.0		mg/Kg	1	8/12/2013 04:11 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R4-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:15:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-008		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	7.8	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	3.3	1.0		mg/Kg	1	8/12/2013 04:29 PM
ORO	10	1.0		mg/Kg	1	8/12/2013 04:29 PM
Surr: p-Terphenyl	95.5	59-127		%REC	1	8/12/2013 04:29 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 03:44 PM
Surr: Chlorobenzene - d5	101	51-136		%REC	1	8/12/2013 03:44 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:18 PM
Arsenic	4.4	1.0		mg/Kg	1	8/12/2013 04:18 PM
Barium	99	1.0		mg/Kg	1	8/12/2013 04:18 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM
Chromium	13	1.0		mg/Kg	1	8/12/2013 04:18 PM
Cobalt	5.8	1.0		mg/Kg	1	8/12/2013 04:18 PM
Copper	12	2.0		mg/Kg	1	8/12/2013 04:18 PM
Lead	10	1.0		mg/Kg	1	8/12/2013 04:18 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM
Nickel	15	1.0		mg/Kg	1	8/12/2013 04:18 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R4-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:15:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-008		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:18 PM
Vanadium	23	1.0		mg/Kg	1	8/12/2013 04:18 PM
Zinc	29	1.0		mg/Kg	1	8/12/2013 04:18 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R7-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-009		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 04:12 PM
Surr: Chlorobenzene - d5	71.5	51-136		%REC	1	8/12/2013 04:12 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	3.8	0.99		mg/Kg	10	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:25 PM
Arsenic	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Barium	34	1.0		mg/Kg	1	8/12/2013 04:25 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Chromium	16	1.0		mg/Kg	1	8/12/2013 04:25 PM
Cobalt	19	1.0		mg/Kg	1	8/12/2013 04:25 PM
Copper	49	2.0		mg/Kg	1	8/12/2013 04:25 PM
Lead	38	1.0		mg/Kg	1	8/12/2013 04:25 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Nickel	19	1.0		mg/Kg	1	8/12/2013 04:25 PM
Selenium	2.0	1.0		mg/Kg	1	8/12/2013 04:25 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:25 PM
Vanadium	130	1.0		mg/Kg	1	8/12/2013 04:25 PM
Zinc	65	1.0		mg/Kg	1	8/12/2013 04:25 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R7-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-010		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	16	1.0		mg/Kg	1	8/12/2013 04:56 PM
ORO	53	1.0		mg/Kg	1	8/12/2013 04:56 PM
Surr: p-Terphenyl	101	59-127		%REC	1	8/12/2013 04:56 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 04:50 PM
Surr: Chlorobenzene - d5	99.6	51-136		%REC	1	8/12/2013 04:50 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	9.1	1.0		mg/Kg	10	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:33 PM
Arsenic	ND	1.0		mg/Kg	1	8/12/2013 04:33 PM
Barium	27	1.0		mg/Kg	1	8/12/2013 04:33 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:33 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:33 PM
Chromium	14	1.0		mg/Kg	1	8/12/2013 04:33 PM
Cobalt	20	1.0		mg/Kg	1	8/12/2013 04:33 PM
Copper	45	2.0		mg/Kg	1	8/12/2013 04:33 PM
Lead	7.8	1.0		mg/Kg	1	8/12/2013 04:33 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:33 PM
Nickel	15	1.0		mg/Kg	1	8/12/2013 04:33 PM
Selenium	2.8	1.0		mg/Kg	1	8/12/2013 04:33 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:33 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R7-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-010		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:33 PM
Vanadium	130	1.0		mg/Kg	1	8/12/2013 04:33 PM
Zinc	48	1.0		mg/Kg	1	8/12/2013 04:33 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-011		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 06:19 PM
Surr: Chlorobenzene - d5	59.5	51-136		%REC	1	8/12/2013 06:19 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	1.4	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 04:41 PM
Arsenic	4.1	1.0		mg/Kg	1	8/12/2013 04:41 PM
Barium	82	1.0		mg/Kg	1	8/12/2013 04:41 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 04:41 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 04:41 PM
Chromium	24	1.0		mg/Kg	1	8/12/2013 04:41 PM
Cobalt	9.7	1.0		mg/Kg	1	8/12/2013 04:41 PM
Copper	47	2.0		mg/Kg	1	8/12/2013 04:41 PM
Lead	370	1.0		mg/Kg	1	8/12/2013 04:41 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 04:41 PM
Nickel	27	1.0		mg/Kg	1	8/12/2013 04:41 PM
Selenium	1.2	1.0		mg/Kg	1	8/12/2013 04:41 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 04:41 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 04:41 PM
Vanadium	54	1.0		mg/Kg	1	8/12/2013 04:41 PM
Zinc	210	1.0		mg/Kg	1	8/12/2013 04:41 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-012		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	7.6	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	27	10		mg/Kg	10	8/12/2013 05:22 PM
ORO	86	10		mg/Kg	10	8/12/2013 05:22 PM
Surr: p-Terphenyl	89.2	59-127		%REC	10	8/12/2013 05:22 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130812A	QC Batch: E13VS082			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/12/2013 07:15 PM
Surr: Chlorobenzene - d5	92.4	51-136		%REC	1	8/12/2013 07:15 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.24	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 11:38 AM
Arsenic	5.8	1.0		mg/Kg	1	8/13/2013 11:38 AM
Barium	98	1.0	B	mg/Kg	1	8/13/2013 11:38 AM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM
Chromium	21	1.0		mg/Kg	1	8/13/2013 11:38 AM
Cobalt	8.7	1.0		mg/Kg	1	8/13/2013 11:38 AM
Copper	20	2.0		mg/Kg	1	8/13/2013 11:38 AM
Lead	64	1.0		mg/Kg	1	8/13/2013 11:38 AM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM
Nickel	24	1.0		mg/Kg	1	8/13/2013 11:38 AM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM
Silver	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-012		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/13/2013 11:38 AM
Vanadium	34	1.0		mg/Kg	1	8/13/2013 11:38 AM
Zinc	62	1.0		mg/Kg	1	8/13/2013 11:38 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R11-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:15:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-013		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B				
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 10:29 AM
Surr: Chlorobenzene - d5	60.5	51-136		%REC	1	8/13/2013 10:29 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.16	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 11:44 AM
Arsenic	3.7	1.0		mg/Kg	1	8/13/2013 11:44 AM
Barium	41	1.0	B	mg/Kg	1	8/13/2013 11:44 AM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Chromium	15	1.0		mg/Kg	1	8/13/2013 11:44 AM
Cobalt	8.0	1.0		mg/Kg	1	8/13/2013 11:44 AM
Copper	23	2.0		mg/Kg	1	8/13/2013 11:44 AM
Lead	12	1.0		mg/Kg	1	8/13/2013 11:44 AM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Nickel	13	1.0		mg/Kg	1	8/13/2013 11:44 AM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Silver	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Thallium	ND	1.0		mg/Kg	1	8/13/2013 11:44 AM
Vanadium	36	1.0		mg/Kg	1	8/13/2013 11:44 AM
Zinc	100	1.0		mg/Kg	1	8/13/2013 11:44 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R11-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-014		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.5	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	26	10		mg/Kg	10	8/12/2013 05:49 PM
ORO	90	10		mg/Kg	10	8/12/2013 05:49 PM
Surr: p-Terphenyl	89.9	59-127		%REC	10	8/12/2013 05:49 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 01:24 PM
Surr: Chlorobenzene - d5	77.6	51-136		%REC	1	8/13/2013 01:24 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.46	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 11:51 AM
Arsenic	2.0	1.0		mg/Kg	1	8/13/2013 11:51 AM
Barium	39	1.0	B	mg/Kg	1	8/13/2013 11:51 AM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM
Chromium	18	1.0		mg/Kg	1	8/13/2013 11:51 AM
Cobalt	15	1.0		mg/Kg	1	8/13/2013 11:51 AM
Copper	81	2.0		mg/Kg	1	8/13/2013 11:51 AM
Lead	5.8	1.0		mg/Kg	1	8/13/2013 11:51 AM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM
Nickel	15	1.0		mg/Kg	1	8/13/2013 11:51 AM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM
Silver	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R11-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-014		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/13/2013 11:51 AM
Vanadium	60	1.0		mg/Kg	1	8/13/2013 11:51 AM
Zinc	31	1.0		mg/Kg	1	8/13/2013 11:51 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R12-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:15:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-015		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B				
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 01:52 PM
Surr: Chlorobenzene - d5	53.6	51-136		%REC	1	8/13/2013 01:52 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 11:59 AM
Arsenic	4.2	1.0		mg/Kg	1	8/13/2013 11:59 AM
Barium	48	1.0	B	mg/Kg	1	8/13/2013 11:59 AM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Chromium	13	1.0		mg/Kg	1	8/13/2013 11:59 AM
Cobalt	7.3	1.0		mg/Kg	1	8/13/2013 11:59 AM
Copper	12	2.0		mg/Kg	1	8/13/2013 11:59 AM
Lead	17	1.0		mg/Kg	1	8/13/2013 11:59 AM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Nickel	12	1.0		mg/Kg	1	8/13/2013 11:59 AM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Silver	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Thallium	ND	1.0		mg/Kg	1	8/13/2013 11:59 AM
Vanadium	27	1.0		mg/Kg	1	8/13/2013 11:59 AM
Zinc	140	1.0		mg/Kg	1	8/13/2013 11:59 AM

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		

CLIENT: Geocon Consultants, Inc.
Lab Order: N010777
Project: SR-4/242 TDS, E8560-02-54
Lab ID: N010777-016

Client Sample ID: R12-1
Collection Date: 8/8/2013 10:20:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	5.4	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	1.0	1.0		mg/Kg	1	8/12/2013 06:15 PM
ORO	2.0	1.0		mg/Kg	1	8/12/2013 06:15 PM
Surr: p-Terphenyl	92.2	59-127		%REC	1	8/12/2013 06:15 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 02:20 PM
Surr: Chlorobenzene - d5	80.9	51-136		%REC	1	8/13/2013 02:20 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 12:06 PM
Arsenic	2.0	1.0		mg/Kg	1	8/13/2013 12:06 PM
Barium	34	1.0	B	mg/Kg	1	8/13/2013 12:06 PM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM
Chromium	9.8	1.0		mg/Kg	1	8/13/2013 12:06 PM
Cobalt	5.0	1.0		mg/Kg	1	8/13/2013 12:06 PM
Copper	5.9	2.0		mg/Kg	1	8/13/2013 12:06 PM
Lead	4.1	1.0		mg/Kg	1	8/13/2013 12:06 PM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM
Nickel	6.3	1.0		mg/Kg	1	8/13/2013 12:06 PM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM
Silver	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R12-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:20:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-016		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/13/2013 12:06 PM
Vanadium	17	1.0		mg/Kg	1	8/13/2013 12:06 PM
Zinc	13	1.0		mg/Kg	1	8/13/2013 12:06 PM

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R15-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:55:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-017		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 02:48 PM
Surr: Chlorobenzene - d5	69.4	51-136		%REC	1	8/13/2013 02:48 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.43	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 12:12 PM
Arsenic	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Barium	21	1.0	B	mg/Kg	1	8/13/2013 12:12 PM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Chromium	21	1.0		mg/Kg	1	8/13/2013 12:12 PM
Cobalt	22	1.0		mg/Kg	1	8/13/2013 12:12 PM
Copper	37	2.0		mg/Kg	1	8/13/2013 12:12 PM
Lead	14	1.0		mg/Kg	1	8/13/2013 12:12 PM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Nickel	18	1.0		mg/Kg	1	8/13/2013 12:12 PM
Selenium	1.0	1.0		mg/Kg	1	8/13/2013 12:12 PM
Silver	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Thallium	ND	1.0		mg/Kg	1	8/13/2013 12:12 PM
Vanadium	79	1.0		mg/Kg	1	8/13/2013 12:12 PM
Zinc	30	1.0		mg/Kg	1	8/13/2013 12:12 PM

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

CLIENT: Geocon Consultants, Inc.
Lab Order: N010777
Project: SR-4/242 TDS, E8560-02-54
Lab ID: N010777-018

Client Sample ID: R15-1
Collection Date: 8/8/2013 11:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	3.3	1.0		mg/Kg	1	8/12/2013 06:42 PM
ORO	13	1.0		mg/Kg	1	8/12/2013 06:42 PM
Surr: p-Terphenyl	96.2	59-127		%REC	1	8/12/2013 06:42 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 03:16 PM
Surr: Chlorobenzene - d5	87.2	51-136		%REC	1	8/13/2013 03:16 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.13	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 12:19 PM
Arsenic	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM
Barium	15	1.0	B	mg/Kg	1	8/13/2013 12:19 PM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM
Chromium	26	1.0		mg/Kg	1	8/13/2013 12:19 PM
Cobalt	23	1.0		mg/Kg	1	8/13/2013 12:19 PM
Copper	28	2.0		mg/Kg	1	8/13/2013 12:19 PM
Lead	2.4	1.0		mg/Kg	1	8/13/2013 12:19 PM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM
Nickel	21	1.0		mg/Kg	1	8/13/2013 12:19 PM
Selenium	1.1	1.0		mg/Kg	1	8/13/2013 12:19 PM
Silver	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM

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

CLIENT: Geocon Consultants, Inc.
Lab Order: N010777
Project: SR-4/242 TDS, E8560-02-54
Lab ID: N010777-018

Client Sample ID: R15-1
Collection Date: 8/8/2013 11:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/13/2013 12:19 PM
Vanadium	85	1.0		mg/Kg	1	8/13/2013 12:19 PM
Zinc	22	1.0		mg/Kg	1	8/13/2013 12:19 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R16-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:55:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-019		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 03:45 PM
Surr: Chlorobenzene - d5	69.1	51-136		%REC	1	8/13/2013 03:45 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.012	0.010		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43648			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 12:38 PM
Arsenic	3.3	1.0		mg/Kg	1	8/13/2013 12:38 PM
Barium	82	1.0	B	mg/Kg	1	8/13/2013 12:38 PM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Chromium	24	1.0		mg/Kg	1	8/13/2013 12:38 PM
Cobalt	12	1.0		mg/Kg	1	8/13/2013 12:38 PM
Copper	38	2.0		mg/Kg	1	8/13/2013 12:38 PM
Lead	58	1.0		mg/Kg	1	8/13/2013 12:38 PM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Nickel	25	1.0		mg/Kg	1	8/13/2013 12:38 PM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Silver	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Thallium	ND	1.0		mg/Kg	1	8/13/2013 12:38 PM
Vanadium	54	1.0		mg/Kg	1	8/13/2013 12:38 PM
Zinc	87	1.0		mg/Kg	1	8/13/2013 12:38 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R16-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 11:00:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-020		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.5	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130812A	QC Batch: 43657			PrepDate: 8/12/2013		Analyst: **MDM**
DRO	3.1	1.0		mg/Kg	1	8/12/2013 07:08 PM
ORO	9.8	1.0		mg/Kg	1	8/12/2013 07:08 PM
Surr: p-Terphenyl	91.9	59-127		%REC	1	8/12/2013 07:08 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 04:41 PM
Surr: Chlorobenzene - d5	79.2	51-136		%REC	1	8/13/2013 04:41 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813A	QC Batch: 43655			PrepDate: 8/9/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43666			PrepDate: 8/13/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/13/2013 02:31 PM
Arsenic	2.6	1.0		mg/Kg	1	8/13/2013 02:31 PM
Barium	59	1.0		mg/Kg	1	8/13/2013 02:31 PM
Beryllium	ND	1.0		mg/Kg	1	8/13/2013 02:31 PM
Cadmium	ND	1.0		mg/Kg	1	8/13/2013 02:31 PM
Chromium	16	1.0		mg/Kg	1	8/13/2013 02:31 PM
Cobalt	9.2	1.0		mg/Kg	1	8/13/2013 02:31 PM
Copper	18	2.0		mg/Kg	1	8/13/2013 02:31 PM
Lead	4.7	1.0		mg/Kg	1	8/13/2013 02:31 PM
Molybdenum	ND	1.0		mg/Kg	1	8/13/2013 02:31 PM
Nickel	15	1.0		mg/Kg	1	8/13/2013 02:31 PM
Selenium	ND	1.0		mg/Kg	1	8/13/2013 02:31 PM
Silver	ND	1.0		mg/Kg	1	8/13/2013 02:31 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R16-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 11:00:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-020		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130813A	QC Batch: 43666			PrepDate:	8/13/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/13/2013 02:31 PM
Vanadium	30	1.0		mg/Kg	1	8/13/2013 02:31 PM
Zinc	32	1.0		mg/Kg	1	8/13/2013 02:31 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R21-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 11:35:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-021		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 10:57 AM
Surr: Chlorobenzene - d5	76.6	51-136		%REC	1	8/13/2013 10:57 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130814A	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.25	0.10		mg/Kg	1	8/14/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 12:11 PM
Arsenic	3.4	1.0		mg/Kg	1	8/12/2013 12:11 PM
Barium	210	1.0		mg/Kg	1	8/12/2013 12:11 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 12:11 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 12:11 PM
Chromium	37	1.0		mg/Kg	1	8/12/2013 12:11 PM
Cobalt	12	1.0		mg/Kg	1	8/12/2013 12:11 PM
Copper	27	2.0		mg/Kg	1	8/12/2013 12:11 PM
Lead	21	1.0		mg/Kg	1	8/12/2013 12:11 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 12:11 PM
Nickel	62	1.0		mg/Kg	1	8/12/2013 12:11 PM
Selenium	1.2	1.0		mg/Kg	1	8/12/2013 12:11 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 12:11 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 12:11 PM
Vanadium	35	1.0		mg/Kg	1	8/12/2013 12:11 PM
Zinc	74	1.0		mg/Kg	1	8/12/2013 12:11 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R21-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 11:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-022		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	11	1.0		mg/Kg	1	8/12/2013 04:15 PM
ORO	26	1.0		mg/Kg	1	8/12/2013 04:15 PM
Surr: p-Terphenyl	82.4	59-127		%REC	1	8/12/2013 04:15 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 05:37 PM
Surr: Chlorobenzene - d5	83.6	51-136		%REC	1	8/13/2013 05:37 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813B	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.25	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 01:05 PM
Arsenic	3.0	1.0		mg/Kg	1	8/12/2013 01:05 PM
Barium	210	1.0		mg/Kg	1	8/12/2013 01:05 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 01:05 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 01:05 PM
Chromium	34	1.0		mg/Kg	1	8/12/2013 01:05 PM
Cobalt	13	1.0		mg/Kg	1	8/12/2013 01:05 PM
Copper	24	2.0		mg/Kg	1	8/12/2013 01:05 PM
Lead	5.6	1.0		mg/Kg	1	8/12/2013 01:05 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 01:05 PM
Nickel	67	1.0		mg/Kg	1	8/12/2013 01:05 PM
Selenium	1.1	1.0		mg/Kg	1	8/12/2013 01:05 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 01:05 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R21-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 11:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-022		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 01:05 PM
Vanadium	32	1.0		mg/Kg	1	8/12/2013 01:05 PM
Zinc	40	1.0		mg/Kg	1	8/12/2013 01:05 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R22-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:00:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-023		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 06:05 PM
Surr: Chlorobenzene - d5	54.8	51-136		%REC	1	8/13/2013 06:05 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813B	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.15	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 01:12 PM
Arsenic	3.2	1.0		mg/Kg	1	8/12/2013 01:12 PM
Barium	270	1.0		mg/Kg	1	8/12/2013 01:12 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Chromium	27	1.0		mg/Kg	1	8/12/2013 01:12 PM
Cobalt	8.3	1.0		mg/Kg	1	8/12/2013 01:12 PM
Copper	46	2.0		mg/Kg	1	8/12/2013 01:12 PM
Lead	43	1.0		mg/Kg	1	8/12/2013 01:12 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Nickel	40	1.0		mg/Kg	1	8/12/2013 01:12 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 01:12 PM
Vanadium	34	1.0		mg/Kg	1	8/12/2013 01:12 PM
Zinc	170	1.0		mg/Kg	1	8/12/2013 01:12 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R22-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:05:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-024		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	6.7	1.0		mg/Kg	1	8/12/2013 05:06 PM
ORO	13	1.0		mg/Kg	1	8/12/2013 05:06 PM
Surr: p-Terphenyl	82.7	59-127		%REC	1	8/12/2013 05:06 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 06:33 PM
Surr: Chlorobenzene - d5	86.8	51-136		%REC	1	8/13/2013 06:33 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813B	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 01:19 PM
Arsenic	5.4	1.0		mg/Kg	1	8/12/2013 01:19 PM
Barium	120	1.0		mg/Kg	1	8/12/2013 01:19 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 01:19 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 01:19 PM
Chromium	18	1.0		mg/Kg	1	8/12/2013 01:19 PM
Cobalt	8.8	1.0		mg/Kg	1	8/12/2013 01:19 PM
Copper	26	2.0		mg/Kg	1	8/12/2013 01:19 PM
Lead	17	1.0		mg/Kg	1	8/12/2013 01:19 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 01:19 PM
Nickel	20	1.0		mg/Kg	1	8/12/2013 01:19 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 01:19 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 01:19 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R22-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:05:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-024		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Thallium	ND	1.0		mg/Kg	1	8/12/2013 01:19 PM
Vanadium	29	1.0		mg/Kg	1	8/12/2013 01:19 PM
Zinc	50	1.0		mg/Kg	1	8/12/2013 01:19 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV5-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:30:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-025		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Lead	38	5.0		mg/Kg	1	8/12/2013 01:26 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV5-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:35:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-026		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 07:01 PM
Surr: Chlorobenzene - d5	66.9	51-136		%REC	1	8/13/2013 07:01 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Lead	27	5.0		mg/Kg	1	8/12/2013 01:33 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV5-2.5
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:40:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-027		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
			EPA 9045C			
RunID: WETCHEM_130809C	QC Batch: R89927			PrepDate:		Analyst: **LCC**
pH	8.5	0.10		pH Units	1	8/9/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/9/2013
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130813A	QC Batch: E13VS083			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/13/2013 12:21 PM
Surr: Chlorobenzene - d5	83.2	51-136		%REC	1	8/13/2013 12:21 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130813B	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/13/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 01:40 PM
Arsenic	3.0	1.0		mg/Kg	1	8/12/2013 01:40 PM
Barium	160	1.0		mg/Kg	1	8/12/2013 01:40 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Chromium	20	1.0		mg/Kg	1	8/12/2013 01:40 PM
Cobalt	9.2	1.0		mg/Kg	1	8/12/2013 01:40 PM
Copper	24	2.0		mg/Kg	1	8/12/2013 01:40 PM
Lead	18	1.0		mg/Kg	1	8/12/2013 01:40 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Nickel	23	1.0		mg/Kg	1	8/12/2013 01:40 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 01:40 PM
Vanadium	30	1.0		mg/Kg	1	8/12/2013 01:40 PM
Zinc	50	1.0		mg/Kg	1	8/12/2013 01:40 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV5-5.5
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:45:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-028		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	7.0	1.0		mg/Kg	1	8/12/2013 05:32 PM
ORO	19	1.0		mg/Kg	1	8/12/2013 05:32 PM
Surr: p-Terphenyl	88.7	59-127		%REC	1	8/12/2013 05:32 PM
LEAD BY ICP						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Lead	11	5.0		mg/Kg	1	8/12/2013 01:47 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV5-8.5
Lab Order:	N010777	**Collection Date:**	8/8/2013 12:50:00 PM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-029		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130812A	QC Batch: 43657			PrepDate:	8/12/2013	Analyst: **MDM**
DRO	2.7	1.0		mg/Kg	1	8/12/2013 05:58 PM
ORO	5.4	1.0		mg/Kg	1	8/12/2013 05:58 PM
Surr: p-Terphenyl	84.9	59-127		%REC	1	8/12/2013 05:58 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471				**EPA 7471A**		
RunID: AA1_130813B	QC Batch: 43656			PrepDate:	8/9/2013	Analyst: **LCC**
Mercury	0.29	0.099		mg/Kg	1	8/13/2013
ICP METALS						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130812A	QC Batch: 43652			PrepDate:	8/9/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/12/2013 02:18 PM
Arsenic	2.9	1.0		mg/Kg	1	8/12/2013 02:18 PM
Barium	160	1.0		mg/Kg	1	8/12/2013 02:18 PM
Beryllium	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Cadmium	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Chromium	15	1.0		mg/Kg	1	8/12/2013 02:18 PM
Cobalt	6.8	1.0		mg/Kg	1	8/12/2013 02:18 PM
Copper	15	2.0		mg/Kg	1	8/12/2013 02:18 PM
Lead	4.5	1.0		mg/Kg	1	8/12/2013 02:18 PM
Molybdenum	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Nickel	15	1.0		mg/Kg	1	8/12/2013 02:18 PM
Selenium	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Silver	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Thallium	ND	1.0		mg/Kg	1	8/12/2013 02:18 PM
Vanadium	27	1.0		mg/Kg	1	8/12/2013 02:18 PM
Zinc	42	1.0		mg/Kg	1	8/12/2013 02:18 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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB2-43648** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **PBS** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	1.356	1.0									B
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	0.158	1.0									

Sample ID: **LCS-43648** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **LCSS** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.966	2.0	50.00	0	99.9	80	120				
Arsenic	47.730	1.0	50.00	0	95.5	80	120				
Barium	49.976	1.0	50.00	0	100	80	120				
Beryllium	47.021	1.0	50.00	0	94.0	80	120				
Cadmium	46.922	1.0	50.00	0	93.8	80	120				
Chromium	48.992	1.0	50.00	0	98.0	80	120				
Cobalt	47.359	1.0	50.00	0	94.7	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-43648** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **LCSS** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	51.198	2.0	50.00	0	102	80	120				
Lead	49.194	1.0	50.00	0	98.4	80	120				
Molybdenum	51.061	1.0	50.00	0	102	80	120				
Nickel	46.492	1.0	50.00	0	93.0	80	120				
Selenium	40.741	1.0	50.00	0	81.5	80	120				
Silver	45.924	1.0	50.00	0	91.8	80	120				
Thallium	47.525	1.0	50.00	0	95.0	80	120				
Vanadium	50.135	1.0	50.00	0	100	80	120				
Zinc	45.538	1.0	50.00	0	91.1	80	120				

Sample ID: **N010777-001A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	3.547	1.0						3.542	0.150	20	
Barium	88.329	1.0						93.04	5.20	20	
Beryllium	0.146	1.0						0.1460	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	23.457	1.0						25.30	7.57	20	
Cobalt	8.428	1.0						9.380	10.7	20	
Copper	30.417	2.0						33.14	8.57	20	
Lead	461.707	1.0						475.1	2.85	20	
Molybdenum	ND	1.0						0.4595	0	20	
Nickel	20.048	1.0						20.91	4.20	20	
Selenium	0.566	1.0						0.6807	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	37.746	1.0						42.13	11.0	20	
Zinc	96.384	1.0						103.5	7.11	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-001A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.306	2.0	50.10	0	34.5	75	125				S
Arsenic	45.864	1.0	50.10	3.542	84.5	75	125				
Barium	148.209	1.0	50.10	93.04	110	75	125				
Beryllium	42.427	1.0	50.10	0.1460	84.4	75	125				
Cadmium	40.027	1.0	50.10	0	79.9	75	125				
Chromium	71.275	1.0	50.10	25.30	91.8	75	125				
Cobalt	53.762	1.0	50.10	9.380	88.6	75	125				
Copper	86.440	2.0	50.10	33.14	106	75	125				
Lead	504.507	1.0	50.10	475.1	58.8	75	125				S
Molybdenum	42.515	1.0	50.10	0.4595	83.9	75	125				
Nickel	65.153	1.0	50.10	20.91	88.3	75	125				
Selenium	37.362	1.0	50.10	0.6807	73.2	75	125				S
Silver	41.742	1.0	50.10	0	83.3	75	125				
Thallium	37.795	1.0	50.10	0	75.4	75	125				
Vanadium	92.109	1.0	50.10	42.13	99.8	75	125				
Zinc	143.321	1.0	50.10	103.5	79.5	75	125				

Sample ID: **N010777-001A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.233	2.0	49.98	0	34.5	75	125	17.31	0.425	20	S
Arsenic	45.629	1.0	49.98	3.542	84.2	75	125	45.86	0.514	20	
Barium	127.404	1.0	49.98	93.04	68.8	75	125	148.2	15.1	20	S
Beryllium	42.493	1.0	49.98	0.1460	84.7	75	125	42.43	0.157	20	
Cadmium	39.952	1.0	49.98	0	79.9	75	125	40.03	0.186	20	
Chromium	66.088	1.0	49.98	25.30	81.6	75	125	71.27	7.55	20	
Cobalt	52.987	1.0	49.98	9.380	87.3	75	125	53.76	1.45	20	
Copper	80.035	2.0	49.98	33.14	93.8	75	125	86.44	7.70	20	
Lead	467.075	1.0	49.98	475.1	-16.0	75	125	504.5	7.71	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-001A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	41.500	1.0	49.98	0.4595	82.1	75	125	42.52	2.42	20	
Nickel	60.811	1.0	49.98	20.91	79.8	75	125	65.15	6.89	20	
Selenium	37.757	1.0	49.98	0.6807	74.2	75	125	37.36	1.05	20	S
Silver	41.790	1.0	49.98	0	83.6	75	125	41.74	0.116	20	
Thallium	38.064	1.0	49.98	0	76.2	75	125	37.80	0.708	20	
Vanadium	90.361	1.0	49.98	42.13	96.5	75	125	92.11	1.92	20	
Zinc	135.655	1.0	49.98	103.5	64.4	75	125	143.3	5.50	20	S

Sample ID: **N010777-011A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	4.745	1.0						4.079	15.1	20	
Barium	88.062	1.0						82.09	7.02	20	B
Beryllium	ND	1.0						0	0	20	
Cadmium	0.182	1.0						0.1930	0	20	
Chromium	25.374	1.0						24.14	4.98	20	
Cobalt	11.146	1.0						9.732	13.5	20	
Copper	47.782	2.0						46.77	2.13	20	
Lead	434.360	1.0						368.4	16.4	20	
Molybdenum	1.194	1.0						0.9191	26.1	20	R
Nickel	25.294	1.0						27.15	7.08	20	
Selenium	1.037	1.0						1.208	15.2	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	64.232	1.0						53.72	17.8	20	
Zinc	241.679	1.0						208.8	14.6	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-011A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43648** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	12.692	2.0	50.00	0	25.4	75	125				S
Arsenic	44.855	1.0	50.00	4.079	81.6	75	125				
Barium	129.898	1.0	50.00	82.09	95.6	75	125				B
Beryllium	41.716	1.0	50.00	0	83.4	75	125				
Cadmium	40.706	1.0	50.00	0.1930	81.0	75	125				
Chromium	71.605	1.0	50.00	24.14	94.9	75	125				
Cobalt	52.538	1.0	50.00	9.732	85.6	75	125				
Copper	92.415	2.0	50.00	46.77	91.3	75	125				
Lead	469.353	1.0	50.00	368.4	202	75	125				S
Molybdenum	40.154	1.0	50.00	0.9191	78.5	75	125				
Nickel	71.259	1.0	50.00	27.15	88.2	75	125				
Selenium	37.460	1.0	50.00	1.208	72.5	75	125				S
Silver	40.110	1.0	50.00	0	80.2	75	125				
Thallium	37.921	1.0	50.00	0	75.8	75	125				
Vanadium	100.861	1.0	50.00	53.72	94.3	75	125				
Zinc	282.039	1.0	50.00	208.8	146	75	125				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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-43652** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **PBS** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.219	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	0.177	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	0.158	1.0									

Sample ID: **MB2-43652** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **PBS** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB2-43652** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **PBS** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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-43652** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **LCSS** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.877	2.0	50.00	0	97.8	80	120				
Arsenic	47.424	1.0	50.00	0	94.8	80	120				
Barium	48.600	1.0	50.00	0	97.2	80	120				
Beryllium	46.045	1.0	50.00	0	92.1	80	120				
Cadmium	46.522	1.0	50.00	0	93.0	80	120				
Chromium	47.893	1.0	50.00	0	95.8	80	120				
Cobalt	46.574	1.0	50.00	0	93.1	80	120				
Copper	49.502	2.0	50.00	0	99.0	80	120				
Lead	48.669	1.0	50.00	0	97.3	80	120				
Molybdenum	49.799	1.0	50.00	0	99.6	80	120				
Nickel	45.685	1.0	50.00	0	91.4	80	120				
Selenium	40.434	1.0	50.00	0	80.9	80	120				
Silver	46.020	1.0	50.00	0	92.0	80	120				
Thallium	46.631	1.0	50.00	0	93.3	80	120				
Vanadium	48.676	1.0	50.00	0	97.4	80	120				
Zinc	45.543	1.0	50.00	0	91.1	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010730-001C-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	2.956	1.0						3.106	4.94	20	
Barium	68.352	1.0						68.90	0.805	20	
Beryllium	0.217	1.0						0.2268	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	8.824	1.0						9.227	4.46	20	
Cobalt	2.044	1.0						2.110	3.20	20	
Copper	4.849	2.0						4.924	1.52	20	
Lead	1.992	1.0						1.989	0.119	20	
Molybdenum	0.221	1.0						0.2259	0	20	
Nickel	4.375	1.0						4.463	1.99	20	
Selenium	ND	1.0						0	0	20	
Silver	0.401	1.0						0.4076	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	10.904	1.0						11.18	2.49	20	
Zinc	13.967	1.0						14.63	4.65	20	

Sample ID: **N010730-001C-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.945	2.0	49.98	0	35.9	75	125				S
Arsenic	53.186	1.0	49.98	3.106	100	75	125				
Barium	109.995	1.0	49.98	68.90	82.2	75	125				
Beryllium	47.405	1.0	49.98	0.2268	94.4	75	125				
Cadmium	42.431	1.0	49.98	0	84.9	75	125				
Chromium	53.541	1.0	49.98	9.227	88.7	75	125				
Cobalt	44.129	1.0	49.98	2.110	84.1	75	125				
Copper	56.605	2.0	49.98	4.924	103	75	125				
Lead	45.289	1.0	49.98	1.989	86.6	75	125				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010730-001C-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	45.554	1.0	49.98	0.2259	90.7	75	125				
Nickel	48.026	1.0	49.98	4.463	87.2	75	125				
Selenium	42.610	1.0	49.98	0	85.3	75	125				
Silver	51.574	1.0	49.98	0.4076	102	75	125				
Thallium	39.785	1.0	49.98	0	79.6	75	125				
Vanadium	57.322	1.0	49.98	11.18	92.3	75	125				
Zinc	54.951	1.0	49.98	14.63	80.7	75	125				

Sample ID: **N010777-021A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	3.685	1.0						3.366	9.06	20	
Barium	203.278	1.0						214.1	5.19	20	
Beryllium	0.243	1.0						0.2369	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	34.860	1.0						37.14	6.32	20	
Cobalt	11.301	1.0						11.76	3.98	20	
Copper	28.242	2.0						27.41	2.97	20	
Lead	19.344	1.0						20.85	7.50	20	
Molybdenum	0.386	1.0						0	0	20	
Nickel	61.182	1.0						62.25	1.73	20	
Selenium	1.147	1.0						1.194	4.03	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	34.802	1.0						35.34	1.54	20	
Zinc	78.161	1.0						74.32	5.04	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-021A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	16.601	2.0	50.18	0	33.1	75	125				S
Arsenic	46.104	1.0	50.18	3.366	85.2	75	125				
Barium	260.301	1.0	50.18	214.1	92.1	75	125				
Beryllium	41.802	1.0	50.18	0.2369	82.8	75	125				
Cadmium	40.357	1.0	50.18	0	80.4	75	125				
Chromium	84.894	1.0	50.18	37.14	95.2	75	125				
Cobalt	52.888	1.0	50.18	11.76	82.0	75	125				
Copper	81.140	2.0	50.18	27.41	107	75	125				
Lead	60.189	1.0	50.18	20.85	78.4	75	125				
Molybdenum	37.227	1.0	50.18	0	74.2	75	125				S
Nickel	118.033	1.0	50.18	62.25	111	75	125				
Selenium	37.018	1.0	50.18	1.194	71.4	75	125				S
Silver	39.583	1.0	50.18	0	78.9	75	125				
Thallium	37.536	1.0	50.18	0	74.8	75	125				S
Vanadium	83.770	1.0	50.18	35.34	96.5	75	125				
Zinc	120.926	1.0	50.18	74.32	92.9	75	125				

Sample ID: **N010777-021A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.448	2.0	49.93	0	37.0	75	125	16.60	10.5	20	S
Arsenic	46.261	1.0	49.93	3.366	85.9	75	125	46.10	0.341	20	
Barium	252.877	1.0	49.93	214.1	77.7	75	125	260.3	2.89	20	
Beryllium	43.427	1.0	49.93	0.2369	86.5	75	125	41.80	3.81	20	
Cadmium	40.198	1.0	49.93	0	80.5	75	125	40.36	0.396	20	
Chromium	81.257	1.0	49.93	37.14	88.4	75	125	84.89	4.38	20	
Cobalt	51.233	1.0	49.93	11.76	79.1	75	125	52.89	3.18	20	
Copper	74.051	2.0	49.93	27.41	93.4	75	125	81.14	9.14	20	
Lead	61.610	1.0	49.93	20.85	81.6	75	125	60.19	2.33	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-021A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89928**
Client ID: **ZZZZZZ** Batch ID: **43652** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/12/2013** SeqNo: **1631067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	37.977	1.0	49.93	0	76.1	75	125	37.23	1.99	20	
Nickel	97.965	1.0	49.93	62.25	71.5	75	125	118.0	18.6	20	S
Selenium	37.356	1.0	49.93	1.194	72.4	75	125	37.02	0.910	20	S
Silver	40.627	1.0	49.93	0	81.4	75	125	39.58	2.60	20	
Thallium	37.906	1.0	49.93	0	75.9	75	125	37.54	0.983	20	
Vanadium	82.219	1.0	49.93	35.34	93.9	75	125	83.77	1.87	20	
Zinc	111.251	1.0	49.93	74.32	74.0	75	125	120.9	8.33	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-43666** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **PBS** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.223	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	0.333	1.0									

Sample ID: **LCS-43666** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **LCSS** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.456	2.0	50.00	0	98.9	80	120				
Arsenic	48.420	1.0	50.00	0	96.8	80	120				
Barium	50.348	1.0	50.00	0	101	80	120				
Beryllium	48.358	1.0	50.00	0	96.7	80	120				
Cadmium	48.027	1.0	50.00	0	96.1	80	120				
Chromium	49.309	1.0	50.00	0	98.6	80	120				
Cobalt	48.165	1.0	50.00	0	96.3	80	120				
Copper	51.524	2.0	50.00	0	103	80	120				
Lead	50.180	1.0	50.00	0	100	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-43666** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **LCSS** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	51.669	1.0	50.00	0	103	80	120				
Nickel	47.621	1.0	50.00	0	95.2	80	120				
Selenium	41.834	1.0	50.00	0	83.7	80	120				
Silver	48.136	1.0	50.00	0	96.3	80	120				
Thallium	48.155	1.0	50.00	0	96.3	80	120				
Vanadium	50.514	1.0	50.00	0	101	80	120				
Zinc	46.889	1.0	50.00	0	93.8	80	120				

Sample ID: **N010777-020A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	2.676	1.0						2.649	1.00	20	
Barium	57.439	1.0						58.84	2.42	20	
Beryllium	0.255	1.0						0.2648	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	14.677	1.0						15.78	7.23	20	
Cobalt	8.417	1.0						9.170	8.57	20	
Copper	17.131	2.0						17.89	4.33	20	
Lead	4.512	1.0						4.675	3.55	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	14.828	1.0						14.76	0.436	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	31.426	1.0						30.07	4.40	20	
Zinc	32.707	1.0						31.83	2.72	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-020A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.295	2.0	50.00	0	42.6	75	125				S
Arsenic	45.040	1.0	50.00	2.649	84.8	75	125				
Barium	106.370	1.0	50.00	58.84	95.1	75	125				
Beryllium	42.743	1.0	50.00	0.2648	85.0	75	125				
Cadmium	40.798	1.0	50.00	0	81.6	75	125				
Chromium	58.619	1.0	50.00	15.78	85.7	75	125				
Cobalt	51.248	1.0	50.00	9.170	84.2	75	125				
Copper	69.004	2.0	50.00	17.89	102	75	125				
Lead	45.821	1.0	50.00	4.675	82.3	75	125				
Molybdenum	38.395	1.0	50.00	0	76.8	75	125				
Nickel	56.833	1.0	50.00	14.76	84.1	75	125				
Selenium	37.058	1.0	50.00	0	74.1	75	125				S
Silver	42.184	1.0	50.00	0	84.4	75	125				
Thallium	38.465	1.0	50.00	0	76.9	75	125				
Vanadium	77.533	1.0	50.00	30.07	94.9	75	125				
Zinc	72.744	1.0	50.00	31.83	81.8	75	125				

Sample ID: **N010777-020A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.282	2.0	50.00	0	42.6	75	125	21.30	0.0621	20	S
Arsenic	46.204	1.0	50.00	2.649	87.1	75	125	45.04	2.55	20	
Barium	101.402	1.0	50.00	58.84	85.1	75	125	106.4	4.78	20	
Beryllium	44.775	1.0	50.00	0.2648	89.0	75	125	42.74	4.64	20	
Cadmium	41.331	1.0	50.00	0	82.7	75	125	40.80	1.30	20	
Chromium	59.198	1.0	50.00	15.78	86.8	75	125	58.62	0.982	20	
Cobalt	51.264	1.0	50.00	9.170	84.2	75	125	51.25	0.0298	20	
Copper	66.003	2.0	50.00	17.89	96.2	75	125	69.00	4.44	20	
Lead	47.193	1.0	50.00	4.675	85.0	75	125	45.82	2.95	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
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Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010777-020A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2013** RunNo: **89964**
Client ID: **ZZZZZZ** Batch ID: **43666** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/13/2013** SeqNo: **1631229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	39.007	1.0	50.00	0	78.0	75	125	38.40	1.58	20	
Nickel	57.594	1.0	50.00	14.76	85.7	75	125	56.83	1.33	20	
Selenium	37.311	1.0	50.00	0	74.6	75	125	37.06	0.682	20	S
Silver	43.098	1.0	50.00	0	86.2	75	125	42.18	2.14	20	
Thallium	39.119	1.0	50.00	0	78.2	75	125	38.47	1.69	20	
Vanadium	77.000	1.0	50.00	30.07	93.9	75	125	77.53	0.689	20	
Zinc	73.526	1.0	50.00	31.83	83.4	75	125	72.74	1.07	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
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-43652**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **PBS**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **MB2-43652**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **PBS**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-43652**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **LCSS**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.669	5.0	50.00	0	97.3	80	120				

Sample ID: **N010730-001C-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **ZZZZZZ**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.992	5.0						1.989	0	20	

Sample ID: **N010730-001C-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **ZZZZZZ**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.289	5.0	49.98	1.989	86.6	75	125				

Qualifiers:

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **N010777-021A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **ZZZZZZ**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	19.344	5.0						20.85	7.50	20	

Sample ID: **N010777-021A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **ZZZZZZ**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	60.189	5.0	50.18	20.85	78.4	75	125				

Sample ID: **N010777-021A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89928**
Client ID: **ZZZZZZ**	Batch ID: **43652**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/12/2013**	SeqNo: **1631143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	61.610	5.0	49.93	20.85	81.6	75	125	60.19	2.33	20	

Qualifiers:

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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **LCS-43655**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **LCSS**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.448	0.10	0.4202	0	107	80	120				

Sample ID: **MB1-43655**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **PBS**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630240**

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

Sample ID: **MB2-43655**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **PBS**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630242**

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

Sample ID: **N010777-001A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **ZZZZZZ**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.122	0.10						0.1888	43.3	20	R

Sample ID: **N010777-001A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **ZZZZZZ**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.538	0.099	0.4105	0.1888	85.2	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **N010777-001A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **ZZZZZZ**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.518	0.10	0.4167	0.1888	78.9	75	125	0.5384	3.91	20	

Sample ID: **N010777-020A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **ZZZZZZ**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.062	0.099						0.07291	0	20	

Sample ID: **N010777-020A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/9/2013**	RunNo: **89947**
Client ID: **ZZZZZZ**	Batch ID: **43655**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/13/2013**	SeqNo: **1630266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.497	0.10	0.4188	0.07291	101	75	125				

Qualifiers:

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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **LCS-43656** SampType: **LCS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89948**
Client ID: **LCSS** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/13/2013** SeqNo: **1630295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.446	0.10	0.4209	0	106	80	120				

Sample ID: **MB1-43656** SampType: **MBLK** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89948**
Client ID: **PBS** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/13/2013** SeqNo: **1630297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.010									

Sample ID: **MB2-43656** SampType: **MBLK** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89948**
Client ID: **PBS** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/13/2013** SeqNo: **1630299**

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

Sample ID: **N010777-021A-DUP** SampType: **DUP** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89967**
Client ID: **ZZZZZZ** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/14/2013** SeqNo: **1631409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.253	0.099						0.2471	2.27	20	

Sample ID: **N010777-021A-MS** SampType: **MS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89967**
Client ID: **ZZZZZZ** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/14/2013** SeqNo: **1631410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.707	0.10	0.4202	0.2471	109	75	125				

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
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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **N010777-021A-MSD** SampType: **MSD** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89967**
Client ID: **ZZZZZZ** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/14/2013** SeqNo: **1631411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.705	0.10	0.4174	0.2471	110	75	125	0.7070	0.299	20	

Sample ID: **N010777-029A-MS** SampType: **MS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **8/9/2013** RunNo: **89967**
Client ID: **ZZZZZZ** Batch ID: **43656** TestNo: **EPA 7471A** **EPA 7471** Analysis Date: **8/14/2013** SeqNo: **1631412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.530	0.10	0.4174	0.2908	57.2	75	125				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
Calculations are based on raw values
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **LCS-43657**	SampType: **LCS**	TestCode: **8015_S_DM L**	Units: **mg/Kg**	Prep Date: **8/12/2013**	RunNo: **89940**
Client ID: **LCSS**	Batch ID: **43657**	TestNo: **EPA 8015B**	**EPA 3550B**	Analysis Date: **8/12/2013**	SeqNo: **1630139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	59.355	1.0	83.30	0	71.3	52	126				
Surr: p-Terphenyl	6.706		6.670		101	59	127				

Sample ID: **MB1-43657**	SampType: **MBLK**	TestCode: **8015_S_DM L**	Units: **mg/Kg**	Prep Date: **8/12/2013**	RunNo: **89940**
Client ID: **PBS**	Batch ID: **43657**	TestNo: **EPA 8015B**	**EPA 3550B**	Analysis Date: **8/12/2013**	SeqNo: **1630140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	6.364		6.670		95.4	59	127				

Sample ID: **N010777-002A-DUP**	SampType: **DUP**	TestCode: **8015_S_DM L**	Units: **mg/Kg**	Prep Date: **8/12/2013**	RunNo: **89940**
Client ID: **ZZZZZZ**	Batch ID: **43657**	TestNo: **EPA 8015B**	**EPA 3550B**	Analysis Date: **8/12/2013**	SeqNo: **1630142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	3.805	1.0						3.865	1.56	20	
ORO	9.080	1.0						8.054	12.0	20	
Surr: p-Terphenyl	6.128		6.688		91.6	59	127		0		

Sample ID: **N010777-002A-MS**	SampType: **MS**	TestCode: **8015_S_DM L**	Units: **mg/Kg**	Prep Date: **8/12/2013**	RunNo: **89940**
Client ID: **ZZZZZZ**	Batch ID: **43657**	TestNo: **EPA 8015B**	**EPA 3550B**	Analysis Date: **8/12/2013**	SeqNo: **1630152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	63.779	1.0	83.13	3.865	72.1	13	129				
Surr: p-Terphenyl	7.284		6.657		109	59	127				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **N010777-002A-MSD** SampType: **MSD** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/12/2013** RunNo: **89940**
Client ID: **ZZZZZZ** Batch ID: **43657** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/12/2013** SeqNo: **1630153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	60.560	1.0	83.16	3.865	68.2	13	129	63.78	5.18	20	
Surr: p-Terphenyl	6.803		6.659		102	59	127		0		

Sample ID: **MB2-43657** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/12/2013** RunNo: **89942**
Client ID: **PBS** Batch ID: **43657** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/12/2013** SeqNo: **1630175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	6.690		6.670		100	59	127				

Sample ID: **N010777-022A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/12/2013** RunNo: **89942**
Client ID: **ZZZZZZ** Batch ID: **43657** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/12/2013** SeqNo: **1630177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	8.717	1.0						11.09	24.0	20	R
ORO	21.214	1.0						25.65	18.9	20	
Surr: p-Terphenyl	5.228		6.674		78.3	59	127		0		

Sample ID: **N010777-022A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/12/2013** RunNo: **89942**
Client ID: **ZZZZZZ** Batch ID: **43657** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/12/2013** SeqNo: **1630181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	44.657	1.0	83.52	11.09	40.2	13	129				
Surr: p-Terphenyl	4.727		6.688		70.7	59	127				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130812LCS** SampType: **LCS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **LCSS** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.436	1.0	5.000	0	109	77	122				
Surr: Chlorobenzene - d5	94.744		100.0		94.7	51	136				

Sample ID: **E130812MB1** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **PBS** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.065	1.0									
Surr: Chlorobenzene - d5	91.051		100.0		91.1	51	136				

Sample ID: **N010777-002ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.058	1.0						0.05500	0	20	
Surr: Chlorobenzene - d5	68.641		100.0		68.6	51	136		0		

Sample ID: **N010777-001ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.053	1.0						0.05900	0	20	
Surr: Chlorobenzene - d5	86.314		100.0		86.3	51	136		0		

Sample ID: **N010777-001AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.432	1.0	5.000	0.05900	87.5	41	132				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **N010777-001AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	77.120		100.0		77.1	51	136				

Sample ID: **N010777-001AMSD** SampType: **MSD** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.493	1.0	5.000	0.05900	88.7	41	132	4.432	1.37	20	
Surr: Chlorobenzene - d5	70.686		100.0		70.7	51	136		0		

Sample ID: **E130812MB2** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **PBS** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.068	1.0									
Surr: Chlorobenzene - d5	92.627		100.0		92.6	51	136				

Sample ID: **N010777-011AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89938**
Client ID: **ZZZZZZ** Batch ID: **E13VS082** TestNo: **EPA 8015B** Analysis Date: **8/12/2013** SeqNo: **1629971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.088	1.0	5.000	0.07000	80.4	41	132				
Surr: Chlorobenzene - d5	76.502		100.0		76.5	51	136				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130813LCS** SampType: **LCS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **LCSS** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630703**

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	77	122				
Surr: Chlorobenzene - d5	94.275		100.0		94.3	51	136				

Sample ID: **E130813MB1** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **PBS** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.072	1.0									
Surr: Chlorobenzene - d5	90.713		100.0		90.7	51	136				

Sample ID: **N010777-021AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.586	1.0	5.000	0.05700	90.6	41	132				
Surr: Chlorobenzene - d5	77.438		100.0		77.4	51	136				

Sample ID: **N010777-021AMSD** SampType: **MSD** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.560	1.0	5.000	0.05700	90.1	41	132	4.586	0.569	20	
Surr: Chlorobenzene - d5	79.033		100.0		79.0	51	136		0		

Sample ID: **N010777-027ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.057	1.0						0.06400	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **N010777-027ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	88.275		100.0		88.3	51	136		0		

Sample ID: **E130813MB2** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **PBS** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1630717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.054	1.0									
Surr: Chlorobenzene - d5	95.379		100.0		95.4	51	136				

Sample ID: **N010777-022ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1631048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.055	1.0						0.06800	0	20	
Surr: Chlorobenzene - d5	101.137		100.0		101	51	136		0		

Sample ID: **N010777-020AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89958**
Client ID: **ZZZZZZ** Batch ID: **E13VS083** TestNo: **EPA 8015B** Analysis Date: **8/13/2013** SeqNo: **1631049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.336	1.0	5.000	0.05300	106	41	132				
Surr: Chlorobenzene - d5	92.646		100.0		92.6	51	136				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **N010777-002A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **89927**
Client ID: **ZZZZZZ** Batch ID: **R89927** TestNo: **EPA 9045C** Analysis Date: **8/9/2013** SeqNo: **1629464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.220	0.10						7.980	2.96	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

Sample ID: **N010777-024A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **89927**
Client ID: **ZZZZZZ** Batch ID: **R89927** TestNo: **EPA 9045C** Analysis Date: **8/9/2013** SeqNo: **1629476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.380	0.10						8.420	0.476	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
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
Las Vegas NV
3275 ~~Walnut Ave, Signal Hill, CA 90755~~
Tel: (562) ~~989-4045~~ • Fax: (562) ~~989-4040~~

P.O.#: _____ Quote #: _____

Logged By: MMC Date: 8/9/13

NOTE: Please include your Quote No. to ensure proper pricing of your project.

Method of Transport
☐ Client ☐ ATL
☐ FedEx ☐ OnTrac
☐ GSO
☐ Other: _____

FOR LABORATORY USE ONLY:

4.3°C ICE IR#2 Sample Condition Upon Receipt

1. CHILLED	Y☐ N☐	4. CUSTODY SEAL	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

Client: Geocon Consultants, Inc. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: LuannBeadle/RickDay City Livemore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: SR-4/242 TOS Project #: E8560-02-54 Sampler: L.Beadle/C.Merritt (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name)	Date: 8-8-13	Time: GSO	Received by: (Signature and Printed Name)		Date: 8/9/13	Time: 0850
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Luann Beadle 8-8-13
Print Name Date
Signature

Send Report To:
Attn: same
Co: beadle@geoconinc.com
Addr: day@geoconinc.com
City: State: Zip:

Bill To:
Attn: same
Co:
Addr:
City: State: Zip:

Special Instructions/Comments:
see p3

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

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

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO)	8015B (DRO)	TITLE 22 / CAM 17 (6010 / 7000)	pH	SEDIMENT	SOLID	SOIL	DRINKING WATER	GROUND WATER	WASTEWATER	STORMWATER	AQUEOUS	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	ND10777-1	R1-0	8/8/13	0830					X		X				X							D	1	S T	C	
	-2	R1-1		0840						X	X															
	-3	R2-0		0825																						
	-4	R2-1		0835						X	X															
	-5	R3-0		0915																						
	-6	R3-1		0925						X	X															
	-7	R4-0		0910																						
	-8	R4-1		0915						X	X															
	-9	R7-0		0940																						
	-10	R7-1		0945					X	X	X				X							D	1	S T	C	

• TAT starts 8 a.m. following day if samples received after 5 p.m.

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

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

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

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
Las Vegas NV
3275 ~~Walnut Ave., Signal Hill, CA~~ 90755
Tel: ~~(562) 989-4045~~ • Fax: ~~(562) 989-4040~~

P.O.#: _____ Quote #: _____

Logged By: _____ Date: _____

NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport
☐ Client ☐ ATL
☐ FedEx ☐ OnTrac
☐ GSO
☐ Other: _____

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

Client: **Geocon Consultants, Inc.** Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Luann Beadle/Ride Day City Livermore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: SR-4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) L. Beadle/C. Merritt (Signature) Luann Beadle

Relinquished by: (Signature and Printed Name) Luann Beadle Date: 8-8-13 Time: GSO delivery Received by: (Signature and Printed Name) MECARTIN Date: 8/9/13 Time: 0850
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Luann Beadle (Print Name) 8-8-13 (Date)
Luann Beadle (Signature)

Send Report To:
Attn: beadle@geoconinc.com
Co: day@geoconinc.com
Addr: _____
City: State: Zip:

Bill To:
Attn: same
Co: _____
Addr: _____
City: State: Zip:

Special Instructions/Comments:
see p 3

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.
Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX: SEDIMENT, SOLID, SOIL, DRINKING WATER, GROUND WATER, WASTEWATER, STORMWATER, AQUEOUS

PRESERVATION

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

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	8010B (Total Metal)	8015B (GRO) / 8021 (BTEX)	8015B (DRO) + H2O	TITLE 22 / CAM 17 (6010 / 7000)	pH	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	N010777-11	R8-0	8-8-13	0940					X	X	X			D	1	S	C	
	-12	R8-1		0945						X	X					T		
	-13	R11-0		1015														
	-14	R11-1		1025						X	X							
	-15	R12-0		1015														
	-16	R12-1		1020						X	X							
	-17	R15-0		1055														
	-18	R15-1		1100						X	X							
	-19	R16-0		1055														
	-20	R16-1		1100						X	X							

• TAT starts 8 a.m. following day if samples received after 5 p.m.

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

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

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

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
Las Vegas NV
3275 Walnut Ave, Signal Hill, CA 90755
Tel: (562) 989-4045 Fax: (562) 989-4040

P.O.#: _____ Quote #: _____

Logged By: _____ Date: _____

NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport
☐ Client ☐ ATL
☐ FedEx ☐ OnTrac
☐ GSO
☐ Other: _____

Sample Condition Upon Receipt

1. CHILLED	Y☐ N☐	4. CUSTODY SEAL	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

Client: Geocon Consultants, Inc. | Address: 6671 Brisa Street | TEL: (925) 371-5900
Attn: Luann Beadle / Rick Day | City Livermore State CA Zip Code 94550 | FAX: (925) 371-5915

Project Name: SR-4/242 TOS Project #: E8500-02-54 Sampler: (Printed Name) Luann Beadle (Signature) Luann Beadle

Relinquished by: (Signature and Printed Name) Luann Beadle Date: 8-8-13 Time: GSO delivery Received by: (Signature and Printed Name) MIB CARLTON Date: 8/9/13 Time: 0850

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Luann Beadle 8-8-13 (Print Name / Date)
Luann Beadle (Signature)

Send Report To:
Attn: Beadle@geoconinc.com
Co: Day@geoconinc.com
Addr: _____
City: State: Zip:

Bill To:
Attn: Same
Co: _____
Addr: _____
City: State: Zip:

Special Instructions/Comments:
Please Hold all CCTV5 samples. Analyses instructions to follow 8-9-13 am before sample receipt

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) *8021 (BTEX)	8015B (DRO) *3M0	TITLE 22 / CAM 17 (6010 / 7000)	pH	SEDIMENT	SOLID	SOIL	DRINKING WATER	GROUND WATER	WASTEWATER	STORMWATER	AQUEOUS	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	N010777-21	R21-0	8-8-13	1135					X		X	X				X							D	1	S T C		
	-22	R21-1		1140					X		X	X															
	-23	R22-0		1200					X		X	X															
	-24	R22-1		1205					X		X	X															
	-25	CCTV5-0		1230																							Hold
	-26	CCTV5-1		1235																							Hold
	-27	CCTV5-2.5		1240																							Hold
	-28	CCTV5-5.5		1245																							Hold
	-29	CCTV5-8.5		1250																							Hold

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

- TAT starts 8 a.m. following day if samples received after 5 p.m.

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

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

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

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	8/9/2013	Workorder:	N010777
Rep sample Temp (Deg C):	4.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	GSO		
Last 4 digits of Tracking No.:	8415	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☐	NA ☑
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By MBC MBC 8/12/2013

Reviewed By: ergpunzalan

GSO GOLDEN STATE OVERNIGHT

WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
GEOCON - LIVERMORE OFFICE
GEOCON, INC.
6671 BRISA STREET
LIVERMORE, CA 94550

Ship To:
SAMPLE RECEIVING
ADVANCED TECHNOLOGY LABS - LAS VEGAS
3151 W. POST ROAD
LAS VEGAS, NV 89118

COD:
$0.00

Reference:
E8560-02-54

Delivery Instructions:
ONE LARGE HEAVY ICE CHESTS

Signature Type:
SIGNATURE REQUIRED

Tracking #: 522468415

PDS

LVS

LAS VEGAS

D89103A

14844416

Print Date : 08/08/13 15:44 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Marlon Cartin

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, August 09, 2013 1:25 PM
To: Marlon Cartin
Subject: FW: E8560-02-54 Analysis

Sorry, but to clarify for the record: Don't do the NOA samples (they went to another lab) but do everything else marked with an "x"

Thanks again,
Luann

From: Luann Beadle [mailto:beadle@geoconinc.com]
Sent: Friday, August 09, 2013 1:22 PM
To: Marlon Cartin (marlon@atl-labs.com)
Subject: E8560-02-54 Analysis

Hi Marlon,

Per our phone conversation, please analyze location CCTV5 samples for the following:

Sample ID	Sample Depth	NOA	CAM 17 Metals	pH	Total Lead	TPHg
CCTV5-0	0 to 0.5	X	---	---	X	---
CCTV5-1	1 to 1.5	X	---	---	X	X
CCTV5-2.5	2.5 to 3	---	X	X	---	X
CCTV5-5.5	5.5 to 6	X	---	---	X	---
CCTV5-8.5	8.5 to 9	X	X	---	---	---

On a 72-hr TAT.

Thanks, Luann

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

August 22, 2013

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-009222007A

Workorder No.: N010777

RE: SR-4/242 TDS, E8560-02-54

Attention: Luann Beadle

Enclosed are the results for sample(s) received on August 09, 2013 by Advanced Technology Laboratories, Inc. . 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:30:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130821B	QC Batch: R90065			PrepDate:		Analyst: **CEI**
Lead	34	0.050		mg/L	5	8/21/2013 01:30 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R2-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:25:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-003A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY TCLP EXTRACTION						
	EPA 3010A			**EPA 1311/ 6010B**		
RunID: ICP2_130821A	QC Batch: 43723			PrepDate: 8/20/2013	Analyst: **CEI**	
Lead	0.97	0.25		mg/L	1	8/21/2013 10:26 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R7-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-009A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY WET EXTRACTION						
		WET/ EPA 7470A				
RunID: AA1_130821B	QC Batch: 43733			PrepDate: 8/21/2013		Analyst: **LCC**
Mercury	ND	0.20		µg/L	1	8/21/2013

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R7-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-010A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY WET EXTRACTION						
		WET/ EPA 7470A				
RunID: AA1_130821B	QC Batch: 43733			PrepDate: 8/21/2013		Analyst: **LCC**
Mercury	1.4	0.20		µg/L	1	8/21/2013

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-011A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130821B	QC Batch: R90065			PrepDate:		Analyst: **CEI**
Lead	25	0.050		mg/L	5	8/21/2013 01:16 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-1
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:45:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-012A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130821B	QC Batch: R90065			PrepDate:		Analyst: **CEI**
Lead	2.5	0.050		mg/L	5	8/21/2013 12:50 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R16-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 10:55:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-019A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130821B	QC Batch: R90065			PrepDate:		Analyst: **CEI**
Lead	3.0	0.050		mg/L	5	8/21/2013 01:12 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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **MB-R90065**	SampType: **MBLK**	TestCode: **6010_ST**	Units: **mg/L**	Prep Date:	RunNo: **90065**
Client ID: **PBS**	Batch ID: **R90065**	TestNo: **WET/ EPA 60**		Analysis Date: **8/21/2013**	SeqNo: **1636307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.010									

Sample ID: **LCS-R90065**	SampType: **LCS**	TestCode: **6010_ST**	Units: **mg/L**	Prep Date:	RunNo: **90065**
Client ID: **LCSS**	Batch ID: **R90065**	TestNo: **WET/ EPA 60**		Analysis Date: **8/21/2013**	SeqNo: **1636308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.524	0.010	0.5000	0	105	85	115				

Sample ID: **MB-43715 STLC**	SampType: **MBLK**	TestCode: **6010_ST**	Units: **mg/L**	Prep Date:	RunNo: **90065**
Client ID: **PBS**	Batch ID: **R90065**	TestNo: **WET/ EPA 60**		Analysis Date: **8/21/2013**	SeqNo: **1636309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									

Sample ID: **N010777-012A-DUP**	SampType: **DUP**	TestCode: **6010_ST**	Units: **mg/L**	Prep Date:	RunNo: **90065**
Client ID: **ZZZZZZ**	Batch ID: **R90065**	TestNo: **WET/ EPA 60**		Analysis Date: **8/21/2013**	SeqNo: **1636311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.394	0.050						2.470	3.14	20	

Sample ID: **N010777-012A-MS**	SampType: **MS**	TestCode: **6010_ST**	Units: **mg/L**	Prep Date:	RunNo: **90065**
Client ID: **ZZZZZZ**	Batch ID: **R90065**	TestNo: **WET/ EPA 60**		Analysis Date: **8/21/2013**	SeqNo: **1636313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.875	0.050	2.500	2.470	96.2	75	125				

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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **N010777-012A-MSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90065**
Client ID: **ZZZZZZ** Batch ID: **R90065** TestNo: **WET/ EPA 60** Analysis Date: **8/21/2013** SeqNo: **1636314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.840	0.050	2.500	2.470	94.8	75	125	4.875	0.723	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **MB-43723**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **PBS**	Batch ID: **43723**	TestNo: **EPA 1311/ 60**	**EPA 3010A**	Analysis Date: **8/21/2013**	SeqNo: **1636826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-43714_TC1**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **PBS**	Batch ID: **43723**	TestNo: **EPA 1311/ 60**	**EPA 3010A**	Analysis Date: **8/21/2013**	SeqNo: **1636827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-43714_TC2**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **PBS**	Batch ID: **43723**	TestNo: **EPA 1311/ 60**	**EPA 3010A**	Analysis Date: **8/21/2013**	SeqNo: **1636828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-43723**	SampType: **LCS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **LCSS**	Batch ID: **43723**	TestNo: **EPA 1311/ 60**	**EPA 3010A**	Analysis Date: **8/21/2013**	SeqNo: **1636829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.538	0.25	0.5000	0	108	85	115				

Sample ID: **N010777-003A-DUP**	SampType: **DUP**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **ZZZZZZ**	Batch ID: **43723**	TestNo: **EPA 1311/ 60**	**EPA 3010A**	Analysis Date: **8/21/2013**	SeqNo: **1636831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.069	0.25						0.9652	10.2	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **N010810-003B-MS**	SampType: **MS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **ZZZZZZ**	Batch ID: **43723**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/21/2013**	SeqNo: **1636839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.572	0.25	0.5000	0	114	75	125				

Sample ID: **N010810-003B-MSD**	SampType: **MSD**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/20/2013**	RunNo: **90064**
Client ID: **ZZZZZZ**	Batch ID: **43723**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/21/2013**	SeqNo: **1636840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.562	0.25	0.5000	0	112	75	125	0.5716	1.75	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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_ST

Sample ID: **LCS-43733** SampType: **LCS** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **LCSS** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.483	0.20	5.000	0	110	85	115				

Sample ID: **MB-43715 STLC** SampType: **MBLK** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **PBS** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **MB-43733** SampType: **MBLK** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **PBS** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N010777-012A-DUP** SampType: **DUP** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **ZZZZZZ** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.829	0.80						0.5309	43.9	20	R

Sample ID: **N010829-001A-MS** SampType: **MS** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **ZZZZZZ** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.413	0.20	5.000	0	108	70	130				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_ST

Sample ID: **N010829-001A-MSD** SampType: **MSD** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/21/2013** RunNo: **90063**
Client ID: **ZZZZZZ** Batch ID: **43733** TestNo: **WET/ EPA 74** Analysis Date: **8/21/2013** SeqNo: **1636233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.519	0.20	5.000	0	110	70	130	5.413	1.94	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Glen S. Gesmundo

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, August 16, 2013 11:04 AM
To: Advanced Technology Labs, Inc.
Cc: Ramin.Behani@dot.ca.gov
Subject: Lab Order N010777

Hi ATL,

Please analyze the following samples for WET lead or mercury as indicated:

R16-0	Lead	58
R8-1	Lead	64
R8-0	Lead	370
R1-0	Lead	480
R7-0	Mercury	3.8
R7-1	Mercury	9.1

Also, please analyze this sample for TCLP lead:

R2-0	Lead	1400

72-hr TAT, please.

Thanks,

Luann

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

August 28, 2013

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-009222007A

Workorder No.: N010777

RE: SR-4/242 TDS, E8560-02-54

Attention: Luann Beadle

Enclosed are the results for sample(s) received on August 09, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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,

for

Jose Tenorio Jr.
Laboratory Director

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:30:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY WET DI EXTRACTION						
		WET DI/ EPA 6010B				
RunID: ICP2_130827A	QC Batch: R90133			PrepDate:		Analyst: **JT**
Lead	ND	0.25		mg/L	1	8/27/2013 02:45 PM
LEAD BY TCLP EXTRACTION						
	EPA 3010A			**EPA 1311/ 6010B**		
RunID: ICP2_130827A	QC Batch: 43769			PrepDate:	8/27/2013	Analyst: **JT**
Lead	0.27	0.25		mg/L	1	8/27/2013 03:54 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-011		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY WET DI EXTRACTION						
		WET DI/ EPA 6010B				
RunID: ICP2_130827A	QC Batch: R90133			PrepDate:		Analyst: **JT**
Lead	ND	0.25		mg/L	1	8/27/2013 02:49 PM
LEAD BY TCLP EXTRACTION						
	EPA 3010A			**EPA 1311/ 6010B**		
RunID: ICP2_130827A	QC Batch: 43769			PrepDate:	8/27/2013	Analyst: **JT**
Lead	0.42	0.25		mg/L	1	8/27/2013 04:03 PM

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

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDIPB

Sample ID: **MB-R90133**	SampType: **MBLK**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **PBW**	Batch ID: **R90133**	TestNo: **WET DI/ EPA**		Analysis Date: **8/27/2013**	SeqNo: **1638416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-R90133**	SampType: **LCS**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **LCSW**	Batch ID: **R90133**	TestNo: **WET DI/ EPA**		Analysis Date: **8/27/2013**	SeqNo: **1638417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.502	0.25	0.5000	0	100	85	115				

Sample ID: **MB-43757**	SampType: **MBLK**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **PBW**	Batch ID: **R90133**	TestNo: **WET DI/ EPA**		Analysis Date: **8/27/2013**	SeqNo: **1638418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **N010777-011A-DUP**	SampType: **DUP**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **R90133**	TestNo: **WET DI/ EPA**		Analysis Date: **8/27/2013**	SeqNo: **1638421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.034	0.25						0.03139	0	20	

Sample ID: **N010777-011A-MS**	SampType: **MS**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **R90133**	TestNo: **WET DI/ EPA**		Analysis Date: **8/27/2013**	SeqNo: **1638423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.059	0.50	1.000	0.03139	103	75	125				

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDIPB

Sample ID: **N010777-011A-MSD** SampType: **MSD** TestCode: **6010_STDIPB** Units: **mg/L** Prep Date: RunNo: **90133**
Client ID: **ZZZZZZ** Batch ID: **R90133** TestNo: **WET DI/ EPA** Analysis Date: **8/27/2013** SeqNo: **1638424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.043	0.50	1.000	0.03139	101	75	125	1.059	1.52	20	

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **MB-43769**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **PBS**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB2-43769**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date:	RunNo: **90133**
Client ID: **PBS**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-43763_TC**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **PBS**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.004	0.25									

Sample ID: **LCS-43769**	SampType: **LCS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **LCSS**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.026	0.25	1.000	0	103	85	115				

Sample ID: **N010777-001A-DUP**	SampType: **DUP**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.247	0.25						0.2750	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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **N010847-002C-MS**	SampType: **MS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.925	0.25	1.000	0	92.5	75	125				

Sample ID: **N010847-002C-MSD**	SampType: **MSD**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.918	0.25	1.000	0	91.8	75	125	0.9248	0.696	20	

Sample ID: **N010848-002C-MS**	SampType: **MS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/27/2013**	RunNo: **90133**
Client ID: **ZZZZZZ**	Batch ID: **43769**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/27/2013**	SeqNo: **1638497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.928	0.25	1.000	0	92.8	75	125				

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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Nancy Sibucao

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, August 23, 2013 2:12 PM
To: Advanced Technology Labs, Inc.
Subject: Lab Order N010777-001A and -011A TO-54 WETs

Hi ATL,

Could you please run the following analyses on a 72-hr TAT?

DI-WET and TCLP lead on R1-0 and R8-0

Thanks,
Luann

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

September 09, 2013

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-009222007A

Workorder No.: N010777

RE: SR-4/242 TDS, E8560-02-54

Attention: Luann Beadle

Enclosed are the results for sample(s) received on August 09, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R1-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 8:30:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
		EPA 9045C				
RunID: WETCHEM_130906B	QC Batch: R90223			PrepDate:		Analyst: **LCC**
pH	7.6	0.10		pH Units	1	9/6/2013
Temp. at time of pH Analysis	25	0		pH Units	1	9/6/2013

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R8-0
Lab Order:	N010777	**Collection Date:**	8/8/2013 9:40:00 AM
Project:	SR-4/242 TDS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010777-011A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
		EPA 9045C				
RunID: WETCHEM_130906B	QC Batch: R90223			PrepDate:		Analyst: **LCC**
pH	7.0	0.10		pH Units	1	9/6/2013
Temp. at time of pH Analysis	25	0		pH Units	1	9/6/2013

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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010777
Project: SR-4/242 TDS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **N010777-001A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **90223**
Client ID: **ZZZZZZ** Batch ID: **R90223** TestNo: **EPA 9045C** Analysis Date: **9/6/2013** SeqNo: **1642805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.570	0.10						7.640	0.920	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
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Glen S. Gesmundo

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, September 06, 2013 9:45 AM
To: Advanced Technology Labs, Inc.
Subject: Lab Order N010777 (TO-54)

Hi ATL,
Could you please run pH on samples R1-0 and R8-0 from this lab order on a 72-hr TAT?
Thanks,
Luann

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

August 20, 2013

Chris Merritt
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N010801

RE: Caltrans SR4/242 TOS, E8560-02-54

Attention: Chris Merritt

Enclosed are the results for sample(s) received on August 14, 2013 by Advanced Technology Laboratories, Inc. . 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

CLIENT: Geocon Consultants, Inc.
Project: Caltrans SR4/242 TOS, E8560-02-54
Lab Order: N010801

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria on QC samples N010801-001A-MS, N010801-017A-MS, N010801-078A-MS, N010802-001A-MS, N010801-001A-MSD, N010801-017A-MSD, N010801-078A-MSD and N010802-001A-MSD for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Sample Duplicate (DUP) is outside criteria for some analytes on samples N010801-002A-DUP, N010801-018A-DUP, N010801-069A-DUP, N010801-082A-DUP and N010802-002A-DUP possibly due to non-homogeneity of sample; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Analytical Comments for EPA 7471A:

Matrix Spike (MS) is outside recovery criteria on QC sample N010801-065A-MS possibly due to non-homogeneity of sample.

RPD for Sample Duplicate (DUP) N010802-004A-DUP is outside criteria possibly due to non-homogeneity of sample.

Analytical Comments for EPA 8015B GRO:

Surrogate recovery was below the laboratory acceptable limit for sample N010801-067 possibly due to matrix effect. Sample form bubbles when purged.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT:	Geocon Consultants, Inc.
Project:	Caltrans SR4/242 TOS, E8560-02-54
Lab Order:	N010801

CASE NARRATIVE

Analytical Comments for EPA 8015B DRO/ORO:

RPD for Sample Duplicate (DUP) N010801-044A-DUP and N010801-076A-DUP is outside criteria possibly due to non-homogeneity of sample.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *20-Aug-13*

CLIENT: Geocon Consultants, Inc.
Project: Caltrans SR4/242 TOS, E8560-02-54
Lab Order: N010801
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N010801-001A	EMS1-0	Soil	8/12/2013 9:30:00 AM	8/14/2013	8/20/2013
N010801-002A	EMS1-1	Soil	8/12/2013 9:35:00 AM	8/14/2013	8/20/2013
N010801-003A	EMS1-2.5	Soil	8/12/2013 9:35:00 AM	8/14/2013	8/20/2013
N010801-004A	EMS1-5.5	Soil	8/12/2013 9:40:00 AM	8/14/2013	8/20/2013
N010801-005A	EMS1-11.5	Soil	8/12/2013 9:55:00 AM	8/14/2013	8/20/2013
N010801-006A	EMS1-15.5	Soil	8/12/2013 10:00:00 AM	8/14/2013	8/20/2013
N010801-007A	CCTV6-0	Soil	8/12/2013 3:25:00 PM	8/14/2013	8/20/2013
N010801-008A	CCTV6-1	Soil	8/12/2013 3:30:00 PM	8/14/2013	8/20/2013
N010801-009A	CCTV6-2.5	Soil	8/12/2013 3:30:00 PM	8/14/2013	8/20/2013
N010801-010A	CCTV6-5.5	Soil	8/12/2013 3:35:00 PM	8/14/2013	8/20/2013
N010801-011A	EMS2-0	Soil	8/12/2013 10:30:00 AM	8/14/2013	8/20/2013
N010801-012A	EMS2-1	Soil	8/12/2013 10:30:00 AM	8/14/2013	8/20/2013
N010801-013A	EMS2-2.5	Soil	8/12/2013 10:35:00 AM	8/14/2013	8/20/2013
N010801-014A	EMS2-5.5	Soil	8/12/2013 10:40:00 AM	8/14/2013	8/20/2013
N010801-015A	EMS2-11.5	Soil	8/12/2013 10:55:00 AM	8/14/2013	8/20/2013
N010801-016A	EMS2-15.5	Soil	8/12/2013 11:00:00 AM	8/14/2013	8/20/2013
N010801-017A	CMS1-0	Soil	8/12/2013 3:05:00 PM	8/14/2013	8/20/2013
N010801-018A	CMS1-1	Soil	8/12/2013 3:10:00 PM	8/14/2013	8/20/2013
N010801-019A	CMS1-2.5	Soil	8/12/2013 3:15:00 PM	8/14/2013	8/20/2013
N010801-020A	CMS1-5.5	Soil	8/12/2013 3:20:00 PM	8/14/2013	8/20/2013
N010801-021A	CCTV7-0	Soil	8/12/2013 2:15:00 PM	8/14/2013	8/20/2013
N010801-022A	CCTV7-1	Soil	8/12/2013 2:15:00 PM	8/14/2013	8/20/2013
N010801-023A	CCTV7-2.5	Soil	8/12/2013 2:20:00 PM	8/14/2013	8/20/2013
N010801-024A	CCTV7-5.5	Soil	8/12/2013 2:25:00 PM	8/14/2013	8/20/2013
N010801-025A	CCTV7-8.5	Soil	8/12/2013 2:30:00 PM	8/14/2013	8/20/2013
N010801-026A	CCTV9-0	Soil	8/12/2013 12:40:00 PM	8/14/2013	8/20/2013
N010801-027A	CCTV9-1	Soil	8/12/2013 12:45:00 PM	8/14/2013	8/20/2013
N010801-028A	CCTV9-2.5	Soil	8/12/2013 12:50:00 PM	8/14/2013	8/20/2013
N010801-029A	CCTV9-5.5	Soil	8/12/2013 12:50:00 PM	8/14/2013	8/20/2013

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Project: Caltrans SR4/242 TOS, E8560-02-54
Lab Order: N010801
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N010801-030A	CCTV9-8.5	Soil	8/12/2013 12:55:00 PM	8/14/2013	8/20/2013
N010801-031A	CCTV3-0	Soil	8/12/2013 8:35:00 AM	8/14/2013	8/20/2013
N010801-032A	CCTV3-1	Soil	8/12/2013 8:40:00 AM	8/14/2013	8/20/2013
N010801-033A	CCTV3-2.5	Soil	8/12/2013 8:45:00 AM	8/14/2013	8/20/2013
N010801-034A	CCTV3-5.5	Soil	8/12/2013 8:50:00 AM	8/14/2013	8/20/2013
N010801-035A	CCTV3-8.5	Soil	8/12/2013 9:00:00 AM	8/14/2013	8/20/2013
N010801-036A	CCTV4-0	Soil	8/12/2013 11:55:00 AM	8/14/2013	8/20/2013
N010801-037A	CCTV4-1	Soil	8/12/2013 12:00:00 PM	8/14/2013	8/20/2013
N010801-038A	CCTV4-2.5	Soil	8/12/2013 12:00:00 PM	8/14/2013	8/20/2013
N010801-039A	CCTV4-5.5	Soil	8/12/2013 12:05:00 PM	8/14/2013	8/20/2013
N010801-040A	CCTV4-8.5	Soil	8/12/2013 12:10:00 PM	8/14/2013	8/20/2013
N010801-041A	CCTV12-0	Soil	8/12/2013 1:20:00 PM	8/14/2013	8/20/2013
N010801-042A	CCTV12-1	Soil	8/12/2013 1:25:00 PM	8/14/2013	8/20/2013
N010801-043A	CCTV12-2.5	Soil	8/12/2013 1:30:00 PM	8/14/2013	8/20/2013
N010801-044A	CCTV12-5.5	Soil	8/12/2013 1:30:00 PM	8/14/2013	8/20/2013
N010801-045A	CCTV12-8.5	Soil	8/12/2013 1:35:00 PM	8/14/2013	8/20/2013
N010801-046A	CCTV13-0	Soil	8/13/2013 10:30:00 AM	8/14/2013	8/20/2013
N010801-047A	CCTV13-1	Soil	8/13/2013 10:35:00 AM	8/14/2013	8/20/2013
N010801-048A	CCTV13-2.5	Soil	8/13/2013 10:35:00 AM	8/14/2013	8/20/2013
N010801-049A	CCTV13-5.5	Soil	8/13/2013 10:40:00 AM	8/14/2013	8/20/2013
N010801-050A	CCTV13-8.5	Soil	8/13/2013 10:45:00 AM	8/14/2013	8/20/2013
N010801-051A	CCTV1-0	Soil	8/13/2013 11:30:00 AM	8/14/2013	8/20/2013
N010801-052A	CCTV1-1	Soil	8/13/2013 11:35:00 AM	8/14/2013	8/20/2013
N010801-053A	CCTV2-0	Soil	8/13/2013 11:10:00 AM	8/14/2013	8/20/2013
N010801-054A	CCTV2-1	Soil	8/13/2013 11:15:00 AM	8/14/2013	8/20/2013
N010801-055A	CCTV10-0	Soil	8/13/2013 8:40:00 AM	8/14/2013	8/20/2013
N010801-056A	CCTV10-1	Soil	8/13/2013 8:45:00 AM	8/14/2013	8/20/2013
N010801-057A	CCTV10-2.5	Soil	8/13/2013 8:50:00 AM	8/14/2013	8/20/2013
N010801-058A	R5-0	Soil	8/12/2013 1:50:00 PM	8/14/2013	8/20/2013
N010801-059A	R5-1	Soil	8/12/2013 1:59:00 PM	8/14/2013	8/20/2013

CLIENT: Geocon Consultants, Inc.
Project: Caltrans SR4/242 TOS, E8560-02-54
Lab Order: N010801
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N010801-060A	EB3	Water	8/12/2013	8/14/2013	8/20/2013
N010801-061A	R6-0	Soil	8/12/2013 2:16:00 PM	8/14/2013	8/20/2013
N010801-062A	R6-1	Soil	8/12/2013 2:21:00 PM	8/14/2013	8/20/2013
N010801-063A	R9-0	Soil	8/12/2013 1:11:00 PM	8/14/2013	8/20/2013
N010801-064A	R9-1	Soil	8/12/2013 1:19:00 PM	8/14/2013	8/20/2013
N010801-065A	R10-0	Soil	8/12/2013 1:30:00 PM	8/14/2013	8/20/2013
N010801-066A	R10-1	Soil	8/12/2013 1:40:00 PM	8/14/2013	8/20/2013
N010801-067A	R13-0	Soil	8/12/2013 12:45:00 PM	8/14/2013	8/20/2013
N010801-068A	R13-1	Soil	8/12/2013 12:50:00 PM	8/14/2013	8/20/2013
N010801-069A	R14-0	Soil	8/12/2013 12:55:00 PM	8/14/2013	8/20/2013
N010801-070A	R14-1	Soil	8/12/2013 1:00:00 PM	8/14/2013	8/20/2013
N010801-071A	R17-0	Soil	8/12/2013 12:20:00 PM	8/14/2013	8/20/2013
N010801-072A	R17-1	Soil	8/12/2013 12:25:00 PM	8/14/2013	8/20/2013
N010801-073A	R18-0	Soil	8/12/2013 12:30:00 PM	8/14/2013	8/20/2013
N010801-074A	R18-1	Soil	8/12/2013 12:35:00 PM	8/14/2013	8/20/2013
N010801-075A	R19-0	Soil	8/12/2013 11:44:00 AM	8/14/2013	8/20/2013
N010801-076A	R19-1	Soil	8/12/2013 11:49:00 AM	8/14/2013	8/20/2013
N010801-077A	R20-0	Soil	8/12/2013 12:00:00 PM	8/14/2013	8/20/2013
N010801-078A	R20-1	Soil	8/12/2013 12:05:00 PM	8/14/2013	8/20/2013
N010801-079A	EB4	Water	8/13/2013	8/14/2013	8/20/2013
N010801-080A	CCTV14-0	Soil	8/13/2013 9:35:00 AM	8/14/2013	8/20/2013
N010801-081A	CCTV14-1	Soil	8/13/2013 9:40:00 AM	8/14/2013	8/20/2013
N010801-082A	CCTV14-2.5	Soil	8/13/2013 9:40:00 AM	8/14/2013	8/20/2013
N010801-083A	CCTV14-5.5	Soil	8/13/2013 9:45:00 AM	8/14/2013	8/20/2013
N010801-084A	CCTV14-8.5	Soil	8/13/2013 9:50:00 AM	8/14/2013	8/20/2013

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *20-Aug-13*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:30:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	1.2	1.0		mg/Kg	1	8/15/2013 04:40 PM
ORO	2.1	1.0		mg/Kg	1	8/15/2013 04:40 PM
Surr: p-Terphenyl	92.6	59-127		%REC	1	8/15/2013 04:40 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 03:03 PM
Surr: Chlorobenzene - d5	60.4	51-136		%REC	1	8/16/2013 03:03 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471				**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	1.5	0.099		mg/Kg	1	8/15/2013
ICP METALS						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 07:25 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Barium	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Chromium	23	1.0		mg/Kg	1	8/15/2013 07:25 PM
Cobalt	22	1.0		mg/Kg	1	8/15/2013 07:25 PM
Copper	77	2.0		mg/Kg	1	8/15/2013 07:25 PM
Lead	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Nickel	11	1.0		mg/Kg	1	8/15/2013 07:25 PM
Selenium	1.0	1.0		mg/Kg	1	8/15/2013 07:25 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 07:25 PM
Vanadium	64	1.0		mg/Kg	1	8/15/2013 07:25 PM
Zinc	34	1.0		mg/Kg	1	8/15/2013 07:25 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-002A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 01:08 PM
Surr: Chlorobenzene - d5	103	51-136		%REC	1	8/15/2013 01:08 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 08:22 PM
Arsenic	2.9	1.0		mg/Kg	1	8/15/2013 08:22 PM
Barium	58	1.0		mg/Kg	1	8/15/2013 08:22 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Chromium	15	1.0		mg/Kg	1	8/15/2013 08:22 PM
Cobalt	7.0	1.0		mg/Kg	1	8/15/2013 08:22 PM
Copper	16	2.0		mg/Kg	1	8/15/2013 08:22 PM
Lead	2.9	1.0		mg/Kg	1	8/15/2013 08:22 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Nickel	10	1.0		mg/Kg	1	8/15/2013 08:22 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 08:22 PM
Vanadium	28	1.0		mg/Kg	1	8/15/2013 08:22 PM
Zinc	36	1.0		mg/Kg	1	8/15/2013 08:22 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-003A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	1.5	1.0		mg/Kg	1	8/15/2013 05:06 PM
ORO	2.3	1.0		mg/Kg	1	8/15/2013 05:06 PM
Surr: p-Terphenyl	81.3	59-127		%REC	1	8/15/2013 05:06 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 01:12 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-004A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 05:32 PM
ORO	1.4	1.0		mg/Kg	1	8/15/2013 05:32 PM
Surr: p-Terphenyl	82.4	59-127		%REC	1	8/15/2013 05:32 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 05:26 PM
Surr: Chlorobenzene - d5	101	51-136		%REC	1	8/16/2013 05:26 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471				**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 08:35 PM
Arsenic	2.8	1.0		mg/Kg	1	8/15/2013 08:35 PM
Barium	82	1.0		mg/Kg	1	8/15/2013 08:35 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Chromium	16	1.0		mg/Kg	1	8/15/2013 08:35 PM
Cobalt	6.9	1.0		mg/Kg	1	8/15/2013 08:35 PM
Copper	13	2.0		mg/Kg	1	8/15/2013 08:35 PM
Lead	3.2	1.0		mg/Kg	1	8/15/2013 08:35 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Nickel	12	1.0		mg/Kg	1	8/15/2013 08:35 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 08:35 PM
Vanadium	25	1.0		mg/Kg	1	8/15/2013 08:35 PM
Zinc	37	1.0		mg/Kg	1	8/15/2013 08:35 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-11.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:55:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-005A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 03:32 PM
Surr: Chlorobenzene - d5	80.7	51-136		%REC	1	8/16/2013 03:32 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 08:42 PM
Arsenic	5.5	1.0		mg/Kg	1	8/15/2013 08:42 PM
Barium	54	1.0		mg/Kg	1	8/15/2013 08:42 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Chromium	13	1.0		mg/Kg	1	8/15/2013 08:42 PM
Cobalt	7.6	1.0		mg/Kg	1	8/15/2013 08:42 PM
Copper	18	2.0		mg/Kg	1	8/15/2013 08:42 PM
Lead	4.8	1.0		mg/Kg	1	8/15/2013 08:42 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Nickel	14	1.0		mg/Kg	1	8/15/2013 08:42 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 08:42 PM
Vanadium	24	1.0		mg/Kg	1	8/15/2013 08:42 PM
Zinc	43	1.0		mg/Kg	1	8/15/2013 08:42 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS1-15.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:00:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-006A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.3	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	9.1	1.0		mg/Kg	1	8/15/2013 05:57 PM
ORO	12	1.0		mg/Kg	1	8/15/2013 05:57 PM
Surr: p-Terphenyl	92.0	59-127		%REC	1	8/15/2013 05:57 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 01:34 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV6-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:25:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-007A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 01:51 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV6-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-008A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 04:00 PM
Surr: Chlorobenzene - d5	98.5	51-136		%REC	1	8/16/2013 04:00 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 01:56 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV6-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-009A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.5	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 04:29 PM
Surr: Chlorobenzene - d5	102	51-136		%REC	1	8/16/2013 04:29 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 08:49 PM
Arsenic	2.9	1.0		mg/Kg	1	8/15/2013 08:49 PM
Barium	120	1.0		mg/Kg	1	8/15/2013 08:49 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Chromium	15	1.0		mg/Kg	1	8/15/2013 08:49 PM
Cobalt	9.0	1.0		mg/Kg	1	8/15/2013 08:49 PM
Copper	23	2.0		mg/Kg	1	8/15/2013 08:49 PM
Lead	4.2	1.0		mg/Kg	1	8/15/2013 08:49 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Nickel	15	1.0		mg/Kg	1	8/15/2013 08:49 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 08:49 PM
Vanadium	25	1.0		mg/Kg	1	8/15/2013 08:49 PM
Zinc	47	1.0		mg/Kg	1	8/15/2013 08:49 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV6-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:35:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-010A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	3.9	1.0		mg/Kg	1	8/15/2013 06:23 PM
ORO	6.6	1.0		mg/Kg	1	8/15/2013 06:23 PM
Surr: p-Terphenyl	88.1	59-127		%REC	1	8/15/2013 06:23 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 02:00 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:30:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-011A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	2.2	1.0		mg/Kg	1	8/15/2013 06:49 PM
ORO	4.0	1.0		mg/Kg	1	8/15/2013 06:49 PM
Surr: p-Terphenyl	88.1	59-127		%REC	1	8/15/2013 06:49 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 02:28 PM
Surr: Chlorobenzene - d5	85.1	51-136		%REC	1	8/19/2013 02:28 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	0.24	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 08:55 PM
Arsenic	2.9	1.0		mg/Kg	1	8/15/2013 08:55 PM
Barium	410	1.0		mg/Kg	1	8/15/2013 08:55 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Chromium	29	1.0		mg/Kg	1	8/15/2013 08:55 PM
Cobalt	12	1.0		mg/Kg	1	8/15/2013 08:55 PM
Copper	32	2.0		mg/Kg	1	8/15/2013 08:55 PM
Lead	2.5	1.0		mg/Kg	1	8/15/2013 08:55 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Nickel	50	1.0		mg/Kg	1	8/15/2013 08:55 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 08:55 PM
Vanadium	38	1.0		mg/Kg	1	8/15/2013 08:55 PM
Zinc	37	1.0		mg/Kg	1	8/15/2013 08:55 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:30:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-012A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 06:23 PM
Surr: Chlorobenzene - d5	91.8	51-136		%REC	1	8/16/2013 06:23 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 09:02 PM
Arsenic	3.6	1.0		mg/Kg	1	8/15/2013 09:02 PM
Barium	61	1.0		mg/Kg	1	8/15/2013 09:02 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 09:02 PM
Cobalt	7.4	1.0		mg/Kg	1	8/15/2013 09:02 PM
Copper	24	2.0		mg/Kg	1	8/15/2013 09:02 PM
Lead	4.0	1.0		mg/Kg	1	8/15/2013 09:02 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Nickel	11	1.0		mg/Kg	1	8/15/2013 09:02 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 09:02 PM
Vanadium	26	1.0		mg/Kg	1	8/15/2013 09:02 PM
Zinc	40	1.0		mg/Kg	1	8/15/2013 09:02 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-013A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.0	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 07:15 PM
ORO	ND	1.0		mg/Kg	1	8/15/2013 07:15 PM
Surr: p-Terphenyl	84.7	59-127		%REC	1	8/15/2013 07:15 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 02:04 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-014A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	1.8	1.0		mg/Kg	1	8/15/2013 07:40 PM
ORO	1.5	1.0		mg/Kg	1	8/15/2013 07:40 PM
Surr: p-Terphenyl	86.0	59-127		%REC	1	8/15/2013 07:40 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 10:16 AM
Surr: Chlorobenzene - d5	70.6	51-136		%REC	1	8/19/2013 10:16 AM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471				**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 09:08 PM
Arsenic	4.5	1.0		mg/Kg	1	8/15/2013 09:08 PM
Barium	56	1.0		mg/Kg	1	8/15/2013 09:08 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Chromium	13	1.0		mg/Kg	1	8/15/2013 09:08 PM
Cobalt	5.7	1.0		mg/Kg	1	8/15/2013 09:08 PM
Copper	13	2.0		mg/Kg	1	8/15/2013 09:08 PM
Lead	3.8	1.0		mg/Kg	1	8/15/2013 09:08 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Nickel	13	1.0		mg/Kg	1	8/15/2013 09:08 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 09:08 PM
Vanadium	24	1.0		mg/Kg	1	8/15/2013 09:08 PM
Zinc	43	1.0		mg/Kg	1	8/15/2013 09:08 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-11.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 10:55:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-015A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 03:13 PM
Surr: Chlorobenzene - d5	88.2	51-136		%REC	1	8/19/2013 03:13 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 09:27 PM
Arsenic	3.5	1.0		mg/Kg	1	8/15/2013 09:27 PM
Barium	74	1.0		mg/Kg	1	8/15/2013 09:27 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Chromium	12	1.0		mg/Kg	1	8/15/2013 09:27 PM
Cobalt	5.9	1.0		mg/Kg	1	8/15/2013 09:27 PM
Copper	12	2.0		mg/Kg	1	8/15/2013 09:27 PM
Lead	3.2	1.0		mg/Kg	1	8/15/2013 09:27 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Nickel	11	1.0		mg/Kg	1	8/15/2013 09:27 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 09:27 PM
Vanadium	23	1.0		mg/Kg	1	8/15/2013 09:27 PM
Zinc	38	1.0		mg/Kg	1	8/15/2013 09:27 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EMS2-15.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:00:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-016A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.1	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	1.6	1.0		mg/Kg	1	8/15/2013 09:23 PM
ORO	2.1	1.0		mg/Kg	1	8/15/2013 09:23 PM
Surr: p-Terphenyl	90.6	59-127		%REC	1	8/15/2013 09:23 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 02:09 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CMS1-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:05:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-017A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B				**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	17	1.0		mg/Kg	1	8/15/2013 09:49 PM
ORO	60	1.0		mg/Kg	1	8/15/2013 09:49 PM
Surr: p-Terphenyl	77.1	59-127		%REC	1	8/15/2013 09:49 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 06:01 PM
Surr: Chlorobenzene - d5	90.3	51-136		%REC	1	8/19/2013 06:01 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471				**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	0.26	0.099		mg/Kg	1	8/15/2013
ICP METALS						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 09:33 PM
Arsenic	2.5	1.0		mg/Kg	1	8/15/2013 09:33 PM
Barium	96	1.0		mg/Kg	1	8/15/2013 09:33 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Chromium	23	1.0		mg/Kg	1	8/15/2013 09:33 PM
Cobalt	11	1.0		mg/Kg	1	8/15/2013 09:33 PM
Copper	28	2.0		mg/Kg	1	8/15/2013 09:33 PM
Lead	5.6	1.0		mg/Kg	1	8/15/2013 09:33 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Nickel	20	1.0		mg/Kg	1	8/15/2013 09:33 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 09:33 PM
Vanadium	39	1.0		mg/Kg	1	8/15/2013 09:33 PM
Zinc	39	1.0		mg/Kg	1	8/15/2013 09:33 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CMS1-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:10:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-018A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.6	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 05:05 PM
Surr: Chlorobenzene - d5	88.1	51-136		%REC	1	8/19/2013 05:05 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 09:47 PM
Arsenic	3.5	1.0		mg/Kg	1	8/15/2013 09:47 PM
Barium	240	1.0		mg/Kg	1	8/15/2013 09:47 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Chromium	25	1.0		mg/Kg	1	8/15/2013 09:47 PM
Cobalt	9.6	1.0		mg/Kg	1	8/15/2013 09:47 PM
Copper	21	2.0		mg/Kg	1	8/15/2013 09:47 PM
Lead	4.0	1.0		mg/Kg	1	8/15/2013 09:47 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Nickel	44	1.0		mg/Kg	1	8/15/2013 09:47 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 09:47 PM
Vanadium	29	1.0		mg/Kg	1	8/15/2013 09:47 PM
Zinc	38	1.0		mg/Kg	1	8/15/2013 09:47 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CMS1-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:15:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-019A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 03:41 PM
Surr: Chlorobenzene - d5	93.3	51-136		%REC	1	8/19/2013 03:41 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 02:13 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CMS1-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 3:20:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-020A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
			EPA 9045C			
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	1.1	1.0		mg/Kg	1	8/15/2013 10:14 PM
ORO	1.4	1.0		mg/Kg	1	8/15/2013 10:14 PM
Surr: p-Terphenyl	95.0	59-127		%REC	1	8/15/2013 10:14 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:00 PM
Arsenic	2.7	1.0		mg/Kg	1	8/15/2013 10:00 PM
Barium	52	1.0		mg/Kg	1	8/15/2013 10:00 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 10:00 PM
Cobalt	7.2	1.0		mg/Kg	1	8/15/2013 10:00 PM
Copper	16	2.0		mg/Kg	1	8/15/2013 10:00 PM
Lead	3.8	1.0		mg/Kg	1	8/15/2013 10:00 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Nickel	12	1.0		mg/Kg	1	8/15/2013 10:00 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:00 PM
Vanadium	22	1.0		mg/Kg	1	8/15/2013 10:00 PM
Zinc	39	1.0		mg/Kg	1	8/15/2013 10:00 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV7-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:15:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-021A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	18	5.0		mg/Kg	1	8/16/2013 02:17 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV7-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:15:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-022A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 04:09 PM
Surr: Chlorobenzene - d5	93.5	51-136		%REC	1	8/19/2013 04:09 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 02:22 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV7-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:20:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-023A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.0	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 07:25 PM
Surr: Chlorobenzene - d5	81.2	51-136		%REC	1	8/19/2013 07:25 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:07 PM
Arsenic	1.2	1.0		mg/Kg	1	8/15/2013 10:07 PM
Barium	55	1.0		mg/Kg	1	8/15/2013 10:07 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Chromium	11	1.0		mg/Kg	1	8/15/2013 10:07 PM
Cobalt	3.4	1.0		mg/Kg	1	8/15/2013 10:07 PM
Copper	8.3	2.0		mg/Kg	1	8/15/2013 10:07 PM
Lead	3.1	1.0		mg/Kg	1	8/15/2013 10:07 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Nickel	11	1.0		mg/Kg	1	8/15/2013 10:07 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:07 PM
Vanadium	13	1.0		mg/Kg	1	8/15/2013 10:07 PM
Zinc	25	1.0		mg/Kg	1	8/15/2013 10:07 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV7-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:25:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-024A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 11:05 PM
ORO	ND	1.0		mg/Kg	1	8/15/2013 11:05 PM
Surr: p-Terphenyl	82.5	59-127		%REC	1	8/15/2013 11:05 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.0	5.0		mg/Kg	1	8/16/2013 02:26 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV7-8.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-025A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate: 8/15/2013		Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 11:31 PM
ORO	ND	1.0		mg/Kg	1	8/15/2013 11:31 PM
Surr: p-Terphenyl	70.0	59-127		%REC	1	8/15/2013 11:31 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:14 PM
Arsenic	37	1.0		mg/Kg	1	8/15/2013 10:14 PM
Barium	76	1.0		mg/Kg	1	8/15/2013 10:14 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:14 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:14 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 10:14 PM
Cobalt	6.1	1.0		mg/Kg	1	8/15/2013 10:14 PM
Copper	29	2.0		mg/Kg	1	8/15/2013 10:14 PM
Lead	9.6	1.0		mg/Kg	1	8/15/2013 10:14 PM
Molybdenum	2.9	1.0		mg/Kg	1	8/15/2013 10:14 PM
Nickel	13	1.0		mg/Kg	1	8/15/2013 10:14 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:14 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:14 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:14 PM
Vanadium	59	1.0		mg/Kg	1	8/15/2013 10:14 PM
Zinc	29	1.0		mg/Kg	1	8/15/2013 10:14 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV9-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:40:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-026A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.5	5.0		mg/Kg	1	8/16/2013 02:52 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV9-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:45:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-027A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 10:44 AM
Surr: Chlorobenzene - d5	72.5	51-136		%REC	1	8/19/2013 10:44 AM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.6	5.0		mg/Kg	1	8/16/2013 03:01 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV9-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 01:32 PM
Surr: Chlorobenzene - d5	80.2	51-136		%REC	1	8/19/2013 01:32 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:21 PM
Arsenic	5.4	1.0		mg/Kg	1	8/15/2013 10:21 PM
Barium	150	1.0		mg/Kg	1	8/15/2013 10:21 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Chromium	26	1.0		mg/Kg	1	8/15/2013 10:21 PM
Cobalt	9.2	1.0		mg/Kg	1	8/15/2013 10:21 PM
Copper	23	2.0		mg/Kg	1	8/15/2013 10:21 PM
Lead	4.8	1.0		mg/Kg	1	8/15/2013 10:21 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Nickel	32	1.0		mg/Kg	1	8/15/2013 10:21 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:21 PM
Vanadium	38	1.0		mg/Kg	1	8/15/2013 10:21 PM
Zinc	39	1.0		mg/Kg	1	8/15/2013 10:21 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV9-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-029A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 11:56 PM
ORO	ND	1.0		mg/Kg	1	8/15/2013 11:56 PM
Surr: p-Terphenyl	80.5	59-127		%REC	1	8/15/2013 11:56 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.1	5.0		mg/Kg	1	8/16/2013 03:05 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV9-8.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:55:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-030A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	1.2	1.0		mg/Kg	1	8/16/2013 12:22 AM
ORO	1.8	1.0		mg/Kg	1	8/16/2013 12:22 AM
Surr: p-Terphenyl	89.7	59-127		%REC	1	8/16/2013 12:22 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:27 PM
Arsenic	4.3	1.0		mg/Kg	1	8/15/2013 10:27 PM
Barium	180	1.0		mg/Kg	1	8/15/2013 10:27 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Chromium	15	1.0		mg/Kg	1	8/15/2013 10:27 PM
Cobalt	7.3	1.0		mg/Kg	1	8/15/2013 10:27 PM
Copper	17	2.0		mg/Kg	1	8/15/2013 10:27 PM
Lead	4.7	1.0		mg/Kg	1	8/15/2013 10:27 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Nickel	19	1.0		mg/Kg	1	8/15/2013 10:27 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:27 PM
Vanadium	36	1.0		mg/Kg	1	8/15/2013 10:27 PM
Zinc	30	1.0		mg/Kg	1	8/15/2013 10:27 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV3-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 8:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-031A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:09 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV3-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 8:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-032A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 11:12 AM
Surr: Chlorobenzene - d5	76.8	51-136		%REC	1	8/19/2013 11:12 AM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:14 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV3-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 8:45:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-033A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	7.8	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 11:40 AM
Surr: Chlorobenzene - d5	77.8	51-136		%REC	1	8/19/2013 11:40 AM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate: 8/15/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 10:58 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Barium	31	1.0		mg/Kg	1	8/15/2013 10:58 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Chromium	15	1.0		mg/Kg	1	8/15/2013 10:58 PM
Cobalt	4.7	1.0		mg/Kg	1	8/15/2013 10:58 PM
Copper	3.4	2.0		mg/Kg	1	8/15/2013 10:58 PM
Lead	2.3	1.0		mg/Kg	1	8/15/2013 10:58 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Nickel	18	1.0		mg/Kg	1	8/15/2013 10:58 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 10:58 PM
Vanadium	11	1.0		mg/Kg	1	8/15/2013 10:58 PM
Zinc	27	1.0		mg/Kg	1	8/15/2013 10:58 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV3-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 8:50:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-034A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/16/2013 12:47 AM
ORO	ND	1.0		mg/Kg	1	8/16/2013 12:47 AM
Surr: p-Terphenyl	85.0	59-127		%REC	1	8/16/2013 12:47 AM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:18 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV3-8.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 9:00:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-035A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/16/2013 01:13 AM
ORO	ND	1.0		mg/Kg	1	8/16/2013 01:13 AM
Surr: p-Terphenyl	86.4	59-127		%REC	1	8/16/2013 01:13 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 11:04 PM
Arsenic	3.1	1.0		mg/Kg	1	8/15/2013 11:04 PM
Barium	54	1.0		mg/Kg	1	8/15/2013 11:04 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Chromium	18	1.0		mg/Kg	1	8/15/2013 11:04 PM
Cobalt	3.1	1.0		mg/Kg	1	8/15/2013 11:04 PM
Copper	8.7	2.0		mg/Kg	1	8/15/2013 11:04 PM
Lead	5.5	1.0		mg/Kg	1	8/15/2013 11:04 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Nickel	23	1.0		mg/Kg	1	8/15/2013 11:04 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 11:04 PM
Vanadium	11	1.0		mg/Kg	1	8/15/2013 11:04 PM
Zinc	27	1.0		mg/Kg	1	8/15/2013 11:04 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV4-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:55:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-036A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:22 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV4-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:00:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-037A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 07:53 PM
Surr: Chlorobenzene - d5	88.6	51-136		%REC	1	8/19/2013 07:53 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:27 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV4-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:00:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-038A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130819A	QC Batch: E13VS087			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/19/2013 12:08 PM
Surr: Chlorobenzene - d5	94.8	51-136		%REC	1	8/19/2013 12:08 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 11:11 PM
Arsenic	2.3	1.0		mg/Kg	1	8/15/2013 11:11 PM
Barium	56	1.0		mg/Kg	1	8/15/2013 11:11 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Chromium	9.4	1.0		mg/Kg	1	8/15/2013 11:11 PM
Cobalt	7.8	1.0		mg/Kg	1	8/15/2013 11:11 PM
Copper	10	2.0		mg/Kg	1	8/15/2013 11:11 PM
Lead	1.9	1.0		mg/Kg	1	8/15/2013 11:11 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Nickel	12	1.0		mg/Kg	1	8/15/2013 11:11 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 11:11 PM
Vanadium	14	1.0		mg/Kg	1	8/15/2013 11:11 PM
Zinc	25	1.0		mg/Kg	1	8/15/2013 11:11 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV4-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:05:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-039A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	1.1	1.0		mg/Kg	1	8/16/2013 01:38 AM
ORO	1.3	1.0		mg/Kg	1	8/16/2013 01:38 AM
Surr: p-Terphenyl	90.0	59-127		%REC	1	8/16/2013 01:38 AM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43682			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 03:31 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV4-8.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:10:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-040A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130819A	QC Batch: 43707			PrepDate:	8/19/2013	Analyst: **MDM**
DRO	3.7	1.0		mg/Kg	1	8/19/2013 05:30 PM
ORO	4.9	1.0		mg/Kg	1	8/19/2013 05:30 PM
Surr: p-Terphenyl	95.5	59-127		%REC	1	8/19/2013 05:30 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43684			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43692			PrepDate:	8/15/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 11:18 PM
Arsenic	3.2	1.0		mg/Kg	1	8/15/2013 11:18 PM
Barium	74	1.0		mg/Kg	1	8/15/2013 11:18 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 11:18 PM
Cobalt	7.9	1.0		mg/Kg	1	8/15/2013 11:18 PM
Copper	24	2.0		mg/Kg	1	8/15/2013 11:18 PM
Lead	4.0	1.0		mg/Kg	1	8/15/2013 11:18 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Nickel	12	1.0		mg/Kg	1	8/15/2013 11:18 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 11:18 PM
Vanadium	28	1.0		mg/Kg	1	8/15/2013 11:18 PM
Zinc	40	1.0		mg/Kg	1	8/15/2013 11:18 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV12-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:20:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate: 8/14/2013	Analyst: **CEI**	
Lead	5.8	5.0		mg/Kg	1	8/16/2013 03:57 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV12-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:25:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 12:13 PM
Surr: Chlorobenzene - d5	95.1	51-136		%REC	1	8/14/2013 12:13 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 04:19 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV12-2.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH						
				EPA 9045C		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.7	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 12:41 PM
Surr: Chlorobenzene - d5	97.7	51-136		%REC	1	8/14/2013 12:41 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 12:22 PM
Arsenic	4.4	1.0		mg/Kg	1	8/15/2013 12:22 PM
Barium	140	1.0		mg/Kg	1	8/15/2013 12:22 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Chromium	16	1.0		mg/Kg	1	8/15/2013 12:22 PM
Cobalt	8.3	1.0		mg/Kg	1	8/15/2013 12:22 PM
Copper	18	2.0		mg/Kg	1	8/15/2013 12:22 PM
Lead	5.2	1.0		mg/Kg	1	8/15/2013 12:22 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Nickel	18	1.0		mg/Kg	1	8/15/2013 12:22 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 12:22 PM
Vanadium	33	1.0		mg/Kg	1	8/15/2013 12:22 PM
Zinc	44	1.0		mg/Kg	1	8/15/2013 12:22 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV12-5.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-044A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	2.2	1.0		mg/Kg	1	8/15/2013 02:57 PM
ORO	3.2	1.0		mg/Kg	1	8/15/2013 02:57 PM
Surr: p-Terphenyl	88.9	59-127		%REC	1	8/15/2013 02:57 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.5	5.0		mg/Kg	1	8/16/2013 04:44 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV12-8.5
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:35:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-045A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC1_130815A	QC Batch: 43691			PrepDate:	8/15/2013	Analyst: **MDM**
DRO	ND	1.0		mg/Kg	1	8/15/2013 03:49 PM
ORO	1.3	1.0		mg/Kg	1	8/15/2013 03:49 PM
Surr: p-Terphenyl	78.8	59-127		%REC	1	8/15/2013 03:49 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 12:40 PM
Arsenic	3.2	1.0		mg/Kg	1	8/15/2013 12:40 PM
Barium	130	1.0		mg/Kg	1	8/15/2013 12:40 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Chromium	8.8	1.0		mg/Kg	1	8/15/2013 12:40 PM
Cobalt	5.4	1.0		mg/Kg	1	8/15/2013 12:40 PM
Copper	9.7	2.0		mg/Kg	1	8/15/2013 12:40 PM
Lead	3.0	1.0		mg/Kg	1	8/15/2013 12:40 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Nickel	9.9	1.0		mg/Kg	1	8/15/2013 12:40 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Vanadium	23	1.0		mg/Kg	1	8/15/2013 12:40 PM
Zinc	31	1.0		mg/Kg	1	8/15/2013 12:40 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV13-0
Lab Order:	N010801	**Collection Date:**	8/13/2013 10:30:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-046A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
EPA 3050B				**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate: 8/14/2013		Analyst: **CEI**
Lead	7.4	5.0		mg/Kg	1	8/16/2013 04:49 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV13-1
Lab Order:	N010801	**Collection Date:**	8/13/2013 10:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-047A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 02:33 PM
Surr: Chlorobenzene - d5	84.8	51-136		%REC	1	8/14/2013 02:33 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.8	5.0		mg/Kg	1	8/16/2013 04:53 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV13-2.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 10:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-048A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 03:01 PM
Surr: Chlorobenzene - d5	93.5	51-136		%REC	1	8/14/2013 03:01 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 12:46 PM
Arsenic	4.2	1.0		mg/Kg	1	8/15/2013 12:46 PM
Barium	150	1.0		mg/Kg	1	8/15/2013 12:46 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Chromium	28	1.0		mg/Kg	1	8/15/2013 12:46 PM
Cobalt	8.4	1.0		mg/Kg	1	8/15/2013 12:46 PM
Copper	12	2.0		mg/Kg	1	8/15/2013 12:46 PM
Lead	4.8	1.0		mg/Kg	1	8/15/2013 12:46 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Nickel	32	1.0		mg/Kg	1	8/15/2013 12:46 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 12:46 PM
Vanadium	27	1.0		mg/Kg	1	8/15/2013 12:46 PM
Zinc	36	1.0		mg/Kg	1	8/15/2013 12:46 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV13-5.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 10:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-049A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	1.4	1.0		mg/Kg	1	8/15/2013 11:16 AM
ORO	1.9	1.0		mg/Kg	1	8/15/2013 11:16 AM
Surr: p-Terphenyl	85.8	59-127		%REC	1	8/15/2013 11:16 AM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	5.1	5.0		mg/Kg	1	8/16/2013 04:57 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV13-8.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 10:45:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-050A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	1.5	1.0		mg/Kg	1	8/15/2013 12:08 PM
ORO	1.9	1.0		mg/Kg	1	8/15/2013 12:08 PM
Surr: p-Terphenyl	82.7	59-127		%REC	1	8/15/2013 12:08 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 12:53 PM
Arsenic	3.3	1.0		mg/Kg	1	8/15/2013 12:53 PM
Barium	120	1.0		mg/Kg	1	8/15/2013 12:53 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Chromium	25	1.0		mg/Kg	1	8/15/2013 12:53 PM
Cobalt	6.4	1.0		mg/Kg	1	8/15/2013 12:53 PM
Copper	11	2.0		mg/Kg	1	8/15/2013 12:53 PM
Lead	4.1	1.0		mg/Kg	1	8/15/2013 12:53 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Nickel	28	1.0		mg/Kg	1	8/15/2013 12:53 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 12:53 PM
Vanadium	22	1.0		mg/Kg	1	8/15/2013 12:53 PM
Zinc	33	1.0		mg/Kg	1	8/15/2013 12:53 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV1-0
Lab Order:	N010801	**Collection Date:**	8/13/2013 11:30:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-051A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	33	5.0		mg/Kg	1	8/16/2013 05:02 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV1-1
Lab Order:	N010801	**Collection Date:**	8/13/2013 11:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-052A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
			EPA 8015B			
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 03:30 PM
Surr: Chlorobenzene - d5	97.0	51-136		%REC	1	8/14/2013 03:30 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 05:06 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV2-0
Lab Order:	N010801	**Collection Date:**	8/13/2013 11:10:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-053A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 05:10 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV2-1
Lab Order:	N010801	**Collection Date:**	8/13/2013 11:15:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-054A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 03:58 PM
Surr: Chlorobenzene - d5	93.6	51-136		%REC	1	8/14/2013 03:58 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 05:15 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV10-0
Lab Order:	N010801	**Collection Date:**	8/13/2013 8:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-055A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate: 8/14/2013	Analyst: **CEI**	
Lead	ND	5.0		mg/Kg	1	8/16/2013 05:19 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV10-1
Lab Order:	N010801	**Collection Date:**	8/13/2013 8:45:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-056A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 04:26 PM
Surr: Chlorobenzene - d5	93.3	51-136		%REC	1	8/14/2013 04:26 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	7.3	5.0		mg/Kg	1	8/16/2013 05:36 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV10-2.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 8:50:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-057A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.1	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 02:32 PM
Surr: Chlorobenzene - d5	78.0	51-136		%REC	1	8/15/2013 02:32 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.23	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 12:59 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Barium	63	1.0		mg/Kg	1	8/15/2013 12:59 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Chromium	27	1.0		mg/Kg	1	8/15/2013 12:59 PM
Cobalt	18	1.0		mg/Kg	1	8/15/2013 12:59 PM
Copper	43	2.0		mg/Kg	1	8/15/2013 12:59 PM
Lead	17	1.0		mg/Kg	1	8/15/2013 12:59 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Nickel	30	1.0		mg/Kg	1	8/15/2013 12:59 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 12:59 PM
Vanadium	93	1.0		mg/Kg	1	8/15/2013 12:59 PM
Zinc	25	1.0		mg/Kg	1	8/15/2013 12:59 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R5-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-058A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 05:22 PM
Surr: Chlorobenzene - d5	66.0	51-136		%REC	1	8/14/2013 05:22 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.22	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:05 PM
Arsenic	5.2	1.0		mg/Kg	1	8/15/2013 01:05 PM
Barium	27	1.0		mg/Kg	1	8/15/2013 01:05 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Chromium	9.4	1.0		mg/Kg	1	8/15/2013 01:05 PM
Cobalt	3.4	1.0		mg/Kg	1	8/15/2013 01:05 PM
Copper	11	2.0		mg/Kg	1	8/15/2013 01:05 PM
Lead	19	1.0		mg/Kg	1	8/15/2013 01:05 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Nickel	8.2	1.0		mg/Kg	1	8/15/2013 01:05 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:05 PM
Vanadium	18	1.0		mg/Kg	1	8/15/2013 01:05 PM
Zinc	81	1.0		mg/Kg	1	8/15/2013 01:05 PM

Qualifiers:

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

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *20-Aug-13*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R5-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:59:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-059A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	5.3	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID				**EPA 8015B**		
	EPA 3550B					
RunID: GC3_130815A	QC Batch: 43680			PrepDate: 8/14/2013		Analyst: **MDM**
DRO	2.3	1.0		mg/Kg	1	8/15/2013 12:34 PM
ORO	6.9	1.0		mg/Kg	1	8/15/2013 12:34 PM
Surr: p-Terphenyl	88.8	59-127		%REC	1	8/15/2013 12:34 PM
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 06:18 PM
Surr: Chlorobenzene - d5	82.7	51-136		%REC	1	8/14/2013 06:18 PM
MERCURY BY COLD VAPOR TECHNIQUE				**EPA 7471A**		
	EPA 7471					
RunID: AA1_130815A	QC Batch: 43685			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS				**EPA 6010B**		
	EPA 3050B					
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:12 PM
Arsenic	2.9	1.0		mg/Kg	1	8/15/2013 01:12 PM
Barium	13	1.0		mg/Kg	1	8/15/2013 01:12 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:12 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:12 PM
Chromium	6.9	1.0		mg/Kg	1	8/15/2013 01:12 PM
Cobalt	3.6	1.0		mg/Kg	1	8/15/2013 01:12 PM
Copper	2.8	2.0		mg/Kg	1	8/15/2013 01:12 PM
Lead	3.1	1.0		mg/Kg	1	8/15/2013 01:12 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:12 PM
Nickel	5.3	1.0		mg/Kg	1	8/15/2013 01:12 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 01:12 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R5-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:59:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-059A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013	Analyst: **CEI**	
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:12 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:12 PM
Vanadium	13	1.0		mg/Kg	1	8/15/2013 01:12 PM
Zinc	19	1.0		mg/Kg	1	8/15/2013 01:12 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EB3
Lab Order:	N010801	**Collection Date:**	8/12/2013
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	WATER
Lab ID:	N010801-060A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A			**EPA 6010B**		
RunID: ICP2_130816A	QC Batch: 43693			PrepDate: 8/15/2013	Analyst: **CEI**	
Lead	ND	0.0050		mg/L	1	8/16/2013 09:19 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R6-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:16:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-061A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 10:48 AM
Surr: Chlorobenzene - d5	63.8	51-136		%REC	1	8/15/2013 10:48 AM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	1.2	0.099		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:19 PM
Arsenic	4.2	1.0		mg/Kg	1	8/15/2013 01:19 PM
Barium	35	1.0		mg/Kg	1	8/15/2013 01:19 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Chromium	11	1.0		mg/Kg	1	8/15/2013 01:19 PM
Cobalt	3.2	1.0		mg/Kg	1	8/15/2013 01:19 PM
Copper	20	2.0		mg/Kg	1	8/15/2013 01:19 PM
Lead	26	1.0		mg/Kg	1	8/15/2013 01:19 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Nickel	8.4	1.0		mg/Kg	1	8/15/2013 01:19 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:19 PM
Vanadium	20	1.0		mg/Kg	1	8/15/2013 01:19 PM
Zinc	61	1.0		mg/Kg	1	8/15/2013 01:19 PM

Qualifiers:

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

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *20-Aug-13*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R6-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:21:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-062A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	5.8	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	4.4	1.0		mg/Kg	1	8/15/2013 01:00 PM
ORO	16	1.0		mg/Kg	1	8/15/2013 01:00 PM
Surr: p-Terphenyl	78.5	59-127		%REC	1	8/15/2013 01:00 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 09:35 PM
Surr: Chlorobenzene - d5	86.1	51-136		%REC	1	8/14/2013 09:35 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:25 PM
Arsenic	3.8	1.0		mg/Kg	1	8/15/2013 01:25 PM
Barium	26	1.0		mg/Kg	1	8/15/2013 01:25 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:25 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:25 PM
Chromium	11	1.0		mg/Kg	1	8/15/2013 01:25 PM
Cobalt	4.0	1.0		mg/Kg	1	8/15/2013 01:25 PM
Copper	9.6	2.0		mg/Kg	1	8/15/2013 01:25 PM
Lead	19	1.0		mg/Kg	1	8/15/2013 01:25 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:25 PM
Nickel	8.5	1.0		mg/Kg	1	8/15/2013 01:25 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 01:25 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R6-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 2:21:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-062A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:25 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:25 PM
Vanadium	19	1.0		mg/Kg	1	8/15/2013 01:25 PM
Zinc	44	1.0		mg/Kg	1	8/15/2013 01:25 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:11:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-063A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 03:57 PM
Surr: Chlorobenzene - d5	83.4	51-136		%REC	1	8/15/2013 03:57 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	0.24	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:32 PM
Arsenic	1.2	1.0		mg/Kg	1	8/15/2013 01:32 PM
Barium	49	1.0		mg/Kg	1	8/15/2013 01:32 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:32 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:32 PM
Chromium	24	1.0		mg/Kg	1	8/15/2013 01:32 PM
Cobalt	17	1.0		mg/Kg	1	8/15/2013 01:32 PM
Copper	51	2.0		mg/Kg	1	8/15/2013 01:32 PM
Lead	650	1.0		mg/Kg	1	8/15/2013 01:32 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:32 PM
Nickel	24	1.0		mg/Kg	1	8/15/2013 01:32 PM
Selenium	1.2	1.0		mg/Kg	1	8/15/2013 01:32 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:32 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:32 PM
Vanadium	110	1.0		mg/Kg	1	8/15/2013 01:32 PM
Zinc	210	1.0		mg/Kg	1	8/15/2013 01:32 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:19:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-064A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	7.9	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	2.5	1.0		mg/Kg	1	8/15/2013 01:27 PM
ORO	5.8	1.0		mg/Kg	1	8/15/2013 01:27 PM
Surr: p-Terphenyl	88.4	59-127		%REC	1	8/15/2013 01:27 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 11:16 AM
Surr: Chlorobenzene - d5	86.6	51-136		%REC	1	8/15/2013 11:16 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 01:39 PM
Arsenic	1.2	1.0		mg/Kg	1	8/15/2013 01:39 PM
Barium	41	1.0		mg/Kg	1	8/15/2013 01:39 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 01:39 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 01:39 PM
Chromium	13	1.0		mg/Kg	1	8/15/2013 01:39 PM
Cobalt	13	1.0		mg/Kg	1	8/15/2013 01:39 PM
Copper	15	2.0		mg/Kg	1	8/15/2013 01:39 PM
Lead	26	1.0		mg/Kg	1	8/15/2013 01:39 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 01:39 PM
Nickel	14	1.0		mg/Kg	1	8/15/2013 01:39 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 01:39 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:19:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-064A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Silver	ND	1.0		mg/Kg	1	8/15/2013 01:39 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 01:39 PM
Vanadium	64	1.0		mg/Kg	1	8/15/2013 01:39 PM
Zinc	37	1.0		mg/Kg	1	8/15/2013 01:39 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R10-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-065A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 07:15 PM
Surr: Chlorobenzene - d5	85.9	51-136		%REC	1	8/14/2013 07:15 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.33	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 02:10 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Barium	28	1.0		mg/Kg	1	8/15/2013 02:10 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Chromium	20	1.0		mg/Kg	1	8/15/2013 02:10 PM
Cobalt	22	1.0		mg/Kg	1	8/15/2013 02:10 PM
Copper	49	2.0		mg/Kg	1	8/15/2013 02:10 PM
Lead	82	1.0		mg/Kg	1	8/15/2013 02:10 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Nickel	19	1.0		mg/Kg	1	8/15/2013 02:10 PM
Selenium	1.5	1.0		mg/Kg	1	8/15/2013 02:10 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 02:10 PM
Vanadium	160	1.0		mg/Kg	1	8/15/2013 02:10 PM
Zinc	100	1.0		mg/Kg	1	8/15/2013 02:10 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R10-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:40:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-066A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	7.8	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	14	1.0		mg/Kg	1	8/15/2013 01:53 PM
ORO	41	1.0		mg/Kg	1	8/15/2013 01:53 PM
Surr: p-Terphenyl	98.3	59-127		%REC	1	8/15/2013 01:53 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 08:10 PM
Surr: Chlorobenzene - d5	80.9	51-136		%REC	1	8/14/2013 08:10 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.11	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 02:18 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Barium	13	1.0		mg/Kg	1	8/15/2013 02:18 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Chromium	12	1.0		mg/Kg	1	8/15/2013 02:18 PM
Cobalt	17	1.0		mg/Kg	1	8/15/2013 02:18 PM
Copper	41	2.0		mg/Kg	1	8/15/2013 02:18 PM
Lead	24	1.0		mg/Kg	1	8/15/2013 02:18 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Nickel	19	1.0		mg/Kg	1	8/15/2013 02:18 PM
Selenium	1.2	1.0		mg/Kg	1	8/15/2013 02:18 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R10-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:40:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-066A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Silver	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 02:18 PM
Vanadium	100	1.0		mg/Kg	1	8/15/2013 02:18 PM
Zinc	73	1.0		mg/Kg	1	8/15/2013 02:18 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R13-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:45:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-067A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B				
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 11:44 AM
Surr: Chlorobenzene - d5	30.4	51-136	S	%REC	1	8/15/2013 11:44 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	0.40	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43678			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 02:25 PM
Arsenic	3.1	1.0		mg/Kg	1	8/15/2013 02:25 PM
Barium	87	1.0		mg/Kg	1	8/15/2013 02:25 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 02:25 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 02:25 PM
Chromium	20	1.0		mg/Kg	1	8/15/2013 02:25 PM
Cobalt	9.9	1.0		mg/Kg	1	8/15/2013 02:25 PM
Copper	47	2.0		mg/Kg	1	8/15/2013 02:25 PM
Lead	96	1.0		mg/Kg	1	8/15/2013 02:25 PM
Molybdenum	1.5	1.0		mg/Kg	1	8/15/2013 02:25 PM
Nickel	22	1.0		mg/Kg	1	8/15/2013 02:25 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 02:25 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 02:25 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 02:25 PM
Vanadium	55	1.0		mg/Kg	1	8/15/2013 02:25 PM
Zinc	350	1.0		mg/Kg	1	8/15/2013 02:25 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R13-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-068A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	7.3	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	12	1.0		mg/Kg	1	8/15/2013 02:19 PM
ORO	40	1.0		mg/Kg	1	8/15/2013 02:19 PM
Surr: p-Terphenyl	86.4	59-127		%REC	1	8/15/2013 02:19 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 03:00 PM
Surr: Chlorobenzene - d5	100	51-136		%REC	1	8/15/2013 03:00 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.35	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 03:52 PM
Arsenic	5.5	1.0		mg/Kg	1	8/15/2013 03:52 PM
Barium	41	1.0		mg/Kg	1	8/15/2013 03:52 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 03:52 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 03:52 PM
Chromium	18	1.0		mg/Kg	1	8/15/2013 03:52 PM
Cobalt	10	1.0		mg/Kg	1	8/15/2013 03:52 PM
Copper	25	2.0		mg/Kg	1	8/15/2013 03:52 PM
Lead	56	1.0		mg/Kg	1	8/15/2013 03:52 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 03:52 PM
Nickel	19	1.0		mg/Kg	1	8/15/2013 03:52 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 03:52 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R13-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-068A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013	Analyst: **CEI**	
Silver	ND	1.0		mg/Kg	1	8/15/2013 03:52 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 03:52 PM
Vanadium	44	1.0		mg/Kg	1	8/15/2013 03:52 PM
Zinc	39	1.0		mg/Kg	1	8/15/2013 03:52 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R14-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:55:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-069A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 06:18 PM
Surr: Chlorobenzene - d5	77.7	51-136		%REC	1	8/15/2013 06:18 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130816A	QC Batch: 43685			PrepDate: 8/14/2013		Analyst: **JT**
Mercury	9.4	2.5		mg/Kg	25	8/16/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 04:25 PM
Arsenic	4.4	1.0		mg/Kg	1	8/15/2013 04:25 PM
Barium	62	1.0		mg/Kg	1	8/15/2013 04:25 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Chromium	22	1.0		mg/Kg	1	8/15/2013 04:25 PM
Cobalt	9.9	1.0		mg/Kg	1	8/15/2013 04:25 PM
Copper	27	2.0		mg/Kg	1	8/15/2013 04:25 PM
Lead	78	1.0		mg/Kg	1	8/15/2013 04:25 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Nickel	19	1.0		mg/Kg	1	8/15/2013 04:25 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Vanadium	52	1.0		mg/Kg	1	8/15/2013 04:25 PM
Zinc	120	1.0		mg/Kg	1	8/15/2013 04:25 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R14-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:00:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-070A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.6	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	11	1.0		mg/Kg	1	8/15/2013 02:46 PM
ORO	29	1.0		mg/Kg	1	8/15/2013 02:46 PM
Surr: p-Terphenyl	89.9	59-127		%REC	1	8/15/2013 02:46 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 12:12 PM
Surr: Chlorobenzene - d5	74.1	51-136		%REC	1	8/15/2013 12:12 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:17 PM
Arsenic	3.9	1.0		mg/Kg	1	8/15/2013 05:17 PM
Barium	24	1.0		mg/Kg	1	8/15/2013 05:17 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:17 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:17 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 05:17 PM
Cobalt	8.6	1.0		mg/Kg	1	8/15/2013 05:17 PM
Copper	7.3	2.0		mg/Kg	1	8/15/2013 05:17 PM
Lead	4.6	1.0		mg/Kg	1	8/15/2013 05:17 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:17 PM
Nickel	12	1.0		mg/Kg	1	8/15/2013 05:17 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:17 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R14-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:00:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-070A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013		Analyst: **CEI**
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:17 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:17 PM
Vanadium	27	1.0		mg/Kg	1	8/15/2013 05:17 PM
Zinc	32	1.0		mg/Kg	1	8/15/2013 05:17 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R17-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:20:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-071A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130814A	QC Batch: E13VS084			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/14/2013 09:07 PM
Surr: Chlorobenzene - d5	75.1	51-136		%REC	1	8/14/2013 09:07 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:24 PM
Arsenic	3.2	1.0		mg/Kg	1	8/15/2013 05:24 PM
Barium	66	1.0		mg/Kg	1	8/15/2013 05:24 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Chromium	19	1.0		mg/Kg	1	8/15/2013 05:24 PM
Cobalt	10	1.0		mg/Kg	1	8/15/2013 05:24 PM
Copper	27	2.0		mg/Kg	1	8/15/2013 05:24 PM
Lead	10	1.0		mg/Kg	1	8/15/2013 05:24 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Nickel	21	1.0		mg/Kg	1	8/15/2013 05:24 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:24 PM
Vanadium	41	1.0		mg/Kg	1	8/15/2013 05:24 PM
Zinc	66	1.0		mg/Kg	1	8/15/2013 05:24 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		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *20-Aug-13*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R17-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:25:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-072A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	3.7	1.0		mg/Kg	1	8/15/2013 03:12 PM
ORO	10	1.0		mg/Kg	1	8/15/2013 03:12 PM
Surr: p-Terphenyl	93.6	59-127		%REC	1	8/15/2013 03:12 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 12:40 PM
Surr: Chlorobenzene - d5	79.1	51-136		%REC	1	8/15/2013 12:40 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.099		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:30 PM
Arsenic	3.3	1.0		mg/Kg	1	8/15/2013 05:30 PM
Barium	58	1.0		mg/Kg	1	8/15/2013 05:30 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:30 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:30 PM
Chromium	14	1.0		mg/Kg	1	8/15/2013 05:30 PM
Cobalt	8.2	1.0		mg/Kg	1	8/15/2013 05:30 PM
Copper	15	2.0		mg/Kg	1	8/15/2013 05:30 PM
Lead	4.6	1.0		mg/Kg	1	8/15/2013 05:30 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:30 PM
Nickel	14	1.0		mg/Kg	1	8/15/2013 05:30 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:30 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R17-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:25:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-072A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013	Analyst: **CEI**	
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:30 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:30 PM
Vanadium	25	1.0		mg/Kg	1	8/15/2013 05:30 PM
Zinc	45	1.0		mg/Kg	1	8/15/2013 05:30 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R18-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-073A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 04:25 PM
Surr: Chlorobenzene - d5	84.8	51-136		%REC	1	8/15/2013 04:25 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43685			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.28	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:37 PM
Arsenic	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Barium	32	1.0		mg/Kg	1	8/15/2013 05:37 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Chromium	24	1.0		mg/Kg	1	8/15/2013 05:37 PM
Cobalt	17	1.0		mg/Kg	1	8/15/2013 05:37 PM
Copper	53	2.0		mg/Kg	1	8/15/2013 05:37 PM
Lead	20	1.0		mg/Kg	1	8/15/2013 05:37 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Nickel	37	1.0		mg/Kg	1	8/15/2013 05:37 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:37 PM
Vanadium	82	1.0		mg/Kg	1	8/15/2013 05:37 PM
Zinc	56	1.0		mg/Kg	1	8/15/2013 05:37 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R18-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:35:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-074A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	11	1.0		mg/Kg	1	8/15/2013 05:24 PM
ORO	37	1.0		mg/Kg	1	8/15/2013 05:24 PM
Surr: p-Terphenyl	81.3	59-127		%REC	1	8/15/2013 05:24 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 01:38 PM
Surr: Chlorobenzene - d5	95.4	51-136		%REC	1	8/16/2013 01:38 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:44 PM
Arsenic	2.6	1.0		mg/Kg	1	8/15/2013 05:44 PM
Barium	54	1.0		mg/Kg	1	8/15/2013 05:44 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:44 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:44 PM
Chromium	20	1.0		mg/Kg	1	8/15/2013 05:44 PM
Cobalt	12	1.0		mg/Kg	1	8/15/2013 05:44 PM
Copper	36	2.0		mg/Kg	1	8/15/2013 05:44 PM
Lead	72	1.0		mg/Kg	1	8/15/2013 05:44 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:44 PM
Nickel	17	1.0		mg/Kg	1	8/15/2013 05:44 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:44 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R18-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:35:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-074A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013		Analyst: **CEI**
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:44 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:44 PM
Vanadium	44	1.0		mg/Kg	1	8/15/2013 05:44 PM
Zinc	65	1.0		mg/Kg	1	8/15/2013 05:44 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R19-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:44:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-075A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 02:07 PM
Surr: Chlorobenzene - d5	72.9	51-136		%REC	1	8/16/2013 02:07 PM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.73	0.099		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:50 PM
Arsenic	5.0	1.0		mg/Kg	1	8/15/2013 05:50 PM
Barium	200	1.0		mg/Kg	1	8/15/2013 05:50 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Chromium	56	1.0		mg/Kg	1	8/15/2013 05:50 PM
Cobalt	12	1.0		mg/Kg	1	8/15/2013 05:50 PM
Copper	31	2.0		mg/Kg	1	8/15/2013 05:50 PM
Lead	150	1.0		mg/Kg	1	8/15/2013 05:50 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Nickel	43	1.0		mg/Kg	1	8/15/2013 05:50 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:50 PM
Vanadium	35	1.0		mg/Kg	1	8/15/2013 05:50 PM
Zinc	88	1.0		mg/Kg	1	8/15/2013 05:50 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R19-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:49:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-076A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.4	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	1.6	1.0		mg/Kg	1	8/15/2013 05:50 PM
ORO	3.4	1.0		mg/Kg	1	8/15/2013 05:50 PM
Surr: p-Terphenyl	85.2	59-127		%REC	1	8/15/2013 05:50 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 10:45 AM
Surr: Chlorobenzene - d5	84.5	51-136		%REC	1	8/16/2013 10:45 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 05:57 PM
Arsenic	4.8	1.0		mg/Kg	1	8/15/2013 05:57 PM
Barium	140	1.0		mg/Kg	1	8/15/2013 05:57 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 05:57 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 05:57 PM
Chromium	22	1.0		mg/Kg	1	8/15/2013 05:57 PM
Cobalt	9.7	1.0		mg/Kg	1	8/15/2013 05:57 PM
Copper	42	2.0		mg/Kg	1	8/15/2013 05:57 PM
Lead	5.5	1.0		mg/Kg	1	8/15/2013 05:57 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 05:57 PM
Nickel	37	1.0		mg/Kg	1	8/15/2013 05:57 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 05:57 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R19-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:49:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-076A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013	Analyst: **CEI**	
Silver	ND	1.0		mg/Kg	1	8/15/2013 05:57 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 05:57 PM
Vanadium	35	1.0		mg/Kg	1	8/15/2013 05:57 PM
Zinc	30	1.0		mg/Kg	1	8/15/2013 05:57 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R20-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:00:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-077A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 10:17 AM
Surr: Chlorobenzene - d5	56.5	51-136		%REC	1	8/16/2013 10:17 AM
MERCURY BY COLD VAPOR TECHNIQUE	**EPA 7471**			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate: 8/14/2013		Analyst: **LCC**
Mercury	0.17	0.10		mg/Kg	1	8/15/2013
ICP METALS	**EPA 3050B**			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013		Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 06:06 PM
Arsenic	7.6	1.0		mg/Kg	1	8/15/2013 06:06 PM
Barium	140	1.0		mg/Kg	1	8/15/2013 06:06 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Chromium	33	1.0		mg/Kg	1	8/15/2013 06:06 PM
Cobalt	12	1.0		mg/Kg	1	8/15/2013 06:06 PM
Copper	40	2.0		mg/Kg	1	8/15/2013 06:06 PM
Lead	28	1.0		mg/Kg	1	8/15/2013 06:06 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Nickel	41	1.0		mg/Kg	1	8/15/2013 06:06 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 06:06 PM
Vanadium	52	1.0		mg/Kg	1	8/15/2013 06:06 PM
Zinc	84	1.0		mg/Kg	1	8/15/2013 06:06 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R20-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:05:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-078A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.3	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	2.4	1.0		mg/Kg	1	8/15/2013 06:43 PM
ORO	8.2	1.0		mg/Kg	1	8/15/2013 06:43 PM
Surr: p-Terphenyl	89.7	59-127		%REC	1	8/15/2013 06:43 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B		
RunID: GC4_130815A	QC Batch: E13VS085			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/15/2013 05:21 PM
Surr: Chlorobenzene - d5	104	51-136		%REC	1	8/15/2013 05:21 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 06:12 PM
Arsenic	7.7	1.0		mg/Kg	1	8/15/2013 06:12 PM
Barium	180	1.0		mg/Kg	1	8/15/2013 06:12 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 06:12 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 06:12 PM
Chromium	22	1.0		mg/Kg	1	8/15/2013 06:12 PM
Cobalt	9.3	1.0		mg/Kg	1	8/15/2013 06:12 PM
Copper	27	2.0		mg/Kg	1	8/15/2013 06:12 PM
Lead	8.4	1.0		mg/Kg	1	8/15/2013 06:12 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 06:12 PM
Nickel	28	1.0		mg/Kg	1	8/15/2013 06:12 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 06:12 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R20-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:05:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-078A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate: 8/14/2013	Analyst: **CEI**	
Silver	ND	1.0		mg/Kg	1	8/15/2013 06:12 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 06:12 PM
Vanadium	25	1.0		mg/Kg	1	8/15/2013 06:12 PM
Zinc	56	1.0		mg/Kg	1	8/15/2013 06:12 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EB4
Lab Order:	N010801	**Collection Date:**	8/13/2013
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	WATER
Lab ID:	N010801-079A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A			**EPA 6010B**		
RunID: ICP2_130816A	QC Batch: 43693			PrepDate: 8/15/2013	Analyst: **CEI**	
Lead	ND	0.0050		mg/L	1	8/16/2013 09:26 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV14-0
Lab Order:	N010801	**Collection Date:**	8/13/2013 9:35:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-080A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	19	5.0		mg/Kg	1	8/16/2013 05:45 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV14-1
Lab Order:	N010801	**Collection Date:**	8/13/2013 9:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-081A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 12:37 PM
Surr: Chlorobenzene - d5	63.4	51-136		%REC	1	8/16/2013 12:37 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	7.3	5.0		mg/Kg	1	8/16/2013 05:49 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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV14-2.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 9:40:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-082A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PH				**EPA 9045C**		
RunID: WETCHEM_130814B	QC Batch: R89972			PrepDate:		Analyst: **LCC**
pH	8.2	0.10		pH Units	1	8/14/2013
Temp. at time of pH Analysis	25	0		pH Units	1	8/14/2013
GASOLINE RANGE ORGANICS BY GC/FID				**EPA 8015B**		
RunID: GC4_130816A	QC Batch: E13VS086			PrepDate:		Analyst: **PN**
GRO	ND	1.0		mg/Kg	1	8/16/2013 01:10 PM
Surr: Chlorobenzene - d5	66.8	51-136		%REC	1	8/16/2013 01:10 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	0.13	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 06:49 PM
Arsenic	3.8	1.0		mg/Kg	1	8/15/2013 06:49 PM
Barium	190	1.0		mg/Kg	1	8/15/2013 06:49 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Chromium	35	1.0		mg/Kg	1	8/15/2013 06:49 PM
Cobalt	13	1.0		mg/Kg	1	8/15/2013 06:49 PM
Copper	37	2.0		mg/Kg	1	8/15/2013 06:49 PM
Lead	21	1.0		mg/Kg	1	8/15/2013 06:49 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Nickel	54	1.0		mg/Kg	1	8/15/2013 06:49 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 06:49 PM
Vanadium	47	1.0		mg/Kg	1	8/15/2013 06:49 PM
Zinc	48	1.0		mg/Kg	1	8/15/2013 06:49 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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV14-5.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 9:45:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-083A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	1.3	1.0		mg/Kg	1	8/15/2013 07:09 PM
ORO	2.1	1.0		mg/Kg	1	8/15/2013 07:09 PM
Surr: p-Terphenyl	84.3	59-127		%REC	1	8/15/2013 07:09 PM
LEAD BY ICP						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815A	QC Batch: 43683			PrepDate:	8/14/2013	Analyst: **CEI**
Lead	ND	5.0		mg/Kg	1	8/16/2013 05:54 AM

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		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	CCTV14-8.5
Lab Order:	N010801	**Collection Date:**	8/13/2013 9:50:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-084A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B**		
RunID: GC3_130815A	QC Batch: 43680			PrepDate:	8/14/2013	Analyst: **MDM**
DRO	1.2	1.0		mg/Kg	1	8/15/2013 07:36 PM
ORO	1.8	1.0		mg/Kg	1	8/15/2013 07:36 PM
Surr: p-Terphenyl	80.0	59-127		%REC	1	8/15/2013 07:36 PM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471			**EPA 7471A**		
RunID: AA1_130815A	QC Batch: 43686			PrepDate:	8/14/2013	Analyst: **LCC**
Mercury	ND	0.10		mg/Kg	1	8/15/2013
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP2_130815B	QC Batch: 43681			PrepDate:	8/14/2013	Analyst: **CEI**
Antimony	ND	2.0		mg/Kg	1	8/15/2013 07:02 PM
Arsenic	2.1	1.0		mg/Kg	1	8/15/2013 07:02 PM
Barium	140	1.0		mg/Kg	1	8/15/2013 07:02 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Chromium	33	1.0		mg/Kg	1	8/15/2013 07:02 PM
Cobalt	13	1.0		mg/Kg	1	8/15/2013 07:02 PM
Copper	36	2.0		mg/Kg	1	8/15/2013 07:02 PM
Lead	5.9	1.0		mg/Kg	1	8/15/2013 07:02 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Nickel	47	1.0		mg/Kg	1	8/15/2013 07:02 PM
Selenium	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Silver	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2013 07:02 PM
Vanadium	40	1.0		mg/Kg	1	8/15/2013 07:02 PM
Zinc	44	1.0		mg/Kg	1	8/15/2013 07:02 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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-43678** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.271	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	0.297	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: **MB2-43678** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.204	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB2-43678** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634070**

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-43678** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **LCSS** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.865	2.0	50.00	0	95.7	80	120				
Arsenic	47.655	1.0	50.00	0	95.3	80	120				
Barium	50.948	1.0	50.00	0	102	80	120				
Beryllium	49.644	1.0	50.00	0	99.3	80	120				
Cadmium	49.704	1.0	50.00	0	99.4	80	120				
Chromium	50.014	1.0	50.00	0	100	80	120				
Cobalt	49.246	1.0	50.00	0	98.5	80	120				
Copper	53.634	2.0	50.00	0	107	80	120				
Lead	50.425	1.0	50.00	0	101	80	120				
Molybdenum	52.257	1.0	50.00	0	105	80	120				
Nickel	47.011	1.0	50.00	0	94.0	80	120				
Selenium	41.554	1.0	50.00	0	83.1	80	120				
Silver	50.896	1.0	50.00	0	102	80	120				
Thallium	49.594	1.0	50.00	0	99.2	80	120				
Vanadium	51.632	1.0	50.00	0	103	80	120				
Zinc	48.404	1.0	50.00	0	96.8	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-043A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	4.197	1.0						4.385	4.38	20	
Barium	133.130	1.0						141.0	5.75	20	
Beryllium	0.332	1.0						0.3506	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	15.804	1.0						16.06	1.63	20	
Cobalt	7.749	1.0						8.262	6.40	20	
Copper	17.148	2.0						18.19	5.92	20	
Lead	4.995	1.0						5.179	3.61	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	18.249	1.0						17.63	3.44	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	32.748	1.0						32.94	0.571	20	
Zinc	42.363	1.0						44.48	4.87	20	

Sample ID: **N010801-045A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	33.837	2.0	49.93	0	67.8	75	125				S
Arsenic	47.274	1.0	49.93	3.164	88.4	75	125				
Barium	179.686	1.0	49.93	127.6	104	75	125				
Beryllium	46.039	1.0	49.93	0.1978	91.8	75	125				
Cadmium	44.878	1.0	49.93	0	89.9	75	125				
Chromium	54.985	1.0	49.93	8.763	92.6	75	125				
Cobalt	50.226	1.0	49.93	5.425	89.7	75	125				
Copper	59.906	2.0	49.93	9.734	100	75	125				
Lead	48.664	1.0	49.93	2.991	91.5	75	125				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-045A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	45.293	1.0	49.93	0	90.7	75	125				
Nickel	51.914	1.0	49.93	9.860	84.2	75	125				
Selenium	38.731	1.0	49.93	0	77.6	75	125				
Silver	44.370	1.0	49.93	0	88.9	75	125				
Thallium	44.093	1.0	49.93	0	88.3	75	125				
Vanadium	70.411	1.0	49.93	22.59	95.8	75	125				
Zinc	73.532	1.0	49.93	30.82	85.6	75	125				

Sample ID: **N010802-001A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.353	2.0	50.23	0	36.5	75	125				S
Arsenic	46.772	1.0	50.23	3.189	86.8	75	125				
Barium	127.551	1.0	50.23	81.35	92.0	75	125				
Beryllium	45.438	1.0	50.23	0.2899	89.9	75	125				
Cadmium	41.991	1.0	50.23	0	83.6	75	125				
Chromium	84.488	1.0	50.23	67.62	33.6	75	125				S
Cobalt	70.747	1.0	50.23	36.94	67.3	75	125				S
Copper	66.748	2.0	50.23	24.36	84.4	75	125				
Lead	56.736	1.0	50.23	13.35	86.4	75	125				
Molybdenum	42.718	1.0	50.23	0	85.1	75	125				
Nickel	336.474	1.0	50.23	505.3	-336	75	125				S
Selenium	39.096	1.0	50.23	1.088	75.7	75	125				
Silver	42.297	1.0	50.23	0	84.2	75	125				
Thallium	39.605	1.0	50.23	0	78.9	75	125				
Vanadium	69.643	1.0	50.23	27.91	83.1	75	125				
Zinc	109.184	1.0	50.23	51.31	115	75	125				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010802-001A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.335	2.0	50.13	0	36.6	75	125	18.35	0.0980	20	S
Arsenic	46.452	1.0	50.13	3.189	86.3	75	125	46.77	0.687	20	
Barium	128.986	1.0	50.13	81.35	95.0	75	125	127.6	1.12	20	
Beryllium	46.138	1.0	50.13	0.2899	91.5	75	125	45.44	1.53	20	
Cadmium	42.372	1.0	50.13	0	84.5	75	125	41.99	0.902	20	
Chromium	85.439	1.0	50.13	67.62	35.5	75	125	84.49	1.12	20	S
Cobalt	70.718	1.0	50.13	36.94	67.4	75	125	70.75	0.0412	20	S
Copper	67.540	2.0	50.13	24.36	86.1	75	125	66.75	1.18	20	
Lead	56.595	1.0	50.13	13.35	86.3	75	125	56.74	0.250	20	
Molybdenum	42.702	1.0	50.13	0	85.2	75	125	42.72	0.0379	20	
Nickel	341.134	1.0	50.13	505.3	-328	75	125	336.5	1.38	20	S
Selenium	39.215	1.0	50.13	1.088	76.1	75	125	39.10	0.304	20	
Silver	42.803	1.0	50.13	0	85.4	75	125	42.30	1.19	20	
Thallium	39.660	1.0	50.13	0	79.1	75	125	39.61	0.137	20	
Vanadium	70.384	1.0	50.13	27.91	84.7	75	125	69.64	1.06	20	
Zinc	110.564	1.0	50.13	51.31	118	75	125	109.2	1.26	20	

Sample ID: **N010802-002A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	4.208	1.0						3.797	10.3	20	
Barium	115.369	1.0						107.9	6.71	20	
Beryllium	0.531	1.0						0.4836	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	85.076	1.0						121.4	35.2	20	R
Cobalt	16.686	1.0						21.48	25.1	20	R
Copper	14.450	2.0						14.82	2.56	20	
Lead	33.362	1.0						31.59	5.46	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010802-002A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43678** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	1.0						0	0	20	
Nickel	234.756	1.0						337.4	35.9	20	R
Selenium	0.485	1.0						0.5191	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	43.902	1.0						40.46	8.17	20	
Zinc	49.720	1.0						48.78	1.91	20	

Qualifiers:

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ND Not Detected at the Reporting Limit
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-43681** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43681** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634108**

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

Sample ID: **MB2-43681** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43681** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.195	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									

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
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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB2-43681**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **PBS**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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	0.159	1.0									

Sample ID: **LCS-43681**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **LCSS**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.788	2.0	50.00	0	97.6	80	120				
Arsenic	47.844	1.0	50.00	0	95.7	80	120				
Barium	50.925	1.0	50.00	0	102	80	120				
Beryllium	49.962	1.0	50.00	0	99.9	80	120				
Cadmium	49.941	1.0	50.00	0	99.9	80	120				
Chromium	49.941	1.0	50.00	0	99.9	80	120				
Cobalt	49.451	1.0	50.00	0	98.9	80	120				
Copper	53.848	2.0	50.00	0	108	80	120				
Lead	50.668	1.0	50.00	0	101	80	120				
Molybdenum	51.878	1.0	50.00	0	104	80	120				
Nickel	46.998	1.0	50.00	0	94.0	80	120				
Selenium	41.731	1.0	50.00	0	83.5	80	120				
Silver	49.228	1.0	50.00	0	98.5	80	120				
Thallium	49.407	1.0	50.00	0	98.8	80	120				
Vanadium	51.470	1.0	50.00	0	103	80	120				
Zinc	48.545	1.0	50.00	0	97.1	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

Calculations are based on raw values

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

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CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-068A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43681** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	25.986	2.0	49.98	0	52.0	75	125				S
Arsenic	46.408	1.0	49.98	5.503	81.9	75	125				
Barium	84.829	1.0	49.98	40.54	88.6	75	125				
Beryllium	45.095	1.0	49.98	0.2122	89.8	75	125				
Cadmium	41.948	1.0	49.98	0	83.9	75	125				
Chromium	62.001	1.0	49.98	17.81	88.4	75	125				
Cobalt	54.663	1.0	49.98	10.39	88.6	75	125				
Copper	76.981	2.0	49.98	24.89	104	75	125				
Lead	95.083	1.0	49.98	55.55	79.1	75	125				
Molybdenum	40.917	1.0	49.98	0	81.9	75	125				
Nickel	61.336	1.0	49.98	19.00	84.7	75	125				
Selenium	36.304	1.0	49.98	0.5674	71.5	75	125				S
Silver	41.855	1.0	49.98	0	83.8	75	125				
Thallium	40.726	1.0	49.98	0	81.5	75	125				
Vanadium	101.134	1.0	49.98	44.25	114	75	125				
Zinc	81.778	1.0	49.98	39.20	85.2	75	125				

Sample ID: **N010801-068A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43681** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	27.167	2.0	49.85	0	54.5	75	125	25.99	4.44	20	S
Arsenic	47.584	1.0	49.85	5.503	84.4	75	125	46.41	2.50	20	
Barium	93.795	1.0	49.85	40.54	107	75	125	84.83	10.0	20	
Beryllium	44.396	1.0	49.85	0.2122	88.6	75	125	45.10	1.56	20	
Cadmium	42.459	1.0	49.85	0	85.2	75	125	41.95	1.21	20	
Chromium	62.643	1.0	49.85	17.81	89.9	75	125	62.00	1.03	20	
Cobalt	55.832	1.0	49.85	10.39	91.2	75	125	54.66	2.11	20	
Copper	74.685	2.0	49.85	24.89	99.9	75	125	76.98	3.03	20	
Lead	91.712	1.0	49.85	55.55	72.5	75	125	95.08	3.61	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-068A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	42.195	1.0	49.85	0	84.6	75	125	40.92	3.07	20	
Nickel	67.718	1.0	49.85	19.00	97.7	75	125	61.34	9.89	20	
Selenium	37.305	1.0	49.85	0.5674	73.7	75	125	36.30	2.72	20	S
Silver	42.365	1.0	49.85	0	85.0	75	125	41.86	1.21	20	
Thallium	41.536	1.0	49.85	0	83.3	75	125	40.73	1.97	20	
Vanadium	99.394	1.0	49.85	44.25	111	75	125	101.1	1.73	20	
Zinc	81.806	1.0	49.85	39.20	85.5	75	125	81.78	0.0342	20	

Sample ID: **N010801-069A-DUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	4.327	1.0						4.422	2.17	20	
Barium	77.267	1.0						61.56	22.6	20	R
Beryllium	0.165	1.0						0.1568	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	17.664	1.0						21.81	21.0	20	R
Cobalt	11.434	1.0						9.908	14.3	20	
Copper	30.304	2.0						26.69	12.7	20	
Lead	90.708	1.0						78.29	14.7	20	
Molybdenum	0.301	1.0						0.6215	0	20	
Nickel	21.357	1.0						19.37	9.78	20	
Selenium	0.657	1.0						0.6285	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	56.065	1.0						51.70	8.11	20	
Zinc	132.885	1.0						119.6	10.5	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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-078A-MS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	27.926	2.0	49.93	0	55.9	75	125				S
Arsenic	49.696	1.0	49.93	7.689	84.1	75	125				
Barium	224.579	1.0	49.93	184.3	80.6	75	125				
Beryllium	46.776	1.0	49.93	0.4328	92.8	75	125				
Cadmium	42.010	1.0	49.93	0	84.1	75	125				
Chromium	69.237	1.0	49.93	22.40	93.8	75	125				
Cobalt	54.552	1.0	49.93	9.261	90.7	75	125				
Copper	78.830	2.0	49.93	27.11	104	75	125				
Lead	48.480	1.0	49.93	8.403	80.3	75	125				
Molybdenum	40.397	1.0	49.93	0	80.9	75	125				
Nickel	69.984	1.0	49.93	28.36	83.4	75	125				
Selenium	37.264	1.0	49.93	0	74.6	75	125				S
Silver	44.714	1.0	49.93	0	89.6	75	125				
Thallium	40.745	1.0	49.93	0	81.6	75	125				
Vanadium	77.918	1.0	49.93	24.76	106	75	125				
Zinc	92.642	1.0	49.93	55.67	74.0	75	125				S

Sample ID: **N010801-082A-DUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43681**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	3.837	1.0						3.820	0.445	20	
Barium	142.479	1.0						187.6	27.3	20	R
Beryllium	0.298	1.0						0.2836	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	36.633	1.0						35.09	4.32	20	
Cobalt	13.511	1.0						12.78	5.57	20	
Copper	38.317	2.0						37.06	3.33	20	
Lead	23.170	1.0						21.09	9.42	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-082A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43681** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	1.0						0	0	20	
Nickel	56.803	1.0						53.98	5.11	20	
Selenium	0.738	1.0						0.6556	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	47.538	1.0						46.82	1.52	20	
Zinc	50.150	1.0						47.89	4.61	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-43692** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.207	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	0.183	1.0									

Sample ID: **MB2-43692** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.180	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									

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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CLIENT: Geocon Consultants, Inc.
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Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB2-43692** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **PBS** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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	0.200	1.0									

Sample ID: **LCS-43692** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **LCSS** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.763	2.0	50.00	0	93.5	80	120				
Arsenic	46.471	1.0	50.00	0	92.9	80	120				
Barium	49.129	1.0	50.00	0	98.3	80	120				
Beryllium	48.879	1.0	50.00	0	97.8	80	120				
Cadmium	47.724	1.0	50.00	0	95.4	80	120				
Chromium	48.767	1.0	50.00	0	97.5	80	120				
Cobalt	47.839	1.0	50.00	0	95.7	80	120				
Copper	51.749	2.0	50.00	0	103	80	120				
Lead	48.721	1.0	50.00	0	97.4	80	120				
Molybdenum	49.872	1.0	50.00	0	99.7	80	120				
Nickel	48.506	1.0	50.00	0	97.0	80	120				
Selenium	40.836	1.0	50.00	0	81.7	80	120				
Silver	48.714	1.0	50.00	0	97.4	80	120				
Thallium	47.285	1.0	50.00	0	94.6	80	120				
Vanadium	50.662	1.0	50.00	0	101	80	120				
Zinc	47.073	1.0	50.00	0	94.1	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-001A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	15.505	2.0	50.18	0	30.9	75	125				S
Arsenic	40.399	1.0	50.18	0	80.5	75	125				
Barium	44.715	1.0	50.18	0.6060	87.9	75	125				
Beryllium	40.954	1.0	50.18	0	81.6	75	125				
Cadmium	37.645	1.0	50.18	0	75.0	75	125				
Chromium	54.990	1.0	50.18	22.50	64.7	75	125				S
Cobalt	61.631	1.0	50.18	21.57	79.8	75	125				
Copper	149.033	2.0	50.18	77.29	143	75	125				S
Lead	39.669	1.0	50.18	0.2959	78.5	75	125				
Molybdenum	39.917	1.0	50.18	0	79.6	75	125				
Nickel	49.478	1.0	50.18	11.35	76.0	75	125				
Selenium	37.082	1.0	50.18	1.036	71.8	75	125				S
Silver	37.853	1.0	50.18	0	75.4	75	125				
Thallium	36.044	1.0	50.18	0	71.8	75	125				S
Vanadium	129.971	1.0	50.18	63.98	132	75	125				S
Zinc	83.659	1.0	50.18	34.11	98.7	75	125				

Sample ID: **N010801-001A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	13.265	2.0	49.88	0	26.6	75	125	15.51	15.6	20	S
Arsenic	37.983	1.0	49.88	0	76.2	75	125	40.40	6.16	20	
Barium	42.372	1.0	49.88	0.6060	83.7	75	125	44.72	5.38	20	
Beryllium	40.193	1.0	49.88	0	80.6	75	125	40.95	1.87	20	
Cadmium	35.835	1.0	49.88	0	71.9	75	125	37.65	4.93	20	S
Chromium	55.383	1.0	49.88	22.50	65.9	75	125	54.99	0.712	20	S
Cobalt	61.806	1.0	49.88	21.57	80.7	75	125	61.63	0.284	20	
Copper	164.836	2.0	49.88	77.29	176	75	125	149.0	10.1	20	S
Lead	37.898	1.0	49.88	0.2959	75.4	75	125	39.67	4.57	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-001A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/15/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43692**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	37.706	1.0	49.88	0	75.6	75	125	39.92	5.70	20	
Nickel	48.124	1.0	49.88	11.35	73.7	75	125	49.48	2.77	20	S
Selenium	35.099	1.0	49.88	1.036	68.3	75	125	37.08	5.49	20	S
Silver	36.050	1.0	49.88	0	72.3	75	125	37.85	4.88	20	S
Thallium	33.857	1.0	49.88	0	67.9	75	125	36.04	6.26	20	S
Vanadium	130.910	1.0	49.88	63.98	134	75	125	130.0	0.720	20	S
Zinc	84.500	1.0	49.88	34.11	101	75	125	83.66	1.00	20	

Sample ID: **N010801-002A-DUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/15/2013**	RunNo: **90004**
Client ID: **ZZZZZZ**	Batch ID: **43692**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/15/2013**	SeqNo: **1634152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	2.763	1.0						2.934	6.03	20	
Barium	62.691	1.0						57.64	8.39	20	
Beryllium	0.325	1.0						0.2585	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	15.193	1.0						14.81	2.56	20	
Cobalt	7.918	1.0						7.009	12.2	20	
Copper	19.658	2.0						15.96	20.8	20	R
Lead	3.586	1.0						2.874	22.1	20	R
Molybdenum	ND	1.0						0	0	20	
Nickel	12.583	1.0						10.25	20.4	20	R
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	25.978	1.0						27.90	7.13	20	
Zinc	41.212	1.0						35.67	14.4	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

Calculations are based on raw values

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

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **N010801-017A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.862	2.0	50.05	0	35.7	75	125				S
Arsenic	42.564	1.0	50.05	2.527	80.0	75	125				
Barium	132.634	1.0	50.05	95.78	73.6	75	125				S
Beryllium	41.835	1.0	50.05	0.2605	83.1	75	125				
Cadmium	38.817	1.0	50.05	0	77.6	75	125				
Chromium	57.722	1.0	50.05	23.43	68.5	75	125				S
Cobalt	50.326	1.0	50.05	11.08	78.4	75	125				
Copper	70.176	2.0	50.05	27.72	84.8	75	125				
Lead	46.185	1.0	50.05	5.556	81.2	75	125				
Molybdenum	37.450	1.0	50.05	0	74.8	75	125				S
Nickel	54.112	1.0	50.05	20.38	67.4	75	125				S
Selenium	34.966	1.0	50.05	0.3795	69.1	75	125				S
Silver	41.952	1.0	50.05	0	83.8	75	125				
Thallium	38.440	1.0	50.05	0	76.8	75	125				
Vanadium	75.962	1.0	50.05	38.82	74.2	75	125				S
Zinc	72.559	1.0	50.05	38.69	67.7	75	125				S

Sample ID: **N010801-018A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	3.386	1.0						3.509	3.57	20	
Barium	153.335	1.0						240.6	44.3	20	R
Beryllium	0.345	1.0						0.2600	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	16.456	1.0						24.81	40.5	20	R
Cobalt	8.967	1.0						9.644	7.28	20	
Copper	20.844	2.0						20.85	0.0453	20	
Lead	4.617	1.0						4.027	13.7	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
Calculations are based on raw values
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

TestCode: 6010_S

Sample ID: **N010801-018A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90004**
Client ID: **ZZZZZZ** Batch ID: **43692** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/15/2013** SeqNo: **1634165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	1.0						0	0	20	
Nickel	21.717	1.0						43.79	67.4	20	R
Selenium	ND	1.0						0.2848	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	26.750	1.0						29.46	9.66	20	
Zinc	43.217	1.0						37.92	13.1	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
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Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB1-43682**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **PBS**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **MB2-43682**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **PBS**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-43682**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **LCSS**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.689	5.0	50.00	0	99.4	80	120				

Sample ID: **N010801-003A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	44.858	5.0	50.18	3.456	82.5	75	125				

Sample ID: **N010801-003A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.218	5.0	50.18	3.456	83.2	75	125	44.86	0.799	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **N010801-006A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.601	5.0						2.338	0	20	

Sample ID: **N010801-024A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	44.868	5.0	49.95	4.994	79.8	75	125				

Sample ID: **N010801-026A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43682**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.354	5.0						5.524	3.13	20	

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB1-43683**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **PBS**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **MB2-43683**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **PBS**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-43683**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **LCSS**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.384	5.0	50.00	0	98.8	80	120				

Sample ID: **N010801-041A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	44.983	5.0	49.80	5.806	78.7	75	125				

Sample ID: **N010801-041A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.404	5.0	50.05	5.806	81.1	75	125	44.98	3.11	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
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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

TestCode: 6010_SPB

Sample ID: **N010801-042A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.542	5.0						4.993	0	20	

Sample ID: **N010801-055A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.202	5.0	50.13	2.058	88.1	75	125				

Sample ID: **N010801-056A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90003**
Client ID: **ZZZZZZ**	Batch ID: **43683**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/16/2013**	SeqNo: **1633621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	8.255	5.0						7.318	12.0	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

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: **MB-43693**	SampType: **MBLK**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/15/2013**	RunNo: **89983**
Client ID: **PBW**	Batch ID: **43693**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/16/2013**	SeqNo: **1634339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.0050									

Sample ID: **LCS-43693**	SampType: **LCS**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/15/2013**	RunNo: **89983**
Client ID: **LCSW**	Batch ID: **43693**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/16/2013**	SeqNo: **1634340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.529	0.0050	0.5000	0	106	85	115				

Sample ID: **N010801-060A-DUP**	SampType: **DUP**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/15/2013**	RunNo: **89983**
Client ID: **ZZZZZZ**	Batch ID: **43693**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/16/2013**	SeqNo: **1634342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.0050						0	0	20	

Sample ID: **N010801-079A-MS**	SampType: **MS**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/15/2013**	RunNo: **89983**
Client ID: **ZZZZZZ**	Batch ID: **43693**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/16/2013**	SeqNo: **1634346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.524	0.0050	0.5000	0	105	75	125				

Sample ID: **N010801-079A-MSD**	SampType: **MSD**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/15/2013**	RunNo: **89983**
Client ID: **ZZZZZZ**	Batch ID: **43693**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/16/2013**	SeqNo: **1634347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.530	0.0050	0.5000	0	106	75	125	0.5241	1.11	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
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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

TestCode: 7471_S

Sample ID: **LCS-43684**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **LCSS**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.438	0.099	0.4112	0	106	80	120				

Sample ID: **MB1-43684**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633954**

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

Sample ID: **MB2-43684**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633957**

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

Sample ID: **N010801-001A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.582	0.099						1.474	7.06	20	

Sample ID: **N010801-001A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.838	0.10	0.4202	1.474	86.6	75	125				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **N010801-001A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.966	0.099	0.4126	1.474	119	75	125	1.838	6.71	20	

Sample ID: **N010801-018A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.039	0.10						0.03050	0	20	

Sample ID: **N010801-018A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43684**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.469	0.099	0.4126	0.03050	106	75	125				

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **LCS-43685**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **LCSS**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.433	0.10	0.4223	0	102	80	120				

Sample ID: **MB1-43685**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633955**

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

Sample ID: **MB2-43685**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.099									

Sample ID: **N010801-043A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10						0.04552	0	20	

Sample ID: **N010801-043A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.469	0.10	0.4209	0.04552	101	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **N010801-043A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.456	0.10	0.4181	0.04552	98.2	75	125	0.4687	2.67	20	

Sample ID: **N010801-065A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1634000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.319	0.10						0.3269	2.47	20	

Sample ID: **N010801-065A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43685**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1634001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.908	0.10	0.4209	0.3269	138	75	125				S

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **LCS-43686**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **LCSS**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.397	0.10	0.4174	0	95.1	80	120				

Sample ID: **MB1-43686**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633956**

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

Sample ID: **MB2-43686**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **PBS**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1633959**

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

Sample ID: **N010801-074A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1634010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.078	0.099						0.08009	0	20	

Sample ID: **N010801-074A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1634011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.470	0.10	0.4153	0.08009	94.0	75	125				

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

Calculations are based on raw values

- 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

TestCode: 7471_S

Sample ID: **N010801-074A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90008**
Client ID: **ZZZZZZ**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/15/2013**	SeqNo: **1634012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.442	0.099	0.4139	0.08009	87.4	75	125	0.4704	6.23	20	

Sample ID: **N010802-004A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90009**
Client ID: **ZZZZZZ**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/16/2013**	SeqNo: **1634027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.141	0.10						0.08987	44.5	20	R

Sample ID: **N010802-004A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/14/2013**	RunNo: **90009**
Client ID: **ZZZZZZ**	Batch ID: **43686**	TestNo: **EPA 7471A**	**EPA 7471**	Analysis Date: **8/16/2013**	SeqNo: **1634028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.571	0.10	0.4230	0.08987	114	75	125				

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **LCS-43680** SampType: **LCS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **LCSS** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	65.003	1.0	83.30	0	78.0	52	126				
Surr: p-Terphenyl	7.232		6.670		108	59	127				

Sample ID: **MB1-43680** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **PBS** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	5.557		6.670		83.3	59	127				

Sample ID: **N010801-049A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **ZZZZZZ** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	1.171	1.0						1.368	15.5	20	
ORO	1.564	1.0						1.874	18.0	20	
Surr: p-Terphenyl	6.050		6.648		91.0	59	127		0		

Sample ID: **MB2-43680** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **PBS** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	6.108		6.670		91.6	59	127				

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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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **N010801-076A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **ZZZZZZ** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	4.927	1.0						1.647	99.8	20	R
ORO	7.423	1.0						3.424	73.7	20	R
Surr: p-Terphenyl	5.415		6.659		81.3	59	127		0		

Sample ID: **N010801-049A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **ZZZZZZ** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	52.368	1.0	83.47	1.368	61.1	13	129				
Surr: p-Terphenyl	5.801		6.683		86.8	59	127				

Sample ID: **N010801-049A-MSD** SampType: **MSD** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **ZZZZZZ** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	61.775	1.0	83.49	1.368	72.3	13	129	52.37	16.5	20	
Surr: p-Terphenyl	6.119		6.686		91.5	59	127		0		

Sample ID: **N010801-076A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/14/2013** RunNo: **89998**
Client ID: **ZZZZZZ** Batch ID: **43680** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	58.714	1.0	83.49	1.647	68.3	13	129				
Surr: p-Terphenyl	6.475		6.686		96.9	59	127				

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
Calculations are based on raw values
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

TestCode: 8015_S_DM LL

Sample ID: **LCS-43691** SampType: **LCS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **LCSS** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	71.774	1.0	83.30	0	86.2	52	126				
Surr: p-Terphenyl	6.680		6.670		100	59	127				

Sample ID: **N010801-044A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **ZZZZZZ** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	4.515	1.0						2.166	70.3	20	R
ORO	6.172	1.0						3.197	63.5	20	R
Surr: p-Terphenyl	5.003		6.657		75.2	59	127		0		

Sample ID: **MB1-43691** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **PBS** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	5.868		6.670		88.0	59	127				

Sample ID: **MB2-43691** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **PBS** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	5.573		6.670		83.5	59	127				

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
Calculations are based on raw values
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

TestCode: 8015_S_DM LL

Sample ID: **N010801-020A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **ZZZZZZ** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/15/2013** SeqNo: **1633479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	1.002	1.0						1.137	12.6	20	
ORO	1.167	1.0						1.412	19.0	20	
Surr: p-Terphenyl	5.567		6.657		83.6	59	127		0		

Sample ID: **N010801-020A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **ZZZZZZ** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/16/2013** SeqNo: **1633487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	57.067	1.0	83.38	1.137	67.1	13	129				
Surr: p-Terphenyl	6.456		6.677		96.7	59	127				

Sample ID: **N010801-044A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **ZZZZZZ** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/16/2013** SeqNo: **1633488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	57.171	1.0	83.13	2.166	66.2	13	129				
Surr: p-Terphenyl	5.709		6.657		85.8	59	127				

Sample ID: **N010801-044A-MSD** SampType: **MSD** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/15/2013** RunNo: **90002**
Client ID: **ZZZZZZ** Batch ID: **43691** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/16/2013** SeqNo: **1633489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	59.068	1.0	83.58	2.166	68.1	13	129	57.17	3.26	20	
Surr: p-Terphenyl	5.874		6.692		87.8	59	127		0		

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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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **LCS-43707** SampType: **LCS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/19/2013** RunNo: **90034**
Client ID: **LCSS** Batch ID: **43707** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/19/2013** SeqNo: **1635246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	64.335	1.0	83.30	0	77.2	52	126				
Surr: p-Terphenyl	6.747		6.670		101	59	127				

Sample ID: **MB1-43707** SampType: **MBLK** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/19/2013** RunNo: **90034**
Client ID: **PBS** Batch ID: **43707** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/19/2013** SeqNo: **1635247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	5.984		6.670		89.7	59	127				

Sample ID: **N010811-001A-DUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/19/2013** RunNo: **90034**
Client ID: **ZZZZZZ** Batch ID: **43707** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/19/2013** SeqNo: **1635249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	6.046	1.0						6.610	8.93	20	
ORO	19.473	1.0						20.79	6.54	20	
Surr: p-Terphenyl	6.387		6.666		95.8	59	127		0		

Sample ID: **N010811-001A-MS** SampType: **MS** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/19/2013** RunNo: **90034**
Client ID: **ZZZZZZ** Batch ID: **43707** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/19/2013** SeqNo: **1635259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	58.283	1.0	83.11	6.610	62.2	13	129				
Surr: p-Terphenyl	6.556		6.654		98.5	59	127				

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
Calculations are based on raw values
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

TestCode: 8015_S_DM LL

Sample ID: **N010811-001A-MSD** SampType: **MSD** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/19/2013** RunNo: **90034**
Client ID: **ZZZZZZ** Batch ID: **43707** TestNo: **EPA 8015B** **EPA 3550B** Analysis Date: **8/19/2013** SeqNo: **1635260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	58.340	1.0	83.47	6.610	62.0	13	129	58.28	0.0979	20	
Surr: p-Terphenyl	6.699		6.683		100	59	127		0		

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130814LCS**	SampType: **LCS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89973**
Client ID: **LCSS**	Batch ID: **E13VS084**	TestNo: **EPA 8015B**		Analysis Date: **8/14/2013**	SeqNo: **1631573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.848	1.0	5.000	0	97.0	77	122				
Surr: Chlorobenzene - d5	91.380		100.0		91.4	51	136				

Sample ID: **E130814MB1**	SampType: **MBLK**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89973**
Client ID: **PBS**	Batch ID: **E13VS084**	TestNo: **EPA 8015B**		Analysis Date: **8/14/2013**	SeqNo: **1631574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.075	1.0									
Surr: Chlorobenzene - d5	90.174		100.0		90.2	51	136				

Sample ID: **N010801-042AMS**	SampType: **MS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89973**
Client ID: **ZZZZZZ**	Batch ID: **E13VS084**	TestNo: **EPA 8015B**		Analysis Date: **8/14/2013**	SeqNo: **1631577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.173	1.0	5.000	0.06400	102	41	132				
Surr: Chlorobenzene - d5	95.185		100.0		95.2	51	136				

Sample ID: **N010801-042AMSD**	SampType: **MSD**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89973**
Client ID: **ZZZZZZ**	Batch ID: **E13VS084**	TestNo: **EPA 8015B**		Analysis Date: **8/14/2013**	SeqNo: **1631578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.291	1.0	5.000	0.06400	105	41	132	5.173	2.26	20	
Surr: Chlorobenzene - d5	88.414		100.0		88.4	51	136		0		

Sample ID: **N010801-043ADUP**	SampType: **DUP**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89973**
Client ID: **ZZZZZZ**	Batch ID: **E13VS084**	TestNo: **EPA 8015B**		Analysis Date: **8/14/2013**	SeqNo: **1631579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.073	1.0						0.05800	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

Calculations are based on raw values

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

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **N010801-043ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89973**
Client ID: **ZZZZZZ** Batch ID: **E13VS084** TestNo: **EPA 8015B** Analysis Date: **8/14/2013** SeqNo: **1631579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	88.897		100.0		88.9	51	136		0		

Sample ID: **E130814MB2** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89973**
Client ID: **PBS** Batch ID: **E13VS084** TestNo: **EPA 8015B** Analysis Date: **8/14/2013** SeqNo: **1632160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.061	1.0									
Surr: Chlorobenzene - d5	91.603		100.0		91.6	51	136				

Sample ID: **N010801-065AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89973**
Client ID: **ZZZZZZ** Batch ID: **E13VS084** TestNo: **EPA 8015B** Analysis Date: **8/14/2013** SeqNo: **1632162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.436	1.0	5.000	0.05700	87.6	41	132				
Surr: Chlorobenzene - d5	82.142		100.0		82.1	51	136				

Sample ID: **N010801-066ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89973**
Client ID: **ZZZZZZ** Batch ID: **E13VS084** TestNo: **EPA 8015B** Analysis Date: **8/14/2013** SeqNo: **1632164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.057	1.0						0.06900	0	20	
Surr: Chlorobenzene - d5	87.986		100.0		88.0	51	136		0		

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130815LCS**	SampType: **LCS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89989**
Client ID: **LCSS**	Batch ID: **E13VS085**	TestNo: **EPA 8015B**		Analysis Date: **8/15/2013**	SeqNo: **1632861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.340	1.0	5.000	0	107	77	122				
Surr: Chlorobenzene - d5	100.301		100.0		100	51	136				

Sample ID: **E130815MB1**	SampType: **MBLK**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89989**
Client ID: **PBS**	Batch ID: **E13VS085**	TestNo: **EPA 8015B**		Analysis Date: **8/15/2013**	SeqNo: **1632862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.065	1.0									
Surr: Chlorobenzene - d5	98.423		100.0		98.4	51	136				

Sample ID: **N010801-002AMS**	SampType: **MS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89989**
Client ID: **ZZZZZZ**	Batch ID: **E13VS085**	TestNo: **EPA 8015B**		Analysis Date: **8/15/2013**	SeqNo: **1632870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.357	1.0	5.000	0.05600	106	41	132				
Surr: Chlorobenzene - d5	99.334		100.0		99.3	51	136				

Sample ID: **N010801-002AMSD**	SampType: **MSD**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89989**
Client ID: **ZZZZZZ**	Batch ID: **E13VS085**	TestNo: **EPA 8015B**		Analysis Date: **8/15/2013**	SeqNo: **1632871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.411	1.0	5.000	0.05600	107	41	132	5.357	1.00	20	
Surr: Chlorobenzene - d5	98.353		100.0		98.4	51	136		0		

Sample ID: **N010801-068ADUP**	SampType: **DUP**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **89989**
Client ID: **ZZZZZZ**	Batch ID: **E13VS085**	TestNo: **EPA 8015B**		Analysis Date: **8/15/2013**	SeqNo: **1632874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.059	1.0						0.06600	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **N010801-068ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89989**
Client ID: **ZZZZZZ** Batch ID: **E13VS085** TestNo: **EPA 8015B** Analysis Date: **8/15/2013** SeqNo: **1632874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	101.390		100.0		101	51	136		0		

Sample ID: **E130815MB2** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89989**
Client ID: **PBS** Batch ID: **E13VS085** TestNo: **EPA 8015B** Analysis Date: **8/15/2013** SeqNo: **1632877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.052	1.0									
Surr: Chlorobenzene - d5	99.412		100.0		99.4	51	136				

Sample ID: **N010801-078AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89989**
Client ID: **ZZZZZZ** Batch ID: **E13VS085** TestNo: **EPA 8015B** Analysis Date: **8/15/2013** SeqNo: **1632879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.205	1.0	5.000	0.05600	103	41	132				
Surr: Chlorobenzene - d5	94.915		100.0		94.9	51	136				

Sample ID: **N010801-069ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **89989**
Client ID: **ZZZZZZ** Batch ID: **E13VS085** TestNo: **EPA 8015B** Analysis Date: **8/15/2013** SeqNo: **1633191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.064	1.0						0.07200	0	20	
Surr: Chlorobenzene - d5	82.862		100.0		82.9	51	136		0		

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130816LCS**	SampType: **LCS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90012**
Client ID: **LCSS**	Batch ID: **E13VS086**	TestNo: **EPA 8015B**		Analysis Date: **8/16/2013**	SeqNo: **1634059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.851	1.0	5.000	0	97.0	77	122				
Surr: Chlorobenzene - d5	95.632		100.0		95.6	51	136				

Sample ID: **E130816MB1**	SampType: **MBLK**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90012**
Client ID: **PBS**	Batch ID: **E13VS086**	TestNo: **EPA 8015B**		Analysis Date: **8/16/2013**	SeqNo: **1634060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.063	1.0									
Surr: Chlorobenzene - d5	92.295		100.0		92.3	51	136				

Sample ID: **N010801-077AMS**	SampType: **MS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90012**
Client ID: **ZZZZZZ**	Batch ID: **E13VS086**	TestNo: **EPA 8015B**		Analysis Date: **8/16/2013**	SeqNo: **1634063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.035	1.0	5.000	0.06800	99.3	41	132				
Surr: Chlorobenzene - d5	94.603		100.0		94.6	51	136				

Sample ID: **N010801-077AMSD**	SampType: **MSD**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90012**
Client ID: **ZZZZZZ**	Batch ID: **E13VS086**	TestNo: **EPA 8015B**		Analysis Date: **8/16/2013**	SeqNo: **1634064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.124	1.0	5.000	0.06800	101	41	132	5.035	1.75	20	
Surr: Chlorobenzene - d5	95.643		100.0		95.6	51	136		0		

Sample ID: **N010801-076ADUP**	SampType: **DUP**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90012**
Client ID: **ZZZZZZ**	Batch ID: **E13VS086**	TestNo: **EPA 8015B**		Analysis Date: **8/16/2013**	SeqNo: **1634313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.073	1.0						0.05600	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

Calculations are based on raw values

- 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

TestCode: 8015GAS_S

Sample ID: **N010801-076ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90012**
Client ID: **ZZZZZZ** Batch ID: **E13VS086** TestNo: **EPA 8015B** Analysis Date: **8/16/2013** SeqNo: **1634313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	89.505		100.0		89.5	51	136		0		

Sample ID: **E130816MB2** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90012**
Client ID: **PBS** Batch ID: **E13VS086** TestNo: **EPA 8015B** Analysis Date: **8/16/2013** SeqNo: **1634503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.051	1.0									
Surr: Chlorobenzene - d5	100.138		100.0		100	51	136				

Sample ID: **N010801-004AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90012**
Client ID: **ZZZZZZ** Batch ID: **E13VS086** TestNo: **EPA 8015B** Analysis Date: **8/16/2013** SeqNo: **1634505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.407	1.0	5.000	0.05300	107	41	132				
Surr: Chlorobenzene - d5	100.484		100.0		100	51	136				

Sample ID: **N010801-012ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90012**
Client ID: **ZZZZZZ** Batch ID: **E13VS086** TestNo: **EPA 8015B** Analysis Date: **8/16/2013** SeqNo: **1634507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.053	1.0						0.06500	0	20	
Surr: Chlorobenzene - d5	96.593		100.0		96.6	51	136		0		

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **E130819LCS** SampType: **LCS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90026**
Client ID: **LCSS** Batch ID: **E13VS087** TestNo: **EPA 8015B** Analysis Date: **8/19/2013** SeqNo: **1634614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.907	1.0	5.000	0	98.1	77	122				
Surr: Chlorobenzene - d5	91.171		100.0		91.2	51	136				

Sample ID: **E130819MB1** SampType: **MBLK** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90026**
Client ID: **PBS** Batch ID: **E13VS087** TestNo: **EPA 8015B** Analysis Date: **8/19/2013** SeqNo: **1634615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.073	1.0									
Surr: Chlorobenzene - d5	86.876		100.0		86.9	51	136				

Sample ID: **N010801-038AMS** SampType: **MS** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90026**
Client ID: **ZZZZZZ** Batch ID: **E13VS087** TestNo: **EPA 8015B** Analysis Date: **8/19/2013** SeqNo: **1634621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.908	1.0	5.000	0.05300	97.1	41	132				
Surr: Chlorobenzene - d5	88.733		100.0		88.7	51	136				

Sample ID: **N010801-038AMSD** SampType: **MSD** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90026**
Client ID: **ZZZZZZ** Batch ID: **E13VS087** TestNo: **EPA 8015B** Analysis Date: **8/19/2013** SeqNo: **1634622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.878	1.0	5.000	0.05300	96.5	41	132	4.908	0.613	20	
Surr: Chlorobenzene - d5	88.242		100.0		88.2	51	136		0		

Sample ID: **N010801-028ADUP** SampType: **DUP** TestCode: **8015GAS_S** Units: **mg/Kg** Prep Date: RunNo: **90026**
Client ID: **ZZZZZZ** Batch ID: **E13VS087** TestNo: **EPA 8015B** Analysis Date: **8/19/2013** SeqNo: **1634624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.054	1.0						0.06200	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: **N010801-028ADUP**	SampType: **DUP**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90026**
Client ID: **ZZZZZZ**	Batch ID: **E13VS087**	TestNo: **EPA 8015B**		Analysis Date: **8/19/2013**	SeqNo: **1634624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	84.865		100.0		84.9	51	136		0		

Sample ID: **E130819MB2**	SampType: **MBLK**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90026**
Client ID: **PBS**	Batch ID: **E13VS087**	TestNo: **EPA 8015B**		Analysis Date: **8/19/2013**	SeqNo: **1634629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.052	1.0									
Surr: Chlorobenzene - d5	91.089		100.0		91.1	51	136				

Sample ID: **N010801-018ADUP**	SampType: **DUP**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90026**
Client ID: **ZZZZZZ**	Batch ID: **E13VS087**	TestNo: **EPA 8015B**		Analysis Date: **8/19/2013**	SeqNo: **1634706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.055	1.0						0.05600	0	20	
Surr: Chlorobenzene - d5	92.464		100.0		92.5	51	136		0		

Sample ID: **N010801-017AMS**	SampType: **MS**	TestCode: **8015GAS_S**	Units: **mg/Kg**	Prep Date:	RunNo: **90026**
Client ID: **ZZZZZZ**	Batch ID: **E13VS087**	TestNo: **EPA 8015B**		Analysis Date: **8/19/2013**	SeqNo: **1634708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.709	1.0	5.000	0.05300	93.1	41	132				
Surr: Chlorobenzene - d5	85.758		100.0		85.8	51	136				

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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **N010801-018A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **89972**
Client ID: **ZZZZZZ** Batch ID: **R89972** TestNo: **EPA 9045C** Analysis Date: **8/14/2013** SeqNo: **1631551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.520	0.10						8.610	1.05	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

Sample ID: **N010801-038A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **89972**
Client ID: **ZZZZZZ** Batch ID: **R89972** TestNo: **EPA 9045C** Analysis Date: **8/14/2013** SeqNo: **1631557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.390	0.10						8.390	0	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

Sample ID: **N010801-043A-DUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **89972**
Client ID: **ZZZZZZ** Batch ID: **R89972** TestNo: **EPA 9045C** Analysis Date: **8/14/2013** SeqNo: **1631559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.810	0.10						8.700	1.26	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
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: _____ Quote #: _____

Logged By: MAC Date: 7/18/13

NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Condition Upon Receipt:
1. CHILLED 2.6 IR2 Y☑ N☐ 4. CUSTODY SEAL Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: **Geocon Consultants, Inc.** Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: City Livermore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TKS Project #: E8560-02-54 Sampler: (Printed Name) C. MERRITT, D. WATTS, M. O'BRIEN (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 8-13-13 Time: 1800 Received by: (Signature and Printed Name) HERSEY SAYLES Date: 14AUG13 Time: 0847
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: CM 8-13-13 (Print Name / Date)
CM (Signature)

Send Report To: Attn: Co: A/A Addr: City: State: Zip:

Bill To: Attn: Co: A/A Addr: City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8082 (PCB) | 8260B (Volatiles) | 8270C (BNA) | 6010B (Total Metal) | 8015B (GRO) & 8021 (BTEX) | 8015B (DRO) + MO | TITLE 22 / CAM 17 (6010 / 7000) | MERCURY 7245 | TOTAL Pb

SPECIFY APPROPRIATE MATRIX: SEDIMENT | SOLID | SOIL | DRINKING WATER | GROUND WATER | WASTEWATER | STORMWATER | AQUEOUS

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	PRESERVATION
	N010801-1	EMS1-0	8-12-13	0930	E	1	T	P	C
	-2	-1		35				
	-3	-2.5		35				
	-4	-5.5		40				
	-5	-11.5		55				
	-6	-15.5		1000				
	-7	CCTV6-0		1525				
	-8	-1		30				
	-9	-2.5		30				
	-10	-5.5		35				

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

REMARKS

• TAT starts 8 a.m. following day if samples received after 5 p.m.

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

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

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

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8560-02-54 Quote #: CONTRACT RATES 04A3578

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): C. MERRITT

Signature: CM

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt:
1. CHILLED 2.6 Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: **Geocon Consultant, Inc.** Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550 TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) C. MERRITT, D. WATTS, M. O'BRIEN (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date: 5-13-13	Time: 1800	Received by: (Signature and Printed Name) [illegible] HERSEY SAYAS	Date: 5/14/13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To:
Attn: E-mail:
Company: SAME AS ABOVE
Address:
City: State: Zip:

Send Report To:
Attn: E-mail:
Company: SAME AS ABOVE
Addrress:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years

Storage Fees (applies when storage is requested):
■ Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.

Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX: SOIL/SEDIMENT/SLUDGE; SOLIDS/WIPES/FILTERS; WATER-DRINKING/GROUND; WATER-STORM/WASTE; AQUEOUS/LAYERED-OIL

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(HCID) +MO	8015B(DRO)	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals	6010B-200.7 Metals LEAD	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	pH EPA 9045	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	ND10801-11	EMS2-0	5-12-13	1030	X		X		X								X		E	1	T P	C	
2	-12	-1		30	X				X														
3	-13	-2.5		35		X				X						X							
4	-14	-5.5		40	X	X			X														
5	-15	-11.5		55	X				X	X													
6	-16	-15.5		1100		X				X						X							
7	-17	EMS1-0		1505	X	X			X														
8	-18	-1		10	X				X							X							
9	-19	-2.5		15	X					X													
10	-20	-5.5		20		X			X							X							

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM	10% DISCOUNT 10th BUSINESS DAY 5:30 PM

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TAT is 10-15 business days, Dioxin and Furans 21 business days.

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

Rev. 2012-0416

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: ES560-02-54 Quote #:

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): C.MERRITT

Signature: CM

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt

1. CHILLED 2C 1R3	Y☑ N☐	4. SEALED	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

Client: **Geocon Consultant, Inc.**

Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550

TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS-SR4/242 TOS Project #: ES560-02-54

Sampler: (Printed Name) C.MERRITT, D.WATTS, B.O'BRIEN (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date: 3-13-13	Time: 1800	Received by: (Signature and Printed Name) HERSEY SMYTH	Date: 4/4/13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Send Report To: Attn: E-mail: Company: SAME AS ABOVE Addrress: City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years

Storage Fees (applies when storage is requested):
■ Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.

Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX: SOIL/SEDIMENT/SLUDGE; SOLIDS/WIPES/FILTERS; WATER-DRINKING/GROUND; WATER-STORM/WASTE; AQUEOUS/LAYERED-OIL

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO) / 8015B(HCID) FMO	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals	6010B-200.7 Metals LEAD	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	pH EPA 9045	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	NO10801-21	CCTV 7-0	8-12-13	1415								X					X	E	1	T	P	4	
2	-22	-1		15		X						X										
3	-23	-2.5		20		X			X						X							
4	-24	-5.5		25					X			X										
5	-25	-8.5		30					X													
6	-26	CCTV 4-0										X										
7	-27	-1				X						X										
8	-28	-2.5				X			X						X							
9	-29	-5.5							X			X										
10	-30	-8.5							X													

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM	10% DISCOUNT 10th BUSINESS DAY 5:30 PM

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TAT is 10-15 business days, Dioxin and Furans 21 business days.

Q A / Q C: RTNE ☐ CT ☑ Legal ☐ SWRCB ☐ Logcode ____ OTHER ____

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED ATECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8560-02-54 Quote #:

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): CM

Signature: CM

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport
☐ Client ☐ ATL
☐ FedEx ☐ OnTrac
☐ GSO
☐ Other:

Sample Condition Upon Receipt
1. CHILLED 2.4 1.2 Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: **Geocon Consultant, Inc.**
Address: 6671 Brisa Street
City: Livermore State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) C.M. DW. M.O (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 8-13-13 Time: 1800 Received by: (Signature and Printed Name) HEIDI SAYLES Date: 14AUG13 Time: 0847

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Bill To:
Attn: E-mail:
Company: SAME AS ABOVE
Address:
City: State: Zip:

Send Report To:
Attn: E-mail:
Company: SAME AS ABOVE
Addrress:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years.
Storage Fees (applies when storage is requested):
■ Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.
Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B(GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)/8015B(HCID) TPHd	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals LEAD	6010B-200.7 Metals	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	pH EPA 9045	SOIL/SEDIMENT/SLUDGE	SOLIDS/WIPES/FILTERS	WATER-DRINKING/GROUND	WATER-STORM/WASTE	AQUEOUS/LAYERED-OIL	TAT	Container(s) #	Type	PRESERVATION	REMARKS
1	N01089-31	CCTV 3 -0	8-12-13	0635								X											E	1	T	P	4	
2	-32	-1		40	X							X															
3	-33	-2.5		45	X				X					X													
4	-34	-5.5		50			X					X															
5	-35	-8.5		0900			X		X																		
6	-36	CCTV 4 -0		1155								X															
7	-37	-1		1200	X							X															
8	-38	-2.5		00	X				X					X													
9	-39	-5.5		05			X					X															
10	-40	-8.5		10			X		X																		

Q A / Q C
RTNE ☐
CT ☑
Legal ☐
SWRCB ☐
Logcode____
OTHER

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM ☐	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM ☐	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM ☐	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM ☐	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM ☐	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM ☐	10% DISCOUNT 10th BUSINESS DAY 5:30 PM ☐

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Rev. 2012-0416

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED ATECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8560 02-54 Quote #: 04A3578

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): CM

Signature: CM

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt

1. CHILLED 2.6 1B2	Y☑ N☐	4. SEALED	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

Client: **Geocon Consultant, Inc.** Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550 TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) CM, OW, MO (Signature) CHRIS MERRETT

Relinquished by: (Signature and Printed Name) CHRIS MERRETT	Date: 8-13-13	Time:	Received by: (Signature and Printed Name) HERSEY SAYAS	Date: 8/14/13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Send Report To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Special Instructions/Comments:

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CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm	Sample Description			8260-624 (Volatiles)	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)/8015B(HCID) +MO	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals	6010B-200.7 Metals LEAD	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	Cd Ecm 9045	SOIL/SEDIMENT/SLUDGE	SOLIDS/WIPES/FILTERS	WATER-DRINKING/GROUND	WATER-STORM/WASTE	AQUEOUS/LAYERED-OIL	TAT	Container(s) #	Container(s) Type	PRESERVATION	Q A / Q C / REMARKS
	Lab No.	Sample I.D. / Location	Date	Time																							
1	ND10801-41	CCTV 12-0	8-12-13	1320								X						X						2	1	T P	H	
2	-42	-1		25	X							X															
3	-43	-2.5		30	X				X			X			X												
4	-44	-5.5		30			X					X															
5	-45	-8.5		35			X		X																		
6	-46	CCTV 13-0	8-13-13	1030								X															
7	-47	-1		35	X							X															
8	-48	-2.5		35	X				X						X												
9	-49	-5.5		40			X					X															
10	-50	-8.5		45			X		X																		

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM ☐	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM ☐	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM ☐	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM ☐	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM ☐	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM ☐	10% DISCOUNT 10th BUSINESS DAY 5:30 PM ☐

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TAT is 10-15 business days, Dioxin and Furans 21 business days.

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CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8560-02-54 Quote #: 04A3578

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): CM

Signature: CM

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Condition Upon Receipt: 1. CHILLED 2.6 / 1.2 Y☑ N☐ | 2. HEADSPACE (VOA) Y☐ N☐ | 3. CONTAINER INTACT Y☐ N☐ | 4. SEALED Y☐ N☐ | 5. # OF SPLS MATCH COC Y☐ N☐ | 6. PRESERVED Y☐ N☐

Client: **Geocon Consultant, Inc.** Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550 TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) CM, DW, MO, (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date: 8-13-13	Time: 1800	Received by: (Signature and Printed Name) HERSEY SAYLES	Date: 8/14/13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Send Report To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years

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CIRCLE APPROPRIATE MATRIX: SOIL/SEDIMENT/SLUDGE | SOLIDS/WIPES/FILTERS | WATER-DRINKING/GROUND | WATER-STORM/WASTE | AQUEOUS/LAYERED-OIL

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B (GRO)	8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)	8015B(HCID) FMO	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals	6010B-200.7 Metals LEAD	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	pH EPA 9045	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	NO10801-51	CCTV1-0	8-13-13	1130										X					X	2	1	J	P	4	
2	-52	-1		1135		X								X										
3	-53	CCTV2-0		1110										X										
4	-54	-1		1115		X								X										
5	-55	CCTV10-0		0840										X										
6	-56	-1		0845		X								X										
7	-57	-2.5		0850		X					X						X							
8	-58	R5-0	8-12-13	1350		X					X													
9	-59	R5-1		1359		X		X			X						X							
10	-60	EB3												X					X					

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Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Condition Upon Receipt

1. CHILLED 24 IR2	Y☑ N☐	4. SEALED	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

Client: **Geocon Consultant, Inc.** Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550 TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TOS Project #: E8560-02-54 Sampler: (Printed Name) CM, DW, MO. (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date: 8-15-13	Time: 1800	Received by: (Signature and Printed Name) HENRY SIMMS	Date: 16AUG13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To: Attn: E-mail: Company: SAME AS ABOVE Address: City: State: Zip:

Send Report To: Attn: E-mail: Company: SAME AS ABOVE Addrress: City: State: Zip:

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	Lab No.	Sample I.D. / Location	Date	Time																						
1	NO10801-61	R6-0	8-12-13	1416	X					X						X	X					2	1	T	M	H	
2	-62	R6-1		1421	X		X			X					X											
3	-63	R9-0		1311	X					X																
4	-64	R9-1		1319	X		X			X					X											
5	-65	R10-0		1330	X					X																
6	-66	R10-1		1340	X		X			X					X											
7	-67	R13-0		1245	X					X																
8	-68	R13-1		1250	X		X			X					X											
9	-69	R14-0		1255	X					X																
10	-70	R14-1		1306	X		X			X					X											

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Q A / Q C
RTNE ☐ CT ☑ Legal ☐ SWRCB ☐ Logcode____ OTHER ____

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1. CHILLED 2.0 / 12.2	Y☑ N☐	4. SEALED	Y☐ N☐
2. HEADSPACE (VOA)	Y☐ N☐	5. # OF SPLS MATCH COC	Y☐ N☐
3. CONTAINER INTACT	Y☐ N☐	6. PRESERVED	Y☐ N☐

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Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date: 8-13-13	Time: 1800	Received by: (Signature and Printed Name) HOSEY SAYLES	Date: 14/AUG/13	Time: 0847
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To:
Attn: _____ E-mail: _____
Company: SAME AS ABOVE
Address: _____
City: _____ State: _____ Zip: _____

Send Report To:
Attn: _____ E-mail: _____
Company: SAME AS ABOVE
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1	N40869-71	R17-0	8-12-13	1220	X				X								X					2	1	T	A	4	
2	-72	R17-1		1225	X		X		X					X												
3	-73	R18-0		1230	X				X																	
4	-74	R18-1		1235	X		X		X					X												
5	-75	R19-0		1144	X				X																	
6	-76	R19-1		1149	X		X		X					X												
7	-77	R20-0		1200	X				X																	
8	-78	R20-1		1205	X		X		X					X												
9	-79	EB 4	8-13-13															X						JG		
10																										

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RTNE ☐ CT ☑ Legal ☐
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Client: **Geocon Consultant, Inc.** Address: 6671 Brisa Street City: Livermore State: CA Zip Code: 94550 TEL: (925) 371-5900 FAX: (925) 371-5915

Project Name: CALTRANS SR4/242 TO5 Project #: E8560-02-54 Sampler: (Printed Name) CM DW MO (Signature) CHRIS MERRETT

Relinquished by: (Signature and Printed Name)	CHRIS MERRETT	Date: 8-13-13	Time: 1500	Received by: (Signature and Printed Name)	[illegible] JERSEY SAUGUS	Date: 8/14/13	Time: 0847
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:

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2	-81	-1		40	X							X												1			
3	-82	-2.5		40	X				X			X			X									1			
4	-83	-5.5		45	CM X		X					X												1			
5	-84	-8.5		50			X		X															1			
6																											
7																											
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Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	8/14/2013	Workorder:	N010801
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	GSO		
Last 4 digits of Tracking No.:	8654	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☐	No ☑	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☑	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: EB samples were in 4ozg but for Pb analysis only. EB samples for Pb analysis were lab preserved.

Checklist Completed By: MBC MBC 8/14/2013

Reviewed By: lrgpunzalan

GSO GOLDEN STATE OVERNIGHT

WebShip 800-322-5555 www.gso.com

Ship From:
GEOCON - LIVERMORE OFFICE
GEOCON, INC.
6671 BRISA STREET
LIVERMORE, CA 94550

Ship To:
SAMPLE RECEIVING
ADVANCED TECHNOLOGY LABS - LAS VEGAS
3151 W. POST ROAD
LAS VEGAS, NV 89118

COD:
$0.00

Reference:
E8560-02-54

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 522498654

PDS

LVS

LAS VEGAS

D89103A

14974488

Print Date : 08/13/13 15:27 PM

Package 2 of 2

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

August 23, 2013

Chris Merritt
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010801

RE: Caltrans SR4/242 TOS, E8560-02-54

Attention: Chris Merritt

Enclosed are the results for sample(s) received on August 14, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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

CLIENT: Geocon Consultants, Inc.
Project: Caltrans SR4/242 TOS, E8560-02-54
Lab Order: N010801

CASE NARRATIVE

Analytical Comments for WET/EPA 6010B:

Dilution was necessary due to matrix.

Analytical Comments for WET/EPA 7470A:

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.

RPD for Sample Duplicate (DUP) N010801-063A-DUP is outside criteria possibly due to non-homogeneity of sample.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:11:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-063		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	45	0.050		mg/L	5	8/22/2013 03:21 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R10-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:30:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-065		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	1.4	0.050		mg/L	5	8/22/2013 03:15 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R13-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:45:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-067		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	4.7	0.050		mg/L	5	8/22/2013 03:47 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R13-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:50:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-068		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	2.3	0.050		mg/L	5	8/22/2013 03:34 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R14-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:55:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-069		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY WET EXTRACTION				**WET/ EPA 7470A**		
RunID: AA1_130823A	QC Batch: 43749			PrepDate: 8/22/2013		Analyst: **JT**
Mercury	1.0	0.20		µg/L	1	8/23/2013
ICP METALS BY STLC				**WET/ EPA 6010B**		
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	3.5	0.050		mg/L	5	8/22/2013 03:54 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R18-1
Lab Order:	N010801	**Collection Date:**	8/12/2013 12:35:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-074		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Lead	4.9	0.050		mg/L	5	8/22/2013 02:41 PM

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R19-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 11:44:00 AM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-075		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
		WET/ EPA 6010B				
RunID: ICP2_130822A	QC Batch: R90086			PrepDate:		Analyst: **CEI**
Chromium	0.076	0.050		mg/L	5	8/22/2013 03:41 PM
Lead	1.1	0.050		mg/L	5	8/22/2013 03:41 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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **MB-R90086** SampType: **MBLK** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **PBS** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	0.010									
Lead	ND	0.010									

Sample ID: **LCS-R90086** SampType: **LCS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **LCSS** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.520	0.010	0.5000	0	104	85	115				
Lead	0.511	0.010	0.5000	0	102	85	115				

Sample ID: **MB-43726** SampType: **MBLK** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **PBS** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.003	0.050									
Lead	ND	0.050									

Sample ID: **N010801-074A-MS** SampType: **MS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **ZZZZZZ** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.541	0.050	2.500	0.06404	99.1	75	125				
Lead	7.295	0.050	2.500	4.902	95.7	75	125				

Sample ID: **N010801-074A-MSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **ZZZZZZ** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637306**

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

Calculations are based on raw values

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

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **N010801-074A-MSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **ZZZZZZ** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.570	0.050	2.500	0.06404	100	75	125	2.541	1.14	20	
Lead	7.224	0.050	2.500	4.902	92.8	75	125	7.295	0.984	20	

Sample ID: **N010801-063A-DUP** SampType: **DUP** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **90086**
Client ID: **ZZZZZZ** Batch ID: **R90086** TestNo: **WET/ EPA 60** Analysis Date: **8/22/2013** SeqNo: **1637309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.123	0.050						0.1215	1.24	20	
Lead	46.587	0.050						45.05	3.35	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
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_ST

Sample ID: **LCS-43749**	SampType: **LCS**	TestCode: **7470_ST**	Units: **µg/L**	Prep Date: **8/22/2013**	RunNo: **90096**
Client ID: **LCSS**	Batch ID: **43749**	TestNo: **WET/ EPA 74**		Analysis Date: **8/23/2013**	SeqNo: **1637482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.280	0.20	5.000	0	106	85	115				

Sample ID: **MB1-43726 STLC**	SampType: **MBLK**	TestCode: **7470_ST**	Units: **µg/L**	Prep Date: **8/22/2013**	RunNo: **90096**
Client ID: **PBS**	Batch ID: **43749**	TestNo: **WET/ EPA 74**		Analysis Date: **8/23/2013**	SeqNo: **1637483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.072	0.20									

Sample ID: **MB-43749**	SampType: **MBLK**	TestCode: **7470_ST**	Units: **µg/L**	Prep Date: **8/22/2013**	RunNo: **90096**
Client ID: **PBS**	Batch ID: **43749**	TestNo: **WET/ EPA 74**		Analysis Date: **8/23/2013**	SeqNo: **1637485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N010801-063A-DUP**	SampType: **DUP**	TestCode: **7470_ST**	Units: **µg/L**	Prep Date: **8/22/2013**	RunNo: **90096**
Client ID: **ZZZZZZ**	Batch ID: **43749**	TestNo: **WET/ EPA 74**		Analysis Date: **8/23/2013**	SeqNo: **1637488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.192	0.20						1.570	0	20	

Sample ID: **N010801-069A-MS**	SampType: **MS**	TestCode: **7470_ST**	Units: **µg/L**	Prep Date: **8/22/2013**	RunNo: **90096**
Client ID: **ZZZZZZ**	Batch ID: **43749**	TestNo: **WET/ EPA 74**		Analysis Date: **8/23/2013**	SeqNo: **1637495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.945	0.20	5.000	1.007	58.8	70	130				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

Calculations are based on raw values

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

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_ST

Sample ID: **N010801-069A-MSD** SampType: **MSD** TestCode: **7470_ST** Units: **µg/L** Prep Date: **8/22/2013** RunNo: **90096**
Client ID: **ZZZZZZ** Batch ID: **43749** TestNo: **WET/ EPA 74** Analysis Date: **8/23/2013** SeqNo: **1637496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.104	0.20	5.000	1.007	61.9	70	130	3.945	3.96	20	S

Qualifiers:

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ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Nancy Sibucao

From: Luann Beadle [beadle@geoconinc.com]
Sent: Tuesday, August 20, 2013 1:58 PM
To: Advanced Technology Labs, Inc.
Subject: Lab Order N010801 (TO-54) WET Order

Hi ATL,

Please run the following samples for WET analyses, as indicated:

N010801-075A	R19-0	Chromium	56
N010801-068A	R13-1	Lead	56
N010801-074A	R18-1	Lead	72
N010801-069A	R14-0	Lead	78
N010801-065A	R10-0	Lead	82
N010801-067A	R13-0	Lead	96
N010801-075A	R19-0	Lead	150
N010801-063A	R9-0	Lead	650
N010801-069A	R14-0	Mercury	9.4

48-hr TAT, please.

Thanks,

Luann

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

August 30, 2013

Chris Merritt
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010801

RE: Caltrans SR4/242 TOS, E8560-02-54

Attention: Chris Merritt

Enclosed are the results for sample(s) received on August 14, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:11:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-063		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY TCLP EXTRACTION						
	EPA 3010A			**EPA 1311/ 6010B**		
RunID: ICP2_130830A	QC Batch: 43794			PrepDate:	8/29/2013	Analyst: **JT**
Lead	0.61	0.25		mg/L	1	8/30/2013 11:46 AM

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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **MB-43794**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/29/2013**	RunNo: **90170**
Client ID: **PBS**	Batch ID: **43794**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/30/2013**	SeqNo: **1639940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-43789_TC**	SampType: **MBLK**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/29/2013**	RunNo: **90170**
Client ID: **PBS**	Batch ID: **43794**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/30/2013**	SeqNo: **1639941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-43794**	SampType: **LCS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/29/2013**	RunNo: **90170**
Client ID: **LCSS**	Batch ID: **43794**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/30/2013**	SeqNo: **1639942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.081	0.25	1.000	0	108	85	115				

Sample ID: **N010801-063A-DUP**	SampType: **DUP**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/29/2013**	RunNo: **90170**
Client ID: **ZZZZZZ**	Batch ID: **43794**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/30/2013**	SeqNo: **1639944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.621	0.25						0.6091	1.95	20	

Sample ID: **N010903-001A-MS**	SampType: **MS**	TestCode: **6010_TCPB**	Units: **mg/L**	Prep Date: **8/29/2013**	RunNo: **90170**
Client ID: **ZZZZZZ**	Batch ID: **43794**	TestNo: **EPA 1311/ 60 EPA 3010A**		Analysis Date: **8/30/2013**	SeqNo: **1639948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.053	0.25	1.000	0	105	75	125				

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

Calculations are based on raw values

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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: **N010903-001A-MSD** SampType: **MSD** TestCode: **6010_TCPB** Units: **mg/L** Prep Date: **8/29/2013** RunNo: **90170**
Client ID: **ZZZZZZ** Batch ID: **43794** TestNo: **EPA 1311/ 60 EPA 3010A** Analysis Date: **8/30/2013** SeqNo: **1639949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.047	0.25	1.000	0	105	75	125	1.053	0.580	20	

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Nancy Sibucao

From: Luann Beadle [beadle@geoconinc.com]
Sent: Tuesday, August 27, 2013 10:26 AM
To: Advanced Technology Labs, Inc.
Subject: TO-54 (Lab Order N010801)

Hi ATL,

Please run DI-WET and TCLP lead on sample R9-0 (N010801-063A).

On a 72-hr TAT, please.
Thanks,
Luann

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

September 03, 2013

Chris Merritt
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010801

RE: Caltrans SR4/242 TOS, E8560-02-54

Attention: Chris Merritt

Enclosed are the results for sample(s) received on August 14, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

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

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	R9-0
Lab Order:	N010801	**Collection Date:**	8/12/2013 1:11:00 PM
Project:	Caltrans SR4/242 TOS, E8560-02-54	**Matrix:**	SOIL
Lab ID:	N010801-063		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY WET DI EXTRACTION						
		WET DI/ EPA 6010B				
RunID: ICP2_130903A	QC Batch: R90183			PrepDate:		Analyst: **JT**
Lead	ND	0.25		mg/L	1	9/3/2013 10:08 AM

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		

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDIPB

Sample ID: **MB-R90183**	SampType: **MBLK**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90183**
Client ID: **PBW**	Batch ID: **R90183**	TestNo: **WET DI/ EPA**		Analysis Date: **9/3/2013**	SeqNo: **1640699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-R90183**	SampType: **LCS**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90183**
Client ID: **LCSW**	Batch ID: **R90183**	TestNo: **WET DI/ EPA**		Analysis Date: **9/3/2013**	SeqNo: **1640700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.534	0.25	0.5000	0	107	85	115				

Sample ID: **N010801-063A-DUP**	SampType: **DUP**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90183**
Client ID: **ZZZZZZ**	Batch ID: **R90183**	TestNo: **WET DI/ EPA**		Analysis Date: **9/3/2013**	SeqNo: **1640703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.086	0.25						0.08648	0	20	

Sample ID: **N010801-063A-MS**	SampType: **MS**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90183**
Client ID: **ZZZZZZ**	Batch ID: **R90183**	TestNo: **WET DI/ EPA**		Analysis Date: **9/3/2013**	SeqNo: **1640705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.167	0.50	1.000	0.08648	108	75	125				

Sample ID: **N010801-063A-MSD**	SampType: **MSD**	TestCode: **6010_STDIPB**	Units: **mg/L**	Prep Date:	RunNo: **90183**
Client ID: **ZZZZZZ**	Batch ID: **R90183**	TestNo: **WET DI/ EPA**		Analysis Date: **9/3/2013**	SeqNo: **1640706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.158	0.50	1.000	0.08648	107	75	125	1.167	0.757	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

Calculations are based on raw values

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

CLIENT: Geocon Consultants, Inc.
Work Order: N010801
Project: Caltrans SR4/242 TOS, E8560-02-54

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDIPB

Sample ID: **MB-43797** SampType: **MBLK** TestCode: **6010_STDIPB** Units: **mg/L** Prep Date: RunNo: **90183**
Client ID: **PBW** Batch ID: **R90183** TestNo: **WET DI/ EPA** Analysis Date: **9/3/2013** SeqNo: **1640707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

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	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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Nancy Sibucao

From: Luann Beadle [beadle@geoconinc.com]
Sent: Tuesday, August 27, 2013 10:26 AM
To: Advanced Technology Labs, Inc.
Subject: TO-54 (Lab Order N010801)

Hi ATL,

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On a 72-hr TAT, please.
Thanks,
Luann

Luann Beadle | Senior Staff Scientist
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Office: 925.371.5900, ext. 403 Direct: 925.961.5272 Mobile: 925.395.1669
beadle@geoconinc.com

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

EMSL Order:	091312863
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R1-0 *091312863-0001*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R1-1 *091312863-0002*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R2-0 *091312863-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R2-1 *091312863-0004*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R3-0 *091312863-0005*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R3-1 *091312863-0006*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R4-0 *091312863-0007*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/20/2013 21:56:41

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

EMSL Order:	091312863
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R4-1 *091312863-0008*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R5-0 *091312863-0009*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R5-1 *091312863-0010*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R6-0 *091312863-0011*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R6-1 *091312863-0012*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R7-0 *091312863-0013*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R7-1 *091312863-0014*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Initial report from 08/20/2013 21:56:41

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Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com sanleandrolab@emsl.com

EMSL Order:	091312863
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R8-0 *091312863-0015*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R8-1 *091312863-0016*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R9-0 *091312863-0017*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R9-1 *091312863-0018*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R10-0 *091312863-0019*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R10-1 *091312863-0020*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R11-0 *091312863-0021*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/20/2013 21:56:41

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EMSL Order:	091312863
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R11-1 *091312863-0022*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R12-0 *091312863-0023*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R12-1 *091312863-0024*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R13-0 *091312863-0025*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R13-1 *091312863-0026*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R14-0 *091312863-0027*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R14-1 *091312863-0028*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/20/2013 21:56:41

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CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R15-0 *091312863-0029*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R15-1 *091312863-0030*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R16-0 *091312863-0031*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R16-1 *091312863-0032*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R17-0 *091312863-0033*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R17-1 *091312863-0034*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R18-0 *091312863-0035*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/20/2013 21:56:41

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http://www.EMSL.com sanleandrolab@emsl.com

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CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

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6671 Brisa Street

Livermore, CA 94550

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Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R18-1 *091312863-0036*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R19-0 *091312863-0037*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R19-1 *091312863-0038*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R20-0 *091312863-0039*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R20-1 *091312863-0040*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R21-0 *091312863-0041*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R21-1 *091312863-0042*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

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ProjectID:	E8560-06-**

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6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/12/13 4:15 PM
Analysis Date:	8/20/2013
Collected:	8/9/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
R22-0 *091312863-0043*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
R22-1 *091312863-0044*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV5-0 *091312863-0045*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV5-1 *091312863-0046*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV5-5.5 *091312863-0047*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV5-8.5 *091312863-0048*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (26) *Nonette Patron (5)*
Matthew Batongbacal (17)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/20/2013 21:56:41

091312863

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

#091312863

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE. 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Company: Geocon Consultants, Inc.
Street: 6671 Brisa St
City: Livermore | State/Province: CA | Zip/Postal Code: 94550 | Country: USA
Report To (Name): Luann Beadle
Telephone #: 925-961-5272
Fax #:
Email Address: beadle@pacbell.net
Project Name/Number: E8560-02-54
Please Provide Results: ☐ Fax ☒ Email | Purchase Order: | U.S. State Samples Taken:

EMSL-Bill to: ☒ Same ☐ Different
If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

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 hours/6 hours, 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.

PCM - Air
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT** (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☒ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ EPA Protocol (Semi-Quantitative)
☐ EPA Protocol (Quantitative)

Other:
☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: | **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	R1-0		8-8-13/0830
	R1-1		/0840
	R2-0		/0825
	R2-1		/0835
	R3-0		/0915
	R3-1		/0925
	R4-0		/0910
	R4-1		/0915

Client Sample # (s): various - 48 | **Total # of Samples:** 48
Relinquished (Client): Luann Beadle | **Date:** 8-12-13 | **Time:** 4:20PM
Received (Lab): [signature] | **Date:** 8-12-13 | **Time:** 4:21 WI
Comments/Special Instructions:

091312863

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

#091312863

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	R5-0		8-9-13/1144
	R5-1		/1231
	R6-0		/1210
	R6-1		/1220
	R7-0		8-8-13/094
	R7-1		/0945
	R8-0		/0940
	R8-1		/0945
	R9-0		8-9-13/1110
	R9-1		/1115
	R10-0		/1117
	R10-1		/1124
	R11-0		8-8-13/1015
	R11-1		/1025
	R12-0		/1015
	R12-1		/1020

*Comments/Special Instructions:

091312863

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

#091312863

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE. 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Company: Geocon Consult
Street: 6621 Bay Rd
City: Livermore State/Province: CA
Report To (Name): William Bell
Telephone #: (925) 371-5900
Project Name/Number: E 8649-0202

EMSL-Bill to: ☒ Same ☐ Different
If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Zip/Postal Code: 94550 Country: USA
Fax #:
Email Address: bbell@geoconinc.com

Please Provide Results: ☐ Fax ☒ Email Purchase Order: U.S. State Samples Taken:

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 hours/6 hours, 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.

PCM - Air
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT** (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ EPA Protocol (Semi-Quantitative)
☐ EPA Protocol (Quantitative)

Other:
☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	R13-0		8-9-13 / 1038
	R13-1		/ 1047
	R14-0		/ 1030
	R14-1		/ 1035
	R15-0		8-8-13 / 1055
	R15-1		/ 1100
	R16-0		/ 1055
	R16-1		/ 1100

Client Sample # (s): **Total # of Samples:**

Relinquished (Client): **Date:** **Time:**

Received (Lab): **Date:** 8-12-13 **Time:** 4:21 WI

Comments/Special Instructions:

091312863

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):
#091312863

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	R17-0		8-9-13/0844
	R17-1		/0851
	R18-0		/0840
	R18-1		/0845
	R19-0		/0930
	R19-1		/0947
	R20-0		/0931
	R20-1		/0941
	R21-0		8-8-13/1135
	R21-1		/1140
	R22-0		/1200
	R22-1		/1205
	CCTV5-0		/1230
	CCTV5-1		/1235
	CCTV5-5.5		/1245
	CCTV5-8.5		/1250

*Comments/Special Instructions:

8-15-13

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

EMSL Order:	091313003
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/14/13 9:45 AM
Analysis Date:	8/21/2013
Collected:	8/13/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
CCTV1-0 *091313003-0001*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV1-1 *091313003-0002*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV2-0 *091313003-0003*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV2-1 *091313003-0004*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV10-0 *091313003-0005*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV10-1 *091313003-0006*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV13-0 *091313003-0007*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (7)
Matthew Batongbacal (7)

Baojia Ke, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 08/21/2013 19:34:31

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

EMSL Order:	091313003
CustomerID:	GECN21
CustomerPO:	E8560-02-54
ProjectID:	E8560-06-**

Attn: **Luann Beadle**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8560-02-54**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	08/14/13 9:45 AM
Analysis Date:	8/21/2013
Collected:	8/13/2013

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
CCTV13-1 *091313003-0008*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV13-5.5 *091313003-0009*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV13-8.5 *091313003-0010*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV14-0 *091313003-0011*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV14-1 *091313003-0012*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV14-5.5 *091313003-0013*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
CCTV14-8.5 *091313003-0014*	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Adam C. Fink (7)
Matthew Batongbacal (7)

Baojia Ke, Laboratory Manager
or other approved signatory

Initial report from 08/21/2013 19:34:31

091313003

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

#091313003

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE. 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Company: Geocon Consultants, Inc
Street: 6671 Bonsa
City: Livermore **State/Province:** CA **Zip/Postal Code:** 94550 **Country:** UST
Report To (Name): Cuann Beadle/Rick Day
Telephone #: 925-961-5272
Fax #:
Email Address: beadle@geoconinc.com day@geoconinc.com
Project Name/Number: E8560-02-54
Please Provide Results: ☐ Fax ☒ Email **Purchase Order:**
EMSL-Bill to: ☒ Same ☐ Different
If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party
U.S. State Samples Taken: CA

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 hours/6 hours, 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.

PCM - Air
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☒ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ EPA Protocol (Semi-Quantitative)
☐ EPA Protocol (Quantitative)

Other:
☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
CCTV1-0	Soil		8-13-13
CCTV1-1			
CCTV2-0			
CCTV2-1			
CCTV10-0			
CCTV10-1			
CCTV13-0			
CCTV13-1			

Client Sample # (s): **Total # of Samples:** 14
Relinquished (Client): **Date:** 8-14-13 **Time:** 9:55
Received (Lab): **Date:** 9:50am **Time:**
Comments/Special Instructions:

RECEIVED AUG 14 2013

091313003

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

#091313003

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
CCTV13-5.5	Soil		8-13-13
CCTV13-8.5			
CCTV14-0			
CCTV14-1			
CCTV14-5.5			
CCTV14-8.5			

***Comments/Special Instructions:**

Analysis NIOSH 7402 PCM 9:50am

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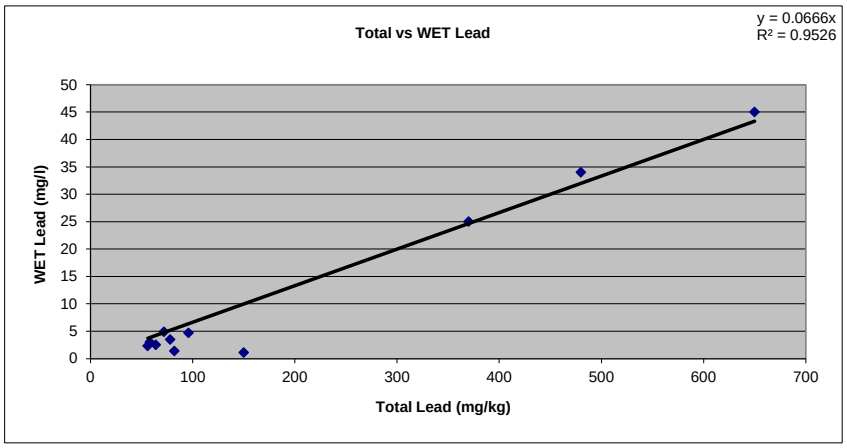
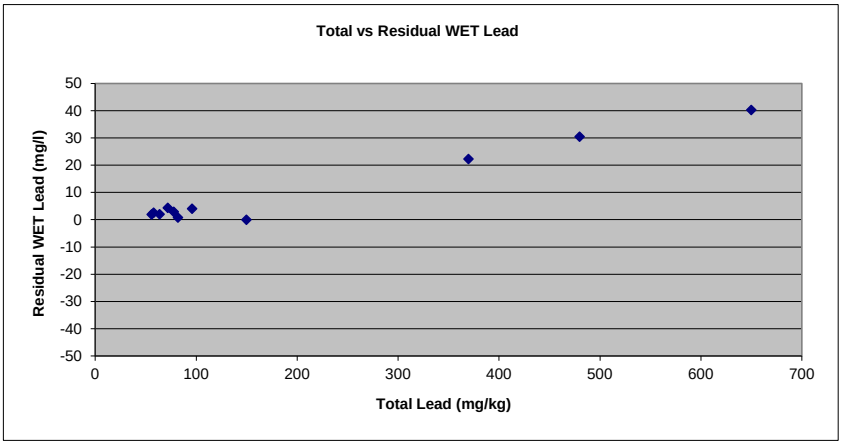
APPENDIX C

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
R19-0	0 to 0.5	150	1.1	0.00	0.00
R10-0	0 to 0.5	82	1.4	0.80	0.64
R13-1	1 to 1.5	56	2.3	1.89	3.57
R8-1	1 to 1.5	64	2.5	2.03	4.12
R16-0	0 to 0.5	58	3.0	2.57	6.63
R14-0	0 to 0.5	78	3.5	2.93	8.57
R13-0	0 to 0.5	96	4.7	4.00	15.97
R18-1	1 to 1.5	72	4.9	4.37	19.11
R8-0	0 to 0.5	370	25	22.29	496.70
R1-0	0 to 0.5	480	34	30.48	929.03
R9-0	0 to 0.5	650	45	40.23	1618.72





As - Site

Number of Valid Observations	63
Number of Distinct Observations	35
Minimum	1.2
Maximum	37
Mean	4.33
Median	3.5
SD	4.41
Variance	19.44
Coefficient of Variation	1.019
Skewness	6.76
Mean of log data	1.301
SD of log data	0.49
95% Standard Bootstrap UCL	**5.22**

Pb - Site

Number of Valid Observations	72
Number of Distinct Observations	54
Minimum	1.9
Maximum	1400
Mean	57.9
Median	8.1
SD	190.6
Variance	36337
Coefficient of Variation	3.293
Skewness	5.698
Mean of log data	2.506
SD of log data	1.425
95% Standard Bootstrap UCL	**94.4**

Hg - Site

Number of Valid Observations	73
Number of Distinct Observations	28
Minimum	0.012
Maximum	9.4
Mean	0.48
Median	0.05
SD	1.567
Variance	2.456
Coefficient of Variation	3.278
Skewness	5.144
Mean of log data	-2.163
SD of log data	1.298
95% Standard Bootstrap UCL	**0.78**

Dataset 1 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	480
Maximum	1400
Mean	940

Dataset 1 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	7.7
Maximum	11
Mean	9.35

Dataset 2 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	9.3
Maximum	15
Mean	12.15

Dataset 2 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	6.9
Maximum	10
Mean	8.45

Dataset 3 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	19
Maximum	26
Mean	22.5

Dataset 3 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	3.1
Maximum	19
Mean	11.05

Dataset 4 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	38
Maximum	370
Mean	204

Dataset 4 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	7.8
Maximum	64
Mean	35.9

Dataset 5 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	82
Maximum	650
Mean	366

Dataset 5 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	24
Maximum	26
Mean	25

Dataset 6 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	12
Maximum	17
Mean	14.5

Dataset 6 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	4.1
Maximum	5.8
Mean	4.95

Dataset 7 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	78
Maximum	96
Mean	87

Dataset 7 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	4.6
Maximum	56
Mean	30.3

Dataset 8 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	14
Maximum	58
Mean	36

Dataset 8 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.4
Maximum	4.7
Mean	3.55

Dataset 9 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	10
Maximum	20
Mean	15

Dataset 9 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	4.6
Maximum	72
Mean	38.3

Dataset 10 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	28
Maximum	150
Mean	89

Dataset 10 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	5.5
Maximum	8.4
Mean	6.95

Dataset 11 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	21
Maximum	43
Mean	32

Dataset 11 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	5.6
Maximum	17
Mean	11.3

Dataset 12 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	33
Maximum	33
Mean	33

Dataset 12 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 13 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 13 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 14 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 14 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 14 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.3
Maximum	2.3
Mean	2.3

Dataset 14 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 14 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.5
Maximum	5.5
Mean	5.5

Dataset 15 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 15 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 15 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	1.9
Maximum	1.9
Mean	1.9

Dataset 15 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 15 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4
Maximum	4
Mean	4

Dataset 16 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	38
Maximum	38
Mean	38

Dataset 16 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	27
Maximum	27
Mean	27

Dataset 16 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	18
Maximum	18
Mean	18

Dataset 16 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	11
Maximum	11
Mean	11

Dataset 16 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4.5
Maximum	4.5
Mean	4.5

Dataset 17 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.5
Maximum	5.6
Mean	4.05

Dataset 17 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.5
Maximum	4
Mean	3.25

Dataset 17 - 2.5

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.5
Maximum	4.2
Mean	3.35

Dataset 17 - 5.5

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.5
Maximum	3.8
Mean	3.15

Dataset 18 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	18
Maximum	18
Mean	18

Dataset 18 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 18 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	3.1
Maximum	3.1
Mean	3.1

Dataset 18 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5
Maximum	5
Mean	5

Dataset 18 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	9.6
Maximum	9.6
Mean	9.6

Dataset 19 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.5
Maximum	5.5
Mean	5.5

Dataset 19 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.6
Maximum	5.6
Mean	5.6

Dataset 19 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4.8
Maximum	4.8
Mean	4.8

Dataset 19 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.1
Maximum	5.1
Mean	5.1

Dataset 19 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4.7
Maximum	4.7
Mean	4.7

Dataset 20 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 20 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	7.3
Maximum	7.3
Mean	7.3

Dataset 20 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	17
Maximum	17
Mean	17

Dataset 21 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.8
Maximum	5.8
Mean	5.8

Dataset 21 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 21 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.2
Maximum	5.2
Mean	5.2

Dataset 21 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.5
Maximum	5.5
Mean	5.5

Dataset 21 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	3
Maximum	3
Mean	3

Dataset 22 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	7.4
Maximum	7.4
Mean	7.4

Dataset 22 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.8
Maximum	5.8
Mean	5.8

Dataset 22 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4.8
Maximum	4.8
Mean	4.8

Dataset 22 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.1
Maximum	5.1
Mean	5.1

Dataset 22 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	4.1
Maximum	4.1
Mean	4.1

Dataset 23 - 0

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	19
Maximum	19
Mean	19

Dataset 23 - 1

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	7.3
Maximum	7.3
Mean	7.3

Dataset 23 - 2.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	21
Maximum	21
Mean	21

Dataset 23 - 5.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 23 - 8.5

Number of Valid Observations	1
Number of Distinct Observations	1
Minimum	5.9
Maximum	5.9
Mean	5.9

Dataset 24 - 0

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	0.5
Maximum	2.5
Mean	1.5

Dataset 24 - 1

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	2.9
Maximum	4
Mean	3.45

Dataset 24 - 2.5

Number of Valid Observations	2
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

Dataset 24 - 5.5

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	3.2
Maximum	3.8
Mean	3.5

Dataset 24 - 11.5

Number of Valid Observations	2
Number of Distinct Observations	2
Minimum	3.2
Maximum	4.8
Mean	4

Dataset 24 - 15.5

Number of Valid Observations	2
Number of Distinct Observations	1
Minimum	2.5
Maximum	2.5
Mean	2.5

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. MUTHANNA OMRAN
Bridge Design Branch 16
Structure Design

Date: October 8, 2013

Attention: J. Peterson

File: 04-CC-4- PM 8.0/25.0
04-152721
Efis 0412000628
FPI Ramp Widening

From: S. AWAD/ S. YANG
Transportation Engineers
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

Subject: FOUNDATION REPORT FOR THE PROPOSED RETAINING WALLS

This memorandum presents our foundation recommendations for the design of the proposed three earth Retaining Walls, Retaining Wall No.1 (Alhambra Ave EB), Retaining Wall No. 2 (Morello Ave EB), and Retaining Wall No. 3 (Morello Ave WB). These retaining walls are part of the Freeway Performance Initiative (FPI) project to widen ramps and install ramp metering and Traffic Operations System (TOS) elements at various locations on Route 4 and Route 242 (see attached Figure 1).

1. SCOPE OF WORK

The following tasks were performed for the preparation of this report:

- Review of as-built plans;
- Field geotechnical exploration, including drilling seven borings at the project site;
- Laboratory test results on selected samples;
- Geotechnical design analysis; and
- Preparation of this Foundation Report.

2. PROJECT PURPOSE AND NEED

The need for this project is to relieve congestion and reduce accidents. The purpose is to install ramp metering systems to improve highway operations. Three retaining walls are required for the proposed widening of the ramps.

Refer to Table 1 for general information and locations of three retaining walls.

Table 1- Retaining Wall Limits

Wall No.	Direction	Begin	End	Wall Height, ft	Recommended Type
No. 1	EB	"D1" Line 16+13.15	"D1" Line 18+05.87	6	Type 5
No. 2	EB	"Y1" Line 13+00	"Y1" Line 18+00	6	Type 5
No. 3	WB	"W5" Line 22+74.91	"W5" Line 29+00.16	6 to 8	Type 5

3. EXCEPTION TO POLICY

There is no known exception to Department policy relating to the investigation or design of the proposed structures.

4. SITE GEOLOGY AND SEISMICITY

4.1 Regional Geology

The project is located in the northern portion of the Diablo Mountain Range within the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The central portion of the project is located in the Diablo Valley, a broad, sediment-filled basin completely surrounded by the northern portion of the Diablo Mountain range. The eastern portion of the project is located on the eastern flank of the Martinez Ridge of the Diablo Mountain Range. The eastern portion of the project is located on the foothills of the northern Diablo Mountain Range, adjacent to the Sacramento River Delta

4.2 Site Geology

In general, the portion of the project located in the Diablo Valley is underlain by Quaternary alluvial deposits and the portion of the project passing over the foothills of the Diablo Mountain Range is underlain by bedrock. The depositional environment of the Quaternary deposits comprises a transgressive sequence of alluvial fan and fan-delta deposits.

4.3 Topography

The project is located at the northern part of Contra Costa County, which is located at the northern end of the Diablo Range of Central California. It is bounded on the north by Carquinez

Strait, through which flows 27% of California's surface water runoff (USGS, 1997). The County is bordered to the west by the San Francisco Bay, to the east by the San Joaquin Valley, and to the south by the Livermore Valley. Contra Costa is one of the nine Bay Area counties with streams that are tributaries to San Francisco Bay. Most of the county is mountainous with steep rugged topography. Mount Diablo, in the center of the county, is one of the highest peaks in the Bay Area, reaching an elevation of 1173 meters (3,849 ft). Although the project extends over two spur ridges, the majority of the project is located on relatively low, flat lying ground of the Clayton-Concord Valley. According to the USGS topographic maps for the area, the low point of the project, along the northern margin of the Diablo Valley, is located at an elevation of 20 feet above mean sea level. The high point of the project, at the crest of a spur ridge of Mount Diablo, is located at an elevation of 475 feet above mean sea level.

Overall drainage within the project limits flows to the north of Sacramento River Delta and Carquinez Strait, and ultimately flowing west to the San Francisco Bay.

4.4 Site Seismicity

The Concord Fault is included in an Alquist-Priolo Earthquake Fault Zone because it is sufficiently active (Historic/Holocene active) and well-defined. The Concord Fault zone intersects the project alignment approximately at Route 4 between PM 13.31 and 13.53, which is 1.7 mile east of Morello Ave. The Contra Costa Shear Zone, which is 0.9 miles west of Alhambra Ave, is currently not considered Caltrans-active. Table 2 lists these two faults and maximum credible earthquake magnitudes that can be generated. Therefore, the potential of fault rupture hazard at all three wall locations is low.

Table 2. Adjacent faults and maximum magnitudes *

Fault	Distance from project (Miles)	Max. Magnitude (Mmax)
Concord	1.7 east from Morello Ave	6.6
Contra Costa Shear Zone	0.9 west from Alhambra Ave	6.5

*Caltrans ARS online v2.2.06

Based on the boring logs, the soil profiles at all wall locations are classified as Class D (a stiff soil) with shear wave velocity of top 100 ft (30 m) VS30 ranging from 600 to 1200 ft/s. Liquefaction potential is minimum at all locations.

For seismic stability analysis of the retaining walls, the Peak Ground Acceleration (PGA) values at the wall locations are required. Caltrans ARS Online program (v2.2.06) was used to calculate the PGA values, and the results are summarized in Table 5 below. The actual seismic coefficient used in the stability analysis is chosen as Kh= PGA / 3.

Table 5. Calculated Seismic Coefficients Used in Stability Analysis

Location	Vs_{30} (ft/s)	PGA (USGS 5% in 50 years)	Seismic coefficient K_h
Alhambra Ave EB	600	0.58	0.23
	1200	0.68	
Morello Ave EB & WB	600	0.59	0.24
	1200	0.71	

5. FIELD INVESTIGATION AND TESTING PROGRAM

Standard Penetration Test (SPT) was performed at 5-feet interval in soil strata. Pocket Penetrometer (PP) tests were conducted on soil samples showing apparent cohesion. Visual soil classifications were made in the field in accordance with the Unified Soil Classification System. Soil samples were collected at various depths for laboratory testing.

5.1 Subsurface Condition for Alhambra Ave EB (Wall No. 1)

General information of borings located near the wall No.1 site is listed in Table 3.

Table 3- Summary of Field Borings for Alhambra Ave EB (Wall No. 1)

Boring ID	Boring Depth (ft)	Date of completion	Hammer Efficiency
RC-13-006	26.5	7/30/13	93%
RC-13-007	26.5	7/30/13	93%

The subsurface soil condition consists of medium stiff to very stiff sandy clay (Pocket Penetrometer PP value = 0.75 – 3.5 tsf).

Groundwater was encountered in boring (RC-13-007) at depth 15.0 feet below the ground surface at the time of drilling. However, groundwater elevations fluctuate seasonally and may be encountered at higher elevations.

5.2 Subsurface Condition for Morello Ave EB (Wall No. 2)

General information of borings located near Wall No.2 site is listed in Table 4.

Table 4- Summary of Field Borings for Morello Ave EB (Wall No. 2)

Boring ID	Boring Depth (ft)	Date of completion	Hammer Efficiency
RC-13-004	40	7/17/13	93%
RC-13-005	26.5	7/17/13	93%

The subsurface soil condition consists of medium stiff to very stiff silt or stiff lean clay (Pocket Penetrometer PP value = 0.5 – 3.5 tsf).

Groundwater was encountered in boring (RC-13-004) at depth of 22 feet below the ground surface at the time of drilling.

5.3 Subsurface Condition for Morello Ave WB (Wall No. 3)

General information of borings located near Wall No.3 site is listed in Table 5.

Table 5- Summary of Field Borings for Morello Ave WB (Wall No. 3)

Boring ID	Total Length (ft)	Date of completion	Hammer Efficiency
RC-13-001	36.5	7/16/13	93%
RC-13-002	31.5	7/16/13	93%
Rc-13-003	31.5	7/16/13	93%

The subsurface soil condition consists of approximately 20 ft, soft to very stiff sandy silt. The reminder of the borings described the foundation soils as medium dense to very dense sand (SPT blow count ranged from 23 to as high as of 50 blows per foot).

6. GEOTECHNICAL TESTING

6.1 In-Situ Testing

All borings (RC-13-001 through RC-13-007), were drilled utilizing the rotary wash drilling with Standard Penetration Tests (SPT) and Pocket Penetrometer (PP) Tests. Soil samples were taken every 5 feet from the Standard Penetration Test (SPT) and where we encountered rock, Rock Quality Determination (RQD) and percent of sample recovery for each run were recorded. All foundation soil classifications were based on Caltrans "Soil and Rock Logging, Classification, and Presentation Manual". Refer to Attached Exhibit B for The LOTB sheets.

6.2 Laboratory Testing

Please see the attached Exhibit A for the laboratory test results.

7. CORROSION EVALUATION

Corrosion studies were conducted in accordance with the requirements of California Test Method No. 643. The Department considers the site to be non-corrosive for structure foundation elements, if the minimum resistivity is greater than 1000 ohm-cm and the pH value is greater than 5.5.

The following tables provide the corrosion test summary:

Table 3 - Summary of Corrosion Test for three walls

Boring	*Sample Depth ft*	*Resistivity (Ohm-Cm)*	*pH*	*Chloride Content (ppm)*	*Sulfate Content (ppm)*	*Is sample corrosive*
RC-13-001	3-7	998	8.3	N/A	N/A	No
RC-13-003	3-6	1235	6.7	N/A	N/A	No
RC-13-004	3-6	1271	7.4	N/A	N/A	No
RC-13-007	2-5	1589	7.8	N/A	N/A	No

8. FOUNDATION RECOMMENDATION

Recommendations contained in this report are based on the submitted layout and cross section plans, field mapping of the site, subsurface exploration, laboratory test results, retaining wall design analysis, due to the high Peak Ground Acceleration (PGA) values at the wall locations more than 0.6g and according to most current Revised Standard Plan (RSP) (B3-4A). Our recommendations for three retaining walls listed in Table 1 and as follows:

8.1 Retaining Wall No. 1 (Alhambra Ave EB)

Based on the submitted plans and cross-sections, the proposed Retaining Wall No. 1 will be constructed between Station **"D1" Line 16+13.15** and Station **"D1" Line 18+05.87** with a

maximum height of 6.0 feet. It is estimated that the allowable bearing capacity of the foundation soils (using resistance factor of 0.55) is greater than 2.9 ksf toe pressure required for Revised Standard Plan Type 5 (RSP) (B3-4A), based on H= 6 ft with Case I wall design.

Thus, Revised Standard Plan retaining wall Type 5 can be adopted for the proposed Retaining Wall No. 1.

8.2 Retaining Wall No. 2 Morello Ave EB (Type 5 Wall)

Based on the submitted plans and cross-sections, the proposed Retaining Wall No. 2 will be constructed between Station **"Y1" Line 13+00** and Station **"Y1" Line 18+00** with a maximum height of 6 feet. It is estimated that the allowable bearing capacity of the foundation soils (using resistance factor of 0.55) is greater than 2.9 ksf toe pressure required for Revised Standard Plan Type 5(RSP) (B3-4A, based on H= 6 ft with Case I wall design.

Thus, Revised Standard Plan retaining wall Type 5 can be adopted for the proposed Retaining Wall No. 2.

8.3 Retaining Wall No. 3 Morello Ave WB (Type 5 Wall)

Based on the submitted plans and cross-sections, the proposed Retaining Wall No. 3 will be constructed between Station **"W5" Line 22+74.91** and Station **"W5" Line 29+00.16** with a maximum height of 8 feet. It is estimated that the allowable bearing capacity of the foundation soils (using resistance factor of 0.55) is greater than 3.0 ksf toe pressure required for Revised Standard Plan Type 5(RSP) (B3-4A), based on H= 8 ft with Case I wall design.

Thus, Revised Standard Plan retaining wall Type 5 can be adopted for the proposed Retaining Wall No. 3.

9. CONSTRUCTION CONSIDERATIONS

- Excavation and water control for retaining walls shall conform to the provisions in Section 19-3, "Standard Excavation and Backfill", of the Standard Specifications.

- Because of the existing groundwater, the contractor should be prepared to lower the groundwater level during construction as necessary to maintain a dry and stable condition during construction.

α α α α α

If you have any questions or need additional information, please call me at (510) 622-5443, or Hooshmand Nikoui, Branch Chief at (510) 286-4811.

Attachments

c: TPokrywka, HNikoui, SAwad, Daily File

SAwad /mm

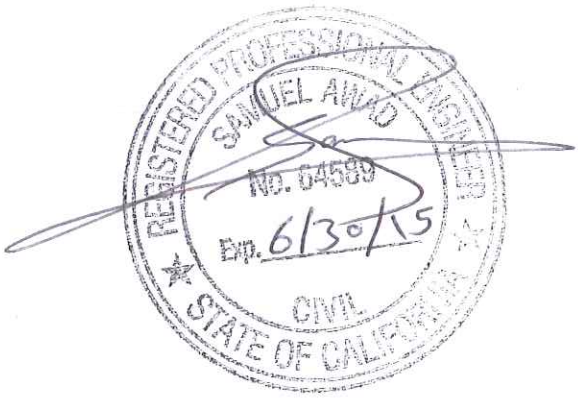


FIGURE 1

(Project Limits)

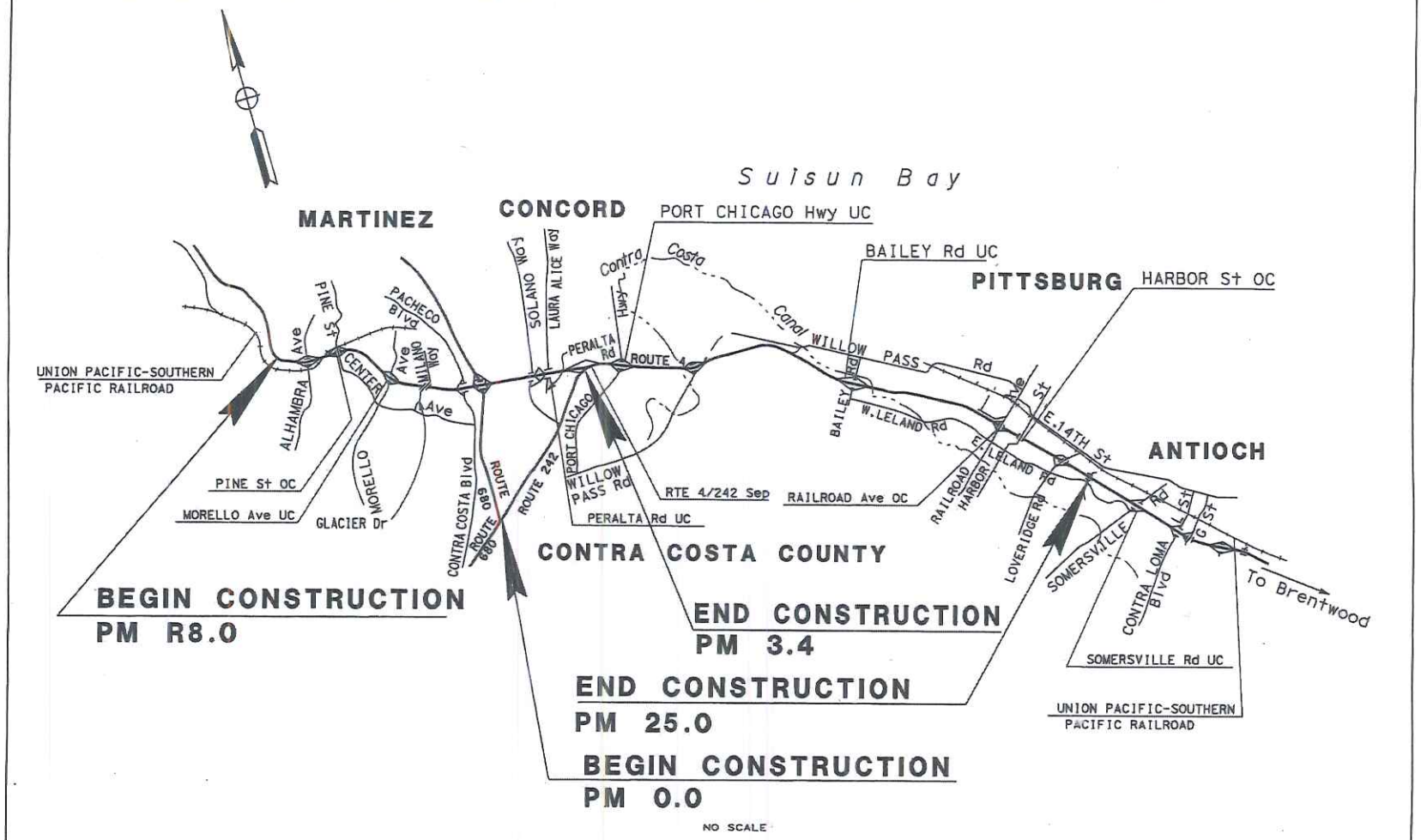


FIGURE 1: Project Limits

04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152721 OCTOBER 2013

EXHIBIT A

(Laboratory Test Results)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

TEST NO.	DATE RECEIVED	APPROVED BY	
2580-1P	JUL 23 2013		☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
	CALC. BY	DATE REPORTED SEP 06 2013	☐ RESIDENT ENGINEER

REPORT OF TESTS ON: Soil

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

SPE (USE

TEST SPECIME
BATCH MASS
DATE TESTED
COMPACTOR
INITIAL MOIST
SOAK WATER
WATER ADDE
WATER ADDE
MOISTURE AT
WET. WT. OF
HEIGHT OF B
DRY DENSITY
STABILOMET
DISPLACEME
R-VALUE BY
EXUDATION
THICK, BY STAB. mm
EXPANSION DIAL READING-mm
THICK, BY EXP. PRESS. mm

BATCH FOR: Chloride / Sulfate for MET-SAUTO

REMARKS:
Resistivity = 998
Specs: 1000 Ω-cm (min)
pH = 8.3
Specs: 5.6 (min)

TEST RESULTS			SPEC.
LL	P.L	P.I.	
CV			

			SPEC.
SURFACE	S.E.	AS REC'D.	
BASE		CRUSHED	
SUBBASE		COMBINED	
	LART	GRADE 100 REV.	
		500 REV.	
GRAVEL EQUIVALENT FACTOR			
TRAFFIC INDEX	DUR.	D_f	
R VALUE EXUDATION PRESSURE		D_0	
EXPANSION PRESSURE		% CRUSHED PARTICLES	
AT EQUILIBRIUM SPEC.		% MOISTURE BY O.D.	

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA

	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0001 (REV. 10/97)

C Awad 7/23/13-0P1

☐ PRELIMINARY TESTS ☐ ACCEPTANCE TEST ☐ INDEPENDENT ASSURANCE TEST

SAMPLE SENT TO: ☐ DISTRS. LAB ☐ HQ LAB ☐ DIST. LAB ☐ DIST. LAB ☐ TRANS. LAB ☐ MATERIAL TESTS

FIELD NO.
DIST. LAB NO. 2580-1P
LOT NO.
P.O. REQ. NO.
AUTHORIZATION NO.

2580-1P

JUL 23 2013

SAMPLE OF Soil
FOR USE IN Foundation
SAMPLE FROM Native soil
DEPTH R-13-001 (3'—7')
LOCATION OF SOURCE

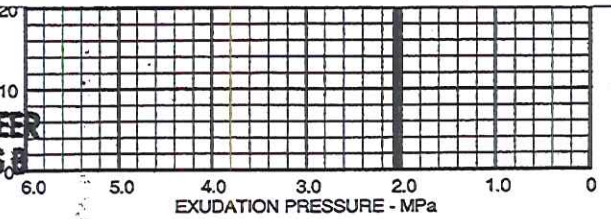
14 OF

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)	AND IS ON E OF A GROUP OF	SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)
OWNER OR MANUFACTURER		
TOTAL QUANTITY AVAILABLE	TEST RESULTS DESIRED ☒ NORMAL ☐ PRIORITY	DATE NEEDED

REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLEED 7/22/13
BY S. Awad TITLE
DIST, CO, RTE, PM 04-CC-4-PM 8/25 (1-255)
LIMITS 04-152721 (0412000628)
CONT. NO.
FED. NO.
RES. ENGR. OR SUPT. S. Awad
ADDRESS 510-622-5443 (1-~~230~~)
CONTRACTOR

MAIL TO SAME DESTINATION AS SAMPLE



STATE OF C[illegible]RNIA • DEPARTMENT OF TRANSPORTATION

REPORT [illegible]ESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

TEST NO.	DATE RECEIVED	APPROVED BY	
2580-2P	JUL 23 2013		☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
	CALC. BY	DATE REPORTED	☐ RESIDENT ENGINEER
		SEP 06 2013	

REPORT OF TESTS ON: Soil

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK. BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK. BY EXP. PRESS. mm					

REMARKS:
Resistivity = 1235
Spec: 1000 Ω-cm (min)
pH = 6.7
Spec: 5.5 (min)

TEST RESULTS			SPEC.
LL	P.L	P.I.	
CV			

SURFACE	S.E.	AS REC'D.	
BASE		CRUSHED	
SUBBASE		COMBINED	
	LART	GRADE 100 REV.	
		500 REV.	
GRAVEL EQUIVALENT FACTOR	DUR.	D_t	
TRAFFIC INDEX		D_e	
R VALUE EXUDATION PRESSURE	% CRUSHED PARTICLES		
R VALUE EXPANSION PRESSURE	% MOISTURE BY O.D.		
R VALUE AT EQUILIBRIUM SPEC.			

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA

	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORT[illegible]

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CONTRACT NO. C AWARD - 7213 - 002

JUL 23 2013

2580-2P

2580-2P

☐ PRELIMINARY TESTS ☐ PROJECT TESTS ☐ ACCEPTANCE TESTS ☐ INDEPENDENT ASSURANCE TESTS ☐ [illegible]

SAMPLE SENT TO: ☐ HDQTRS. LAB ☐ [illegible] LAB ☐ DIST. LAB ☐ TRANS. LAB ☐ [illegible]

FIELD NO. 2580-2P

DIST. LAB NO.

LOT NO.

SPEC. REC. NO.

SAMPLE OF: Soil

FOR USE IN: Foundation

SAMPLE FROM: Native Soil

DEPTH: R-13-3 (R-6)

LOCATION OF SOURCE

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)	AND IS ON E OF A GROUP OF	SAMPLES REPRESENTING (TONS, GALS, BELS, STA. ETC.)

OWNER OR MANUFACTURER

TOTAL QUANTITY AVAILABLE	TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY	DATE NEEDED

REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLEED: 7/22/13

BY: S. Awad TITLE

DIST, CO, RTE, PM: 04-CC-4-PM 8/25

LIMITS

CONT. NO. 04-152721 (04120000128)

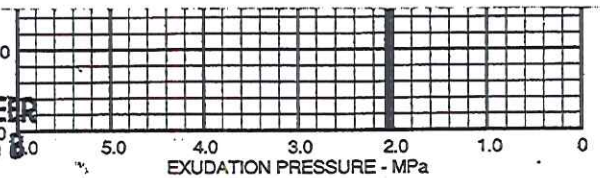
FED. NO. (1-255)

RES. ENGR. OR SUPT. ~~1-280~~

ADDRESS S. Awad ~~(1-230)~~

CONTRACTOR (51a) 622-5444

MAIL TO SAME DESTINATION AS SAMPLE



STATE OF CA ...RNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF ...ESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

TEST NO.	DATE RECEIVED	APPROVED BY	
2580-3P	JUL 23 2013		☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
	CALC. BY	DATE REPORTED	☐ RESIDENT ENGINEER
		SEP 06 2013	☐

REPORT OF TESTS ON: Soil

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK. BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK. BY EXP. PRESS. mm					

REMARKS:
RESISTIVITY = 1271
specs: 1000 Ω-cm (min)
PH = 7.4
specs: 5.5 (min)

TEST RESULTS			SPEC.
LL.	P.L.	P.I.	
CV			

			SPEC.
SURFACE			
BASE			
SUBBASE			
GRAVEL EQUIVALENT FACTOR			
TRAFFIC INDEX			
R VALUE	EXUDATION PRESSURE		
	EXPANSION PRESSURE		
	AT EQUILIBRIUM		SPEC.

S.E.	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR.	D_f		
	D_o		
% CRUSHED PARTICLES			
% MOISTURE BY O.D.			

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

SP. GR. ☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT

	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

ST... DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NO. CHWAL-2013-003

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPT... TESTS
INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ FAN... LAB
☐ MAT... LAB

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☐ DIST. LAB
SAMPLE NO.
AUTHORIZATION NO.

FIELD NO.
DIST. LAB NO. 2580-3P
LAB NO.
PROJECT REQ. NO.

2580-3P

JUL 23 2013

SAMPLE OF: Soil
FOR USE IN: Foundation
SAMPLE FROM: Native Soil
DEPTH: R-13-004 (3'-6')
LOCATION OF SOURCE

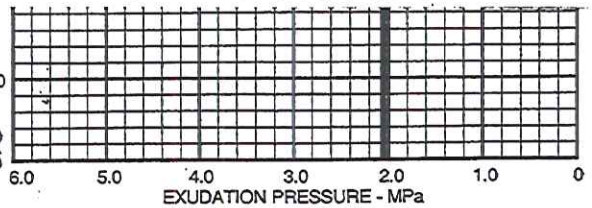
THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)	AND IS ON E OF A GROUP OF	SAMPLES REPRESENTING (TONS, GALS, BBLS. STA. ETC.)
OWNER OR MANUFACTURER		

TOTAL QUANTITY AVAILABLE	TEST RESULTS DESIRED ☒ NORMAL ☐ PRIORITY	DATE NEEDED
REMARKS: Corrosion test		

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED: 7/22/13
BY: S. Awad TITLE:
DIST, CO, RTE, PM: 04-CC-4-PM 8/25
LIMITS: 04-152721 (1-255)
CONT. NO.
FED. NO. (041200020) (1-~~246~~)
RES. ENGR. OR SUPT.
ADDRESS: S. Awad (1-~~230~~)
CONTRACTOR: (510) 622-5443

MAIL TO SAME DESTINATION AS SAMPLE



STATE OF C[illegible]ORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF [illegible]ESTS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

TEST NO.	DATE RECEIVED	APPROVED BY	
2580-4P	JUL 31 2013		☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
	CALC. BY	DATE REPORTED SEP 06 2013	☐ RESIDENT ENGINEER

GRADING ANALYSIS					
SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

REPORT OF TESTS ON: NATIVE SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK. BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK. BY EXP. PRESS. mm					

REMARKS:
Resistivity = 1589
Specs: 1000-4 ohm (min)
pH = 7.8
Specs: 5.6 (min)

TEST RESULTS			SPEC.
LL	P.L.	P.I.	
CV			

SURFACE			
BASE			
SUBBASE			
GRAVEL EQUIVALENT FACTOR			
TRAFFIC INDEX			
R VALUE	EXUDATION PRESSURE		
	EXPANSION PRESSURE		
	AT EQUILIBRIUM	SPEC.	

S.E.	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE 100 REV.		
	500 REV.		
DUR.	D_i		
	D_o		
% CRUSHED PARTICLES			
% MOISTURE BY O.D.			

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

SP. GR.	☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT	
	FINE	COARSE
AS REC'D		
CRUSHED		

REL. COMPACTION DATA	IN PLACE	OPTIMUM
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NO. C[illegible]-8203-001

2580-4P

JUL 31 2013

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPTANCE TESTS
INDEPENDENT ASSURANCE TESTS
☐ MATERIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☐ DIST. LAB
☐ TRANS. LAB

FIELD NO. 2580-4P
DIST. LAB NO.
LOCAL NO.
SHIPPING NO.
AUTHORIZATION NO.

SAMPLE OF: Soil
FOR USE IN: Foundation
SAMPLE FROM: Native Soil (Embankment EB)
DEPTH: R-13-007 (2'-5')
LOCATION OF SOURCE:

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)	AND IS ONE OF A GROUP OF	SAMPLES REPRESENTING (TONS, GALS., BBLS., STA. ETC.)
		140 T

OWNER OR MANUFACTURER

TOTAL QUANTITY AVAILABLE	TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY	DATE NEEDED

REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLEED 7/29/13
BY S. Awad TITLE
DIST, CO, RTE, PM 04-CC-4-PM 8/25
LIMITS 04-(5277) (04200628)
CONT. NO. (1-255)
FED. NO.
RES. ENGR. OR SUPT.
ADDRESS S. Awad (1-2330)
CONTRACTOR (5(a) 622-5 ironworkers)

MAIL TO SAME DESTINATION AS SAMPLE

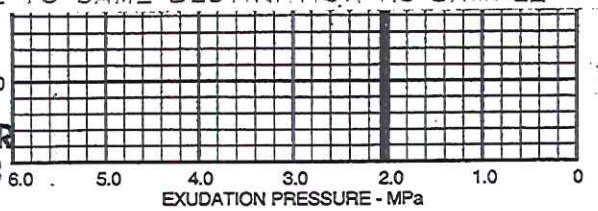


EXHIBIT B

(Log of Test boring Layout for Retaining Walls)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	4	8.0/25.0		

09-24-13
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Samuel Awad — No. 64589 — Exp 6-30-15 — CIVIL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

BENCH MARK

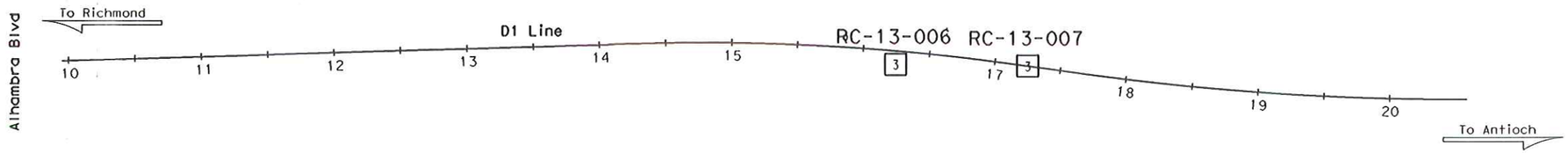
SURVEY CONTROL

JM87
Fnd 1"IP w/ CALTRANS PP
24.31 Ft Lt "D1" LINE ALHAMBRA Ave EB ON-RAMP
Sta. 16+09.36
N 2,187,357.44
E 6,092,565.32
Elev=149.14

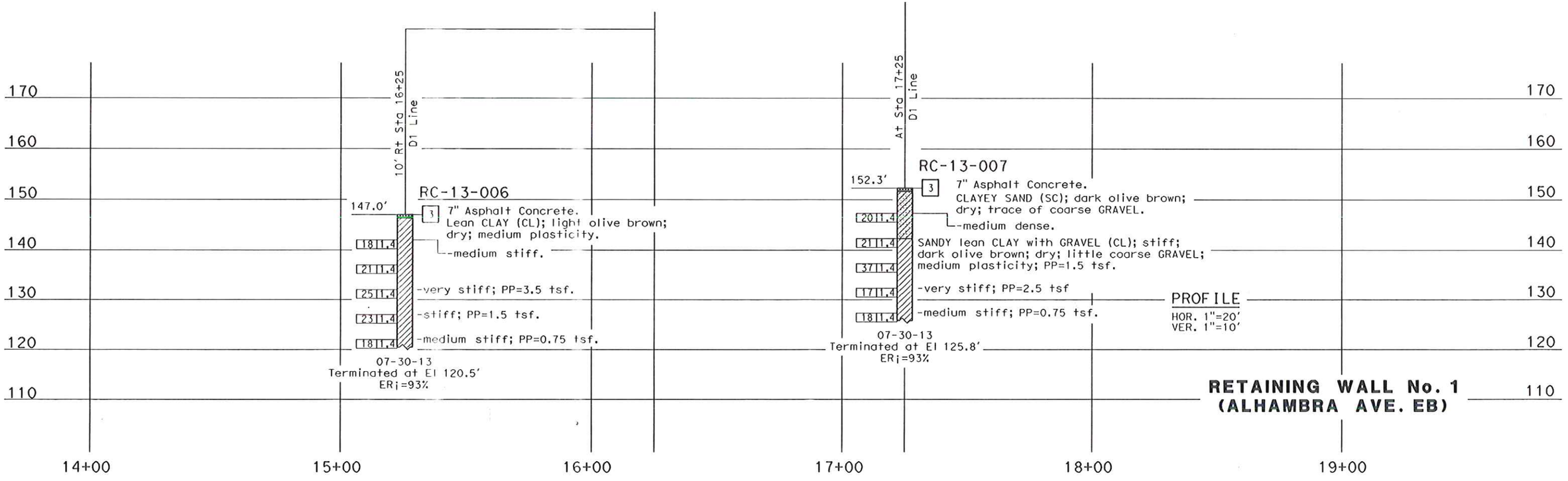
JM88 (NOT SHOWN ON PLAN)
Fnd CALTRANS 1" BRASS DISK STAMPED "JM88"
175.17 Ft N12\9400'52"E FROM Sta 20+82.45 TO
"D1" LINE ALHAMBRA Ave WB ON-RAMP
N 2,187,708.73
E 6,093,040.08
Elev=159.90

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

NOTE: PP=unconfined compressive strength (tsf) as measured by pocket penetrometer.



PLAN
1"=50'



ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	FPI RAMP WIDENING
FUNCTIONAL SUPERVISOR	DRAWN BY: M. Reynolds 09/ 13	FIELD INVESTIGATION BY:		DESIGN BRANCH A	POST MILES 8.0/25.0	LOG OF TEST BORINGS 1 OF 3
NAME: H. Nikoui	CHECKED BY: S. Yanf	S. Awad				
OSS CIVIL LOG OF TEST BORINGS SHEET	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		UNIT: 3660 PROJECT NUMBER & PHASE: 04120006281 CONTRACT NO.: 04-152721	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES / SHEET / OF	

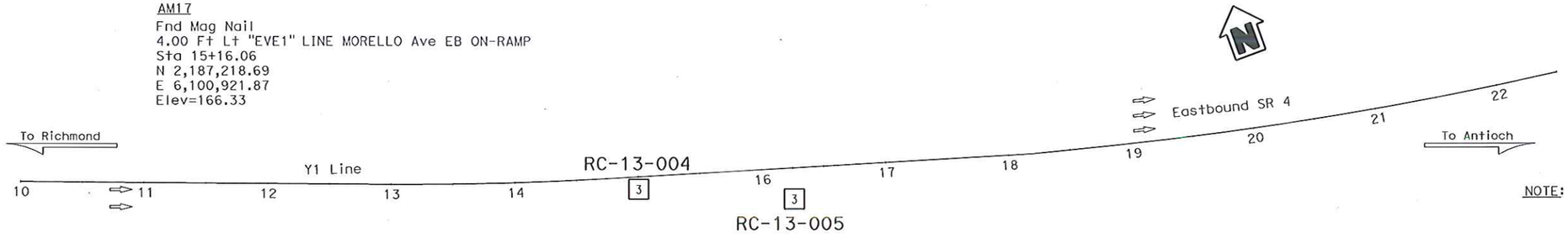
FILE => 0412000628qa001.dgn

USERNAME => S110822 DATE PLOTTED => 24-SEP-2013 TIME PLOTTED => 11:30

BENCH MARK

SURVEY CONTROL

AM17
Fnd Mag Nail
4.00 Ft Lt "EYE1" LINE MORELLO Ave EB ON-RAMP
Sta 15+16.06
N 2,187,218.69
E 6,100,921.87
Elev=166.33



AM18 (NOT SHOWN ON PLAN)
Fnd 1"IP AND CAP
36.54 Ft Rt "EYE1" LINE MORELLO Ave EB ON-RAMP
Sta 20+99.45
N 2,187,030.61
E 6,101,478.10
Elev=164.24

PLAN
1"=50'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	4	8.0/25.0		

09-24-13
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Samuel Awad
No. 64589
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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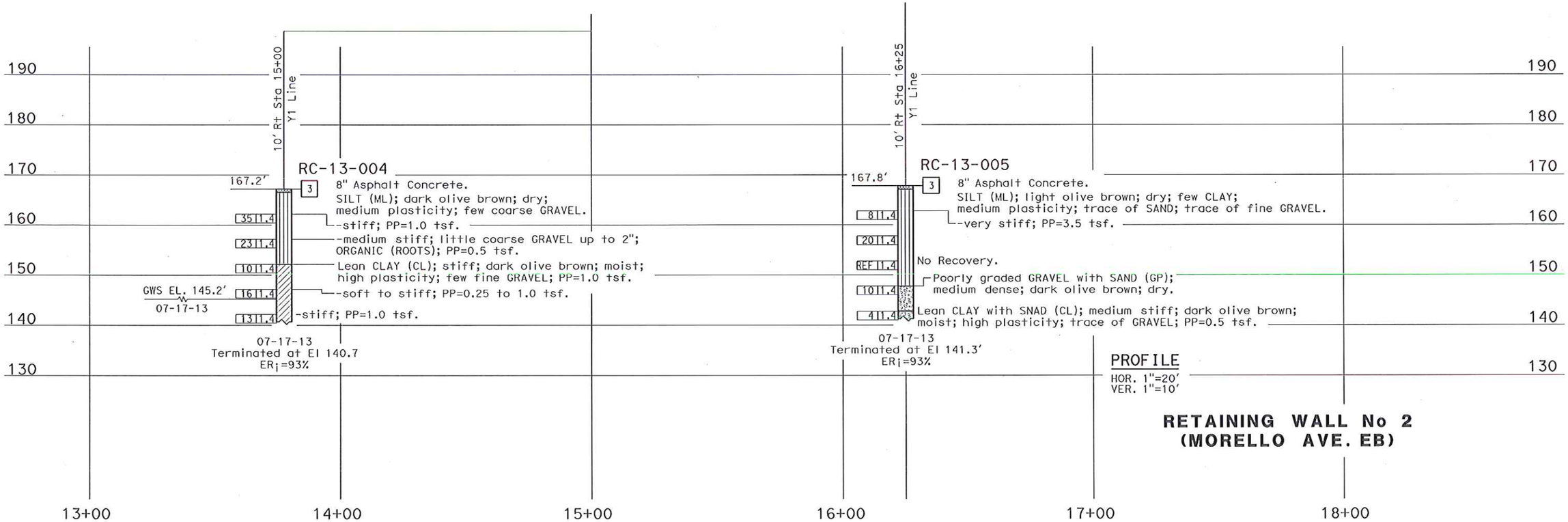
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

NOTE: PP=unconfined compressive strength (tsf) as measured by pocket penetrometer.



PROFILE
HOR. 1"=20'
VER. 1"=10'

RETAINING WALL No 2
(MORELLO AVE. EB)

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH A	BRIDGE NO. RETW	MORELLO AVE EB WALL LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: H. Nikoui	DRAWN BY: M. Reynolds 09/ 13 CHECKED BY: S. Yang	FIELD INVESTIGATION BY: S. Awad			POST MILES 10.49	

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3660
PROJECT NUMBER & PHASE: 04120006281 CONTRACT NO.: 04-152721

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
				9	9

FILE => 28-morello-eb-z-ltb01.dgn

USERNAME => s1129/8 DATE PLOTTED => 08-OCT-2013 TIME PLOTTED => 15:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	4	8.0/25.0		

09-24-13
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
Samuel Awad
No. 64589
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

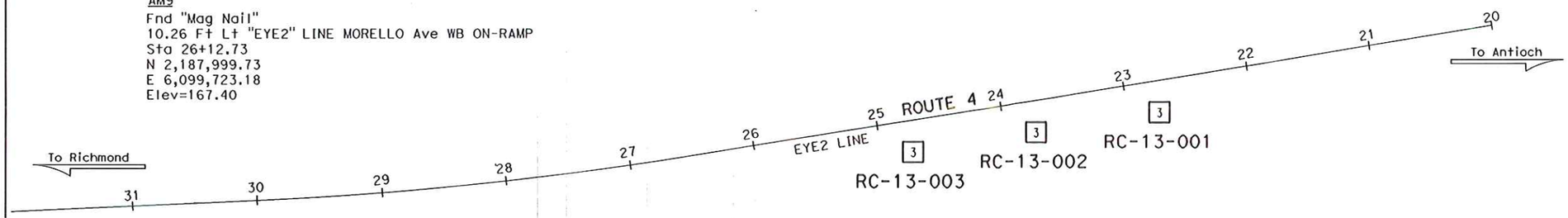
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

BENCH MARK

SURVEY CONTROL

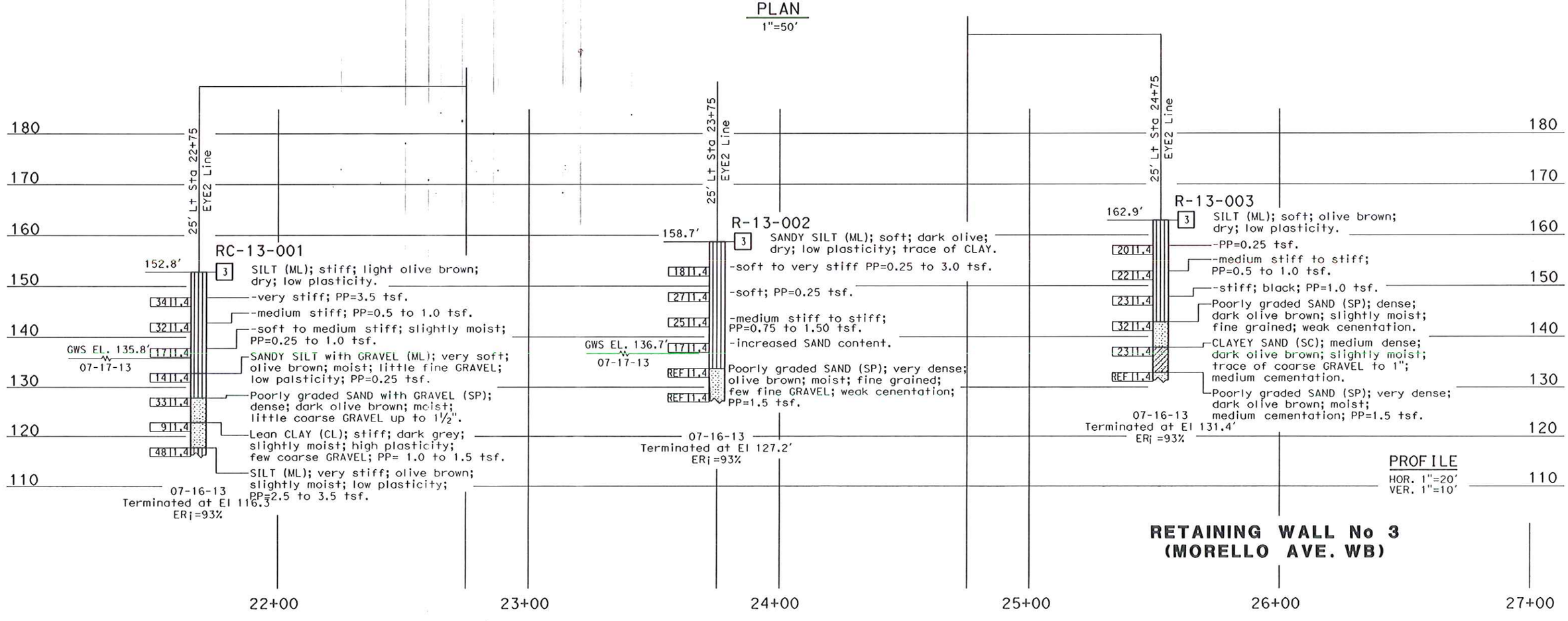
AM8 (SHOWN ON PLAN No 2)
Fnd "Mag Nail"
66.58 Ft Lt "EYE2" LINE MORELLO Ave WB ON-RAMP
Sta. 21+19.93
N 2,187,770.43
E 6,100,163.00
Elev=167.23

AM9
Fnd "Mag Nail"
10.26 Ft Lt "EYE2" LINE MORELLO Ave WB ON-RAMP
Sta 26+12.73
N 2,187,999.73
E 6,099,723.18
Elev=167.40



NOTE: PP=unconfined compressive strength (tsf) as measured by pocket penetrometer.

PLAN
1"=50'



PROFILE
HOR. 1"=20'
VER. 1"=10'

RETAINING WALL No 3
(MORELLO AVE. WB)

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	
FUNCTIONAL SUPERVISOR	DRAWN BY: M. Reynolds 09/ 13	FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
NAME: H. Nikoui	CHECKED BY: S. Yang	S. Awad	

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH A

BRIDGE NO.
POST MILES 8.0/25.0

FPI RAMP WIDENING
LOG OF TEST BORINGS 3 OF 3

UNIT: 3660
PROJECT NUMBER & PHASE: 04120006281 CONTRACT NO.: 04-152721

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => 0412000628qa003.dgn

USERNAME => S110822 DATE PLOTTED => 24-SEP-2013 TIME PLOTTED => 11:32

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2013-I-0362-1

APR 19 2013

Ms. Melanie Brent, Office Chief
Caltrans District 4 Environmental Analysis
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

Subject: Informal Consultation on the Proposed State Route 4/State Route 242 Freeway Performance Initiative Project, Contra Costa County, California (Caltrans EA 04-152721)

Dear Ms. Brent:

This letter responds to your letter dated March 1, 2013, requesting informal consultation and written concurrence for the proposed State Route 4 (SR-4)/State Route 242 (SR-242) Freeway Performance Initiative Project, Contra Costa County, California. The U.S. Fish and Wildlife Service (Service) received your letter on March 4, 2013. The proposed action involves the installation of 14 new ramp metering locations; 5 ramp metering repair locations; 11 on-ramp widening locations for mixed flow and high occupancy vehicle (HOV) lanes, maintenance vehicle pullouts and California Highway Patrol pullouts; 1 changeable message sign; 17 closed-circuit television cameras, 40 traffic monitoring stations, and 8 wireless magnetometer vehicle detection sensor repair locations along the entire length of SR 242 and from Post Mile (PM) 8.0 in the City of Martinez to Loveridge Road (PM 25.0) in the City of Pittsburg, California. This consultation concerns the effects of the proposed action on the threatened Alameda whipsnake (*Ambystoma californiense*), threatened California red-legged frog (*Rana draytonii*), threatened California tiger salamander (*Ambystoma californiense*), and endangered San Joaquin kit fox (*Vulpes macrotis mutica*). This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation (23 U.S.C. 327) allows the Secretary of the U.S. Department of Transportation acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act (NEPA) for environmental review, agency consultation and other action pertaining to the review or approval of a specific project. Caltrans assumed these responsibilities for the FHWA on July 1, 2007 through a Memorandum of Understanding (MOU) within the State of California (http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf).

The Service attended a site visit with Caltrans on February 12, 2013, to review components of the project that could affect listed species or designated critical habitat. The action area is defined in 50 CFR §402.02, as "all areas to be affected directly or indirectly by the Federal

action and not merely the immediate area involved in the action." For the purposes of the proposed action, the Service considers the action area to comprise the entire length of SR-242 and SR-4 from PM 8.0 in Martinez to PM 25.0 in Pittsburg, including all construction access, staging areas, vehicle parking, and construction work zones as specified by Caltrans and submitted to the Service in the March 1, 2013, letter to the Service, the February 12, 2013, site visit, and associated supporting documentation, email and phone correspondence.

The proposed action will occur adjacent to Alameda whipsnake critical habitat Unit 1 near the western project boundary at the eastbound SR-4 Alhambra Avenue off-ramp (PM 8.55). Critical habitat extends to within 150 feet of the project footprint. No work will occur within designated critical habitat and the proposed work at this location comprises installing a traffic monitoring station, which will occur entirely within the median between the off-ramp and eastbound lanes to avoid effects to the Alameda whipsnake and adjacent habitat features. Most construction areas are associated with on-ramps/off-ramps and paved roadways and unvegetated shoulders; however, some lane widening will be required that will extend into neighboring vegetated habitats along the road verge. Areas of road widening that will require vegetation removal do not occur in areas of designated critical habitat or extend into area of suitable habitat for listed species beyond the road verge. Caltrans has designed project elements within sensitive habitat areas to avoid take of listed species and in some cases has removed project elements entirely. Caltrans will implement conservation measures as an additional precaution to avoid take of listed species.

The Service has reviewed the project as described in the March 1, 2013, letter to the Service, supporting documentation, Caltrans' evaluation of project effects, and concurs with the determination that the project as described may affect, but is not likely to adversely affect the Alameda whipsnake, California red-legged frog, California tiger salamander, or San Joaquin kit fox as the effects will be insignificant and/or discountable. The Service concurs that the proposed action is not likely to adversely affect these species based on the following: (1) no work will occur within designated critical habitat for the Alameda whipsnake, California red-legged frog, California tiger salamander or San Joaquin kit fox; (2) work activities adjacent to designated Alameda whipsnake critical habitat will only occur on paved roadways and gravel/dirt shoulders and will avoid any work within vegetated areas; (3) all on-site personnel will attend environmental awareness training prior to beginning project activities; (4) access and staging areas will be located on existing paved surfaces or unvegetated road shoulders and all trenching will be backfilled or covered at the end of each workday, and will remain outside the driplines of adjacent trees; (5) vegetation removal will be minimized to the maximum extent practicable; and (6) Caltrans will implement construction and erosion control Best Management Practices and avoid using erosion control materials that use plastic or synthetic mono-filament netting.

This concludes informal consultation on the proposed SR-4/SR-242 Freeway Performance Initiative Project, Contra Costa County, California. Therefore, unless new information reveals effects of the proposed action that may affect listed species or designated critical habitat in a manner or to an extent not considered, or a new species is listed, no further action pursuant to the Act is necessary. If you have questions please contact Jerry Roe, Endangered Species Biologist or Ryan Olah Coast Bay/Forest Foothills Division Chief, at the letterhead address (916) 414-6600, or via email at Jerry_Roe@fws.gov or Ryan_Olah@fws.gov.

Sincerely,

for Eric Tattersall
Deputy Assistant Field Supervisor

cc:
Melissa Escaron, California Department of Fish and Game, Yountville, California

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR GHULAM POPAL
District Branch Chief
Design SHOPP

Date: November 22, 2013

Attention: K. Chounramany

File: 04-CC-4- PM 8.0/25.0
04-152721
Efis 0412000628
FPI Ramp Widening

S. A

H. Nikoui

From: S. AWAD/ S. YANG
Transportation Engineers
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design-West
Geotechnical Services
Division of Engineering Services

Subject: GEOTECHNICAL DESIGN REPORT (GDR) FOR 11 CCTV, 1 CMS, AND 4 SIGNALS

This memorandum presents our foundation recommendations for eleven Closed Circuit Television Cameras (CCTVs), one Changeable Message Sign (CMS), one Signal (Type 18-4-100), one Signal (Type 23-4-100) and two signals (Type 1-B Standard). These CCTVs, CMS, and Signals are part of the Freeway Performance Initiative (FPI) project to widen ramps and install ramp metering and Traffic Operations System (TOS) elements at various locations on Route 4 and Route 242 (see attached Figure 1).

1. SCOPE OF WORK

The following tasks were performed for the preparation of this report:

- Review of as-built plans and as-built Log of Test Borings (LOTBs);
- Field geotechnical exploration, including drilling four borings at the project site;
- Laboratory test results on selected samples;
- Geotechnical design analysis; and
- Preparation of this Foundation Report.

2. PROJECT PURPOSE AND NEED

The need for this project is to relieve congestion and reduce accidents. The purpose is to install ramp metering systems to improve highway operations.

Refer to Table 1 for general information and locations of CCTVs, Table 2 for general information and location of CMS and Table 3 for general information and location of Signals.

Table 1- General Information and Location of CCTVs

CCTV No.	Route	Direction	Post Mile	Pole Type	30" CIDH pile length ft
1	4	E/B	15.45	CCTV 45	8'- 6"
2	4	W/B	16.18	CCTV 45	8'- 6"
3	4	W/B	17.44	CCTV 45	8'- 6"
4	4	W/B	18.00	CCTV 45	8'- 6"
5	4	W/B	18.76	CCTV 45	8'- 6"
6	4	E/B	19.48	CCTV 45	8'- 6"
7	4	W/B	20.14	CCTV 45	8'- 6"
8	4	E/B	21.39	CCTV 45	8'- 6"
9	4	E/B	23.3	CCTV 45	8'- 6"
10	4	E/B	31.52	CCTV 45	8'- 6"
11	160	E/B	0.53	CCTV 45	8'- 6"

Table 2- General Information and Location of CMS

CMS No.	Direction	Post Mile	Post Type	60" CIDH pile length ft
No. 1	W/B	17.41	Model 500	25

Table 3- General Information and Location of Signals

Signal No.	Direction	Post Mile	Station	Pole Type	36" CIDH pile length ft	Pile length below ground surface
1	Pine W/B on ramp	R9.1	27+70	23-4-100	20' - 8"	16'
2	Pine W/B on ramp	R9.1	27+70	1-B Standard	12' - 10"	8' - 2"
3	Pine E/B on ramp	R9.1	18+20	18-4-100	20' - 8"	16'
4	Pine E/B on ramp	R9.1	18+20	1-B Standard	12'- 10"	8' - 2"

3. EXCEPTION TO POLICY

There is no known exception to Department policy relating to the investigation or design of the proposed structures.

4. SITE GEOLOGY AND SEISMICITY

4.1 Regional Geology

The project is located in the northern portion of the Diablo Mountain Range within the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The central portion of the project is located in the Diablo Valley, a broad, sediment-filled basin completely surrounded by the northern portion of the Diablo Mountain range. The eastern portion of the project is located on the eastern flank of the Martinez Ridge of the Diablo Mountain Range. The eastern portion of the project is located on the foothills of the northern Diablo Mountain Range, adjacent to the Sacramento River Delta

4.2 Site Geology

In general, the portion of the project located in the Diablo Valley is underlain by Quaternary alluvial deposits and the portion of the project passing over the foothills of the Diablo Mountain Range is underlain by bedrock. The depositional environment of the Quaternary deposits comprises a transgressive sequence of alluvial fan and fan-delta deposits.

4.3 Topography

The project is located at the northern part of Contra Costa County, which is located at the northern end of the Diablo Range of Central California. It is bounded on the north by Carquinez Strait, through which flows 27% of California's surface water runoff (USGS, 1997). The County is bordered to the west by the San Francisco Bay, to the east by the San Joaquin Valley, and to the south by the Livermore Valley. Contra Costa is one of the nine Bay Area counties with streams that are tributaries to San Francisco Bay. Most of the county is mountainous with steep rugged topography. Mount Diablo, in the center of the county, is one of the highest peaks in the Bay Area, reaching an elevation of 1173 meters (3,849 ft). Although the project extends over two spur ridges, the majority of the project is located on relatively low, flat lying ground of the Clayton-Concord Valley. According to the USGS topographic maps for the area, the low point of the project, along the northern margin of the Diablo Valley, is located at an elevation of 20 feet above mean sea level. The high point of the project, at the crest of a spur ridge of Mount Diablo, is located at an elevation of 475 feet above mean sea level.

Overall drainage within the project limits flows to the north of Sacramento River Delta and Carquinez Strait, and ultimately flowing west to the San Francisco Bay.

4.4 Site Seismicity

Figure 2 shows the faults near the project site. The Concord Fault is included in an Alquist-Priolo Earthquake Fault Zone because it is sufficiently active (Historic/Holocene active) and well-defined. The Concord Fault zone intersects the project alignment approximately at Highway 4 between PM 13.31 and 13.53 and at Highway 242 between PM 1.45 and 1.73. The Contra Costa Shear Zone shown west of the westernmost extent of the project is currently considered late-Quaternary or Quaternary active and therefore, not Caltrans-active. Table 3 lists these two faults and maximum credible earthquake magnitudes that can be generated. Two 1-2 mile long faults north of Route 4 are also considered late-Quaternary or Quaternary active and do not need to be considered for fault rupture (Figure 2).

Table 4. Adjacent faults and maximum magnitudes *

Fault	Distance from project (Miles)	Maximum Magnitues (Mw)
Concord	0 (Highway 4 PM 13.31 to13.53 & Highway 242 PM 1.45 to 1.73)	6.6
Southampton (Contra Costa Shear Zone)	0.31 west	6.5

*Caltrans ARS online v2.0.4

5. SUBSURFACE INVESTIGATION

The subsurface exploration was performed by the Office of Geotechnical Design West (OGDW) for CCTVs and CMS Signals. It consists of a total of 4 stem auger borings with Standard Penetration Test (SPT) and Pocket Penetrometer (PP) tests. Visual soil classifications were made in the field in accordance with the Unified Soil Classification System. Soil samples were collected at various depths for laboratory testing. The LOTB sheets will be submitted when they are ready.

6. GEOTECHNICAL TESTING

6.1 In-Situ Testing

All borings (A-13-011 through A-13-014), soil samples were taken every 5 feet from the Standard Penetration Test (SPT) sampling.

General information of borings drilled near the CCTVs is listed in Table 4 and CMS is listed in Table 5.

Table 5-Summary of Field Borings for CCTVs

Boring ID	CCTV No.	PM	Dir	Boring Depth (ft)	Date of completion	Hammer Efficiency
A-13-011	6	19.48	EB	26.5	10/1/13	57%
A-13-012	8	21.39	EB	26.5	10/1/13	57%
A-13-013	4	18.0	WB	26.5	10/2/13	57%

At boring A-13-011, the subsurface soil consists of 20 ft stiff to very stiff silt with sand. The reminder of the boring describes as very dense silty sand. The SPT blow count varies from 38 to 50 below /feet and Pocket Penterometer PP value=1.0-3.5 tsf.

At boring A-13-012, the subsurface soil consists of 10 ft stiff to very stiff lean clay with sand. The reminder of the boring describes as stiff to very stiff silt with sand. The SPT blow count varies from 13 to 30 below /feet and Pocket Penterometer PP value=1.0-3.5 tsf.

At boring A-13-013, the subsurface soil consists of stiff to very stiff silt with sand. The SPT blow count varies from 12 to 50 below /feet and Pocket Penterometer PP value=1.5-3.0 tsf.

For the rest of CCTVs, we used As-built Log of Test Borings (LOTBs).

Table 6-Summary of Field Borings for CMS

Boring ID	CMS No.	PM	Dir	Boring Depth (ft)	Date of completion	Hammer Efficiency
A-13-014	1	17.41	WB	41.5	10/29/13	57%

At boring A-13-014, the subsurface soil consists of 9 ft stiff lean clay over by 10 feet of medium stiff to very stiff silt with sand. The reminder of the boring describes as very dense silty sand. The SPT blow count varies from 43 to > 50 below /feet and Pocket Penterometer PP value=0.5-3.0 tsf.

No groundwater was encountered in all four borings during our recent soil exploration. However, groundwater elevations fluctuate seasonally and may be encountered during hole excavation.

Pine Street W/B on ramp

Based on the vertical boring (RC-12-004), subsurface soil under the ramp pavement is very dense sand (SPT blow count > 50). Please refer to LOTBs for soil nail wall at Pine Street W/B.

Pine Street E/B on ramp

Based on the horizontal boring drilled on the slope (RC-12-008), the subsurface materials on the slope are predominantly medium stiff to very stiff sandy silt and silty/clayey sand (PP value = 0.5 – 2.5 tsf). Soft siltstone bedrock was encountered at 17 feet depth (along the direction of boring). Please refer to LOTBs for soil nail wall at Pine Street E/B.

6.2 Laboratory Testing

Please see the attached Exhibit A for the laboratory test results.

7. CORROSION EVALUATION

Corrosion studies were conducted in accordance with the requirements of California Test Method No. 643. The Department considers the site to be non-corrosive for structure foundation elements, if the minimum resistivity is greater than 1000 ohm-cm and the pH value is greater than 5.5.

The following table provides the corrosion test summary:

Table 7 - Summary of Corrosion Test

Boring	*Location*	*Sample Depth ft*	*Resistivity (Ohm-Cm)*	*pH*	*Chloride Content (ppm)*	*Sulfate Content (ppm)*	*Is sample corrosive*
A-13-014	CMS	5-10	590	8.4	8	600	No
RC-12-001A	Pine Street W/B	3-15	452	5.5	458	3400	Yes
RC-12-004	Pine Street W/B	2-4	1112	7.5	N/A	N/A	No

8. FOUNDATION RECOMMENDATION

8.1 Closed Circuit Television Camera (CCTV)

Based on the estimated soil parameters from our current and past geotechnical investigations, we recommend that the 30 inch diameter CIDH pile for CCTV 40 and CCTV 45 with a depth of 8.5 ft, as specified in the 2010 Caltrans Standard Plans (sheet ES-16B), are sufficient for the proposed Closed Circuit Television Camera (CCTV). Refer to Table 1 for recommended pile lengths.

8.2 Changeable Message Sign No. 1 (CMS1)

Based on the provided plans and cross sections together with the estimated soil parameters from our geotechnical investigation for CMS1, due to relatively soft foundation soil, do not quite meet the soil criteria specified in the 2010 Caltrans Standard Plans (depth of 22 feet). Therefore, we recommend that a 3 feet extension to the standard 60-inch CIDH pile for model 500 should be used. The design length of the 60-inch CIDH pile is 25 feet for the proposed CMS1. Refer to Table 2 for recommended pile lengths.

8.3 Signal Standard (Types 18-4-100 and Type 23-4-100)

Based on the provided plans and special design for signal within soil nail wall by Structures Design, we recommend that a 9'- 8" extension to the 2010 Caltrans Standard Plans 36-inch CIDH pile (11 feet) (sheet ES-7F) for Signals Type 23-4-100 and Type 18-4-100. The deign length of the 36-inch CIDH pile is 20' – 8" (4'- 8" CIDH pile above the ground and 16'-0" CIDH pile below the ground). Refer to Table 3 for recommended pile lengths.

8.4 Signal Standard (Types 1-B Standard)

Based on the above-mentioned foundation investigation and special design for signal within the soil nail wall by Structures Design, we recommend that the 2'-0" diameter CIDH pile with the depth of 5'-0" for Standard ramp meter Type 1-B Standard should be changed to 3'-0" diameter CIDH pile with the depth of 12'-10" for the proposed Type 1-B Standard (4'- 8" CIDH pile above the ground and 8' -2" CIDH pile below the ground). Refer to Table 3 for recommended pile lengths.

9. CONSTRUCTION CONSIDERATIONS

- CIDH piling shall conform to the provisions in Section 49-4, "Cast-in-Place Concrete piles," of Standard Specifications.
- Difficult pile installation is anticipated due to the presence of caving soils and overhead/underground utilities.
- The contractor has the option of using full-length temporary casing. The use of temporary casing will require that it be removed while the concrete is being placed in order to develop the expected pile capacity and to facilitate the casing removal.
- The site at Pine Street is considered moderately corrosive. We recommend that appropriate measures in accordance with the section of the Corrosion Guidelines prepared by Caltrans Office of Materials Engineering and Testing Services (METS) should be used.

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If you have any questions or need additional information, please call me at (510) 622-5443, or Hooshmand Nikoui, Branch Chief at (510) 286-4811.

Attachments

c: TPokrywka, HNikoui, SAwad, Daily File

SAwad /mm

FIGURES

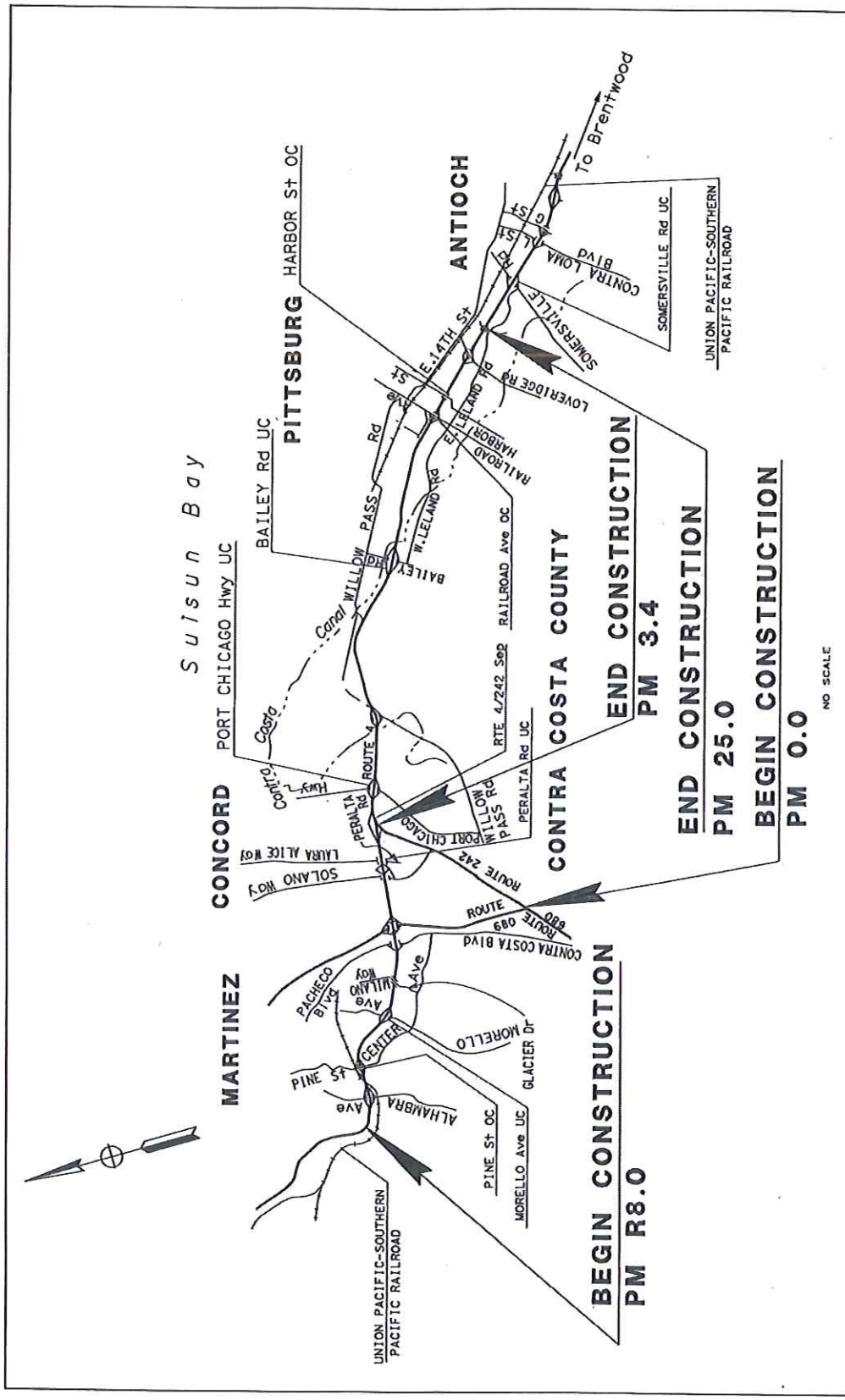
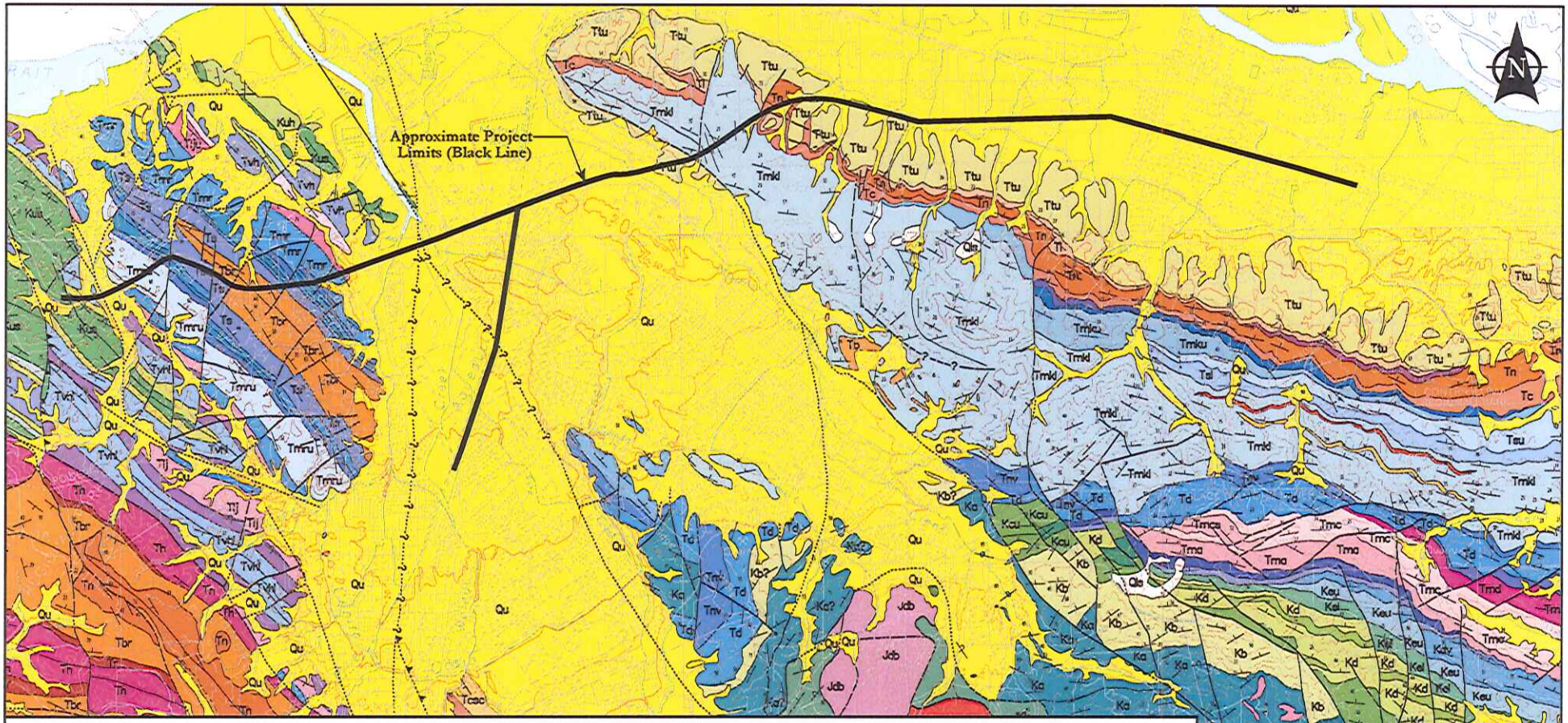


FIGURE 1: Project Limits

04-CC-4 PM R8.0/25.0
04-CC-242 PM 0.0/3.4
EA 04-152721 November 2013



LEGEND

Qu Surficial deposits, undivided (Pleistocene and Holocene)	Tvh Vine Hill Sandstone of Weaver (1953) (Paleocene)	Ts Sobrante Sandstone (Miocene)
Tl Lawlor Tuff (Pliocene)	Tvhl Vine Hill Sandstone of Weaver (1953) (Paleocene) Lower Member	Th Hambre Sandstone (Miocene)
Tmkl Markley Formation (Eocene) Lower member	Tbr Briones Sandstone (Miocene)	Ttu Tice Shale (Miocene) Upper member
Tmru Muir Sandstone of Weaver (1953) (Eocene) Lower Member	Tn Neroly Sandstone (Miocene)	Kus Great Valley sequence (Cretaceous)
Tlju Las Juntas Shale of Weaver (1953) (Paleocene and Eocene) Upper member	Tc Cierbo Sandstone (Miocene)	

Base: Preliminary Geologic Map Emphasizing Bedrock Formations in Alameda County, California (Graymer and others, 1996)
Scale: 1:75,000

Caltrans

VICINITY GEOLOGIC MAP

FREEWAY PERFORMANCE INITIATIVE
IGHWAY 04/242PM 8.0 to 25.0/3.4
CONTRA COSTA COUNTY, CALIFORNIA

EA 152721	SEPTEMBER 2013	FIGURE 2

EXHIBIT A

(Laboratory Test Results)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

REPORT OF STS ON SOILS, BASES & SUBBASES

TL-0361 (REV. 1/96)

FRONT

ATTACH FORM DCR-TL-101 HERE

680

TEST NO.	DATE RECEIVED	APPROVED BY	☐ DIS. MAT'LS. ENGR. ☐ TRANS. LAB
2580-6P	10-30-13		☐ RESIDENT ENGINEER
	CALC. BY	DATE REPORTED	☐
		11-14-13	

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	☐ SPECIF. LIMITS ☐ SOUGHT
75 mm					
63 mm					
50 mm					
37.5mm					
25.0 mm					
19.0 mm					
12.5 mm					
9.5 mm					
4.75 mm					
2.36 mm					
1.18 mm					
600 µm					
300 µm					
150 µm					
75 µm					
5 µm					
1 µm					

REMARKS:
RESISTIVITY = 590
PH = 8.4

REPORT OF TESTS ON

SOIL - FOUNDATION -

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	SUBJOB

TEST SPECIMEN	A	B	C	D	E
BATCH MASS					
DATE TESTED					
COMPACTOR FOOT PRESSURE kPA					
INITIAL MOISTURE %					
SOAK WATER mL					
WATER ADDED-mL (TOTAL)					
WATER ADDED %					
MOISTURE AT COMPACTION %					
WET. WT. OF BRIQUETTE -gms					
HEIGHT OF BRIQUETTE -mm					
DRY DENSITY OF BRIQ.-kg/m³					
STABILOMETER P_H AT 8900 N-kPa					
DISPLACEMENT					
R-VALUE BY STABILOMETER					
EXUDATION PRES. MPa					
THICK. BY STAB. mm					
EXPANSION DIAL READING-mm					
THICK. BY EXP. PRESS. mm					

TEST RESULTS		SPEC.	SP. GR.	☐ BULK (OVEN DRY) ☐ BULK (SSD) ☐ APPARENT
LL	P.L. P.I.			
CV				FINE / COARSE

SURFACE	S.E.	AS REC'D.		AS REC'D	
BASE		CRUSHED		CRUSHED	
SUBBASE		COMBINED		REL. COMPACTION DATA	
	LART	GRADE 100 REV.			IN PLACE / OPTIMUM
GRAVEL EQUIVALENT FACTOR		500 REV.		DENSITY	
TRAFFIC INDEX	DUR.	D_1		MOISTURE	
R VALUE EXUDATION PRESSURE		D_2		% REL. COMP.	
EXPANSION PRESSURE		% CRUSHED PARTICLES		SPEC.	
AT EQUILIBRIUM SPEC.		% MOISTU			

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS - m

Ashok Das
District Materials Engineer
Office of Engineering Services I

DISTRICT 4 LABORATORY
325 SAN BRUNO AVENUE
SAN FRANCISCO, CA 94103

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C 63 4083

☐ PRELIMINARY TESTS
☐ PROCESS TESTS
☐ ACCEPTANCE TESTS

INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB

☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☒ DIST. LAB

FIELD NO.
DIST. LAB NO.
LOT NO.
SHIPMENT NO.
P.O. OR REQ. NO.
AUTHORIZATION NO.

SAMPLE OF: Soil
FOR USE IN: Foundation
SAMPLE FROM: A-13-014
DEPTH: 5' — 10'
LOCATION OF SOURCE: -Native Soil

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS)
AND IS ON E OF A GROUP OF
SAMPLES REPRESENTING (TONS, CALS, BBLS, STA, ETC.)
OWNER OR MANUFACTURER
TOTAL QUANTITY AVAILABLE
TEST RESULTS DESIRED ☒ NORMAL ☐ PRIORITY
DATE NEEDED

REMARKS: Corrosion test

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLED: 10/30/13
BY: S. Awad TITLE: TL
DIST, CO, RTE, PM: 04-CC-14-PM 17.41
LIMITS: 04-15 272I
CONT. NO. E.Fis=0412000628
FED. NO. 1-240
RES. ENGR. OR SUPT.
ADDRESS
CONTRACTOR: Samuel A Awad (510) 622-5443

MAIL TO SAME DESTINATION AS SAMPLE

EXUDATION PRESSURE - MPa

Results sent to: SAMUEL AWAD

Division of Engineering Services
Materials Engineering and Testing Services
Corrosion and Structural Concrete Field Investigation Branch

Report Date: 11/22/2013
Reported by Michael Mifkovic

CORROSION TEST SUMMARY REPORT - SOIL

EA **04-152721**

EFIS: **0412000628**

Dist/Co/Rte/PM **04 / CC /004/ / 17.41 PM**

CORROSION LAB #	TL101 #	BORE #	DEPTH (FT) START	DEPTH (FT) END	MINIMUM RESISTIVITY[1] (ohm-cm)	pH[1]	CHLORIDE CONTENT[2] (ppm)	SULFATE CONTENT[3] (ppm)	IS SAMPLE CORROSIVE?
SOIL SAMPLE FROM:									
CR20130414	C634083	A-13-014	5	10	590	8.4	8	600	NO

This site is not corrosive to foundation elements (see note below).

Note: For Structural Elements, the Department considers a site corrosive if one or more of the following conditions exist: pH is 5.5 or less, chloride concentration is 500 ppm or greater, sulfate concentration is 2000 ppm or greater. Resistivity is not considered for Structural Elements. MSE backfill shall conform to the requirements of section 47-2.02C Structure Backfill in the 2010 Standard Specifications.

[1]CT 643, [2]CT 422, [3]CT 417

WATER QUALITY INFORMATION HANDOUT
CONTRACT NO. 152724

Project ID 412000628

Contra Costa 4 242 Install Ramp Metering and TOS

04-CC-4-242 PM R8.0/25.0 PM 0.0/3.4

For Contractor

California Department of Transportation
District 4, 111 Grand Avenue
Oakland, CA 94612

Disclaimer

A “Disclaimer” is required specifying that the information provided in the Storm Water Information Handout is just a guideline and is to be used for information purposes only and should not be considered a sole source document to adhere to the requirements of the new National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Number CAS000002, adopted on September 2, 2009. The contractor is required to provide water quality monitoring, sampling and implement best management practices (BMPs) based on standard industry operations, field conditions and conditions encountered based on the contractor’s means and methods. The information in this handout is not to be construed in any way as a waiver of the provisions in the CGP. Bidders and contractors are cautioned to make independent investigations and examinations as they deem necessary to satisfy the conditions encountered in performance of work, with respect to the following: sampling and monitoring locations, distribution of watershed areas for sizing of BMPs, and selection of BMPs in order to conform to the requirement of the contract documents and the CGP.

VICINITY MAP

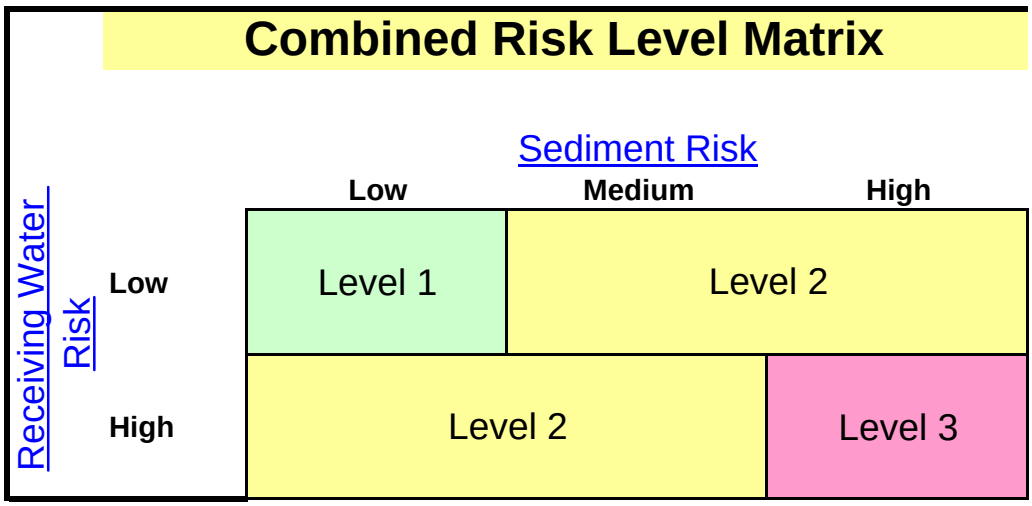
PROJECT LOCATION

RISK ASSESSMENT

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		80.12
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.37
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		1.83
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		54.249252
16	**Site Sediment Risk Factor**		**Medium**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry
A. Watershed Characteristics	**yes/no**
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?:	**yes**
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	
OR	
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan)	
http://www.waterboards.ca.gov/waterboards_map.shtml	
Region 1 Basin Plan	
Region 2 Basin Plan	
Region 3 Basin Plan	
Region 4 Basin Plan	
Region 5 Basin Plan	
Region 6 Basin Plan	
Region 7 Basin Plan	
Region 8 Basin Plan	
Region 9 Basin Plan	

Combined Risk Level Matrix



Project Sediment Risk:	**Medium**
Project RW Risk:	**High**
Project Combined Risk:	**Level 2**

R value of construction duration of August 1, 2014 to Septem1, 2016

Figure 1-Erosivity Index Zone Map

The EI distribution zone is 24

Table 1-Erosivity Index Table

EI percentage (8/1/ 2014 to 12/31/2014)

100% - 59.2% = 40.8%

EI percentage (1/1/2015 to 12/31/ 2015)

100% - 0% = 100%

EI percentage (1/1/2016 to 9/1/2016)

59.5% - 0% = 59.5%

Total EI percentage (8/1/ 2014 to 9/1/2016)

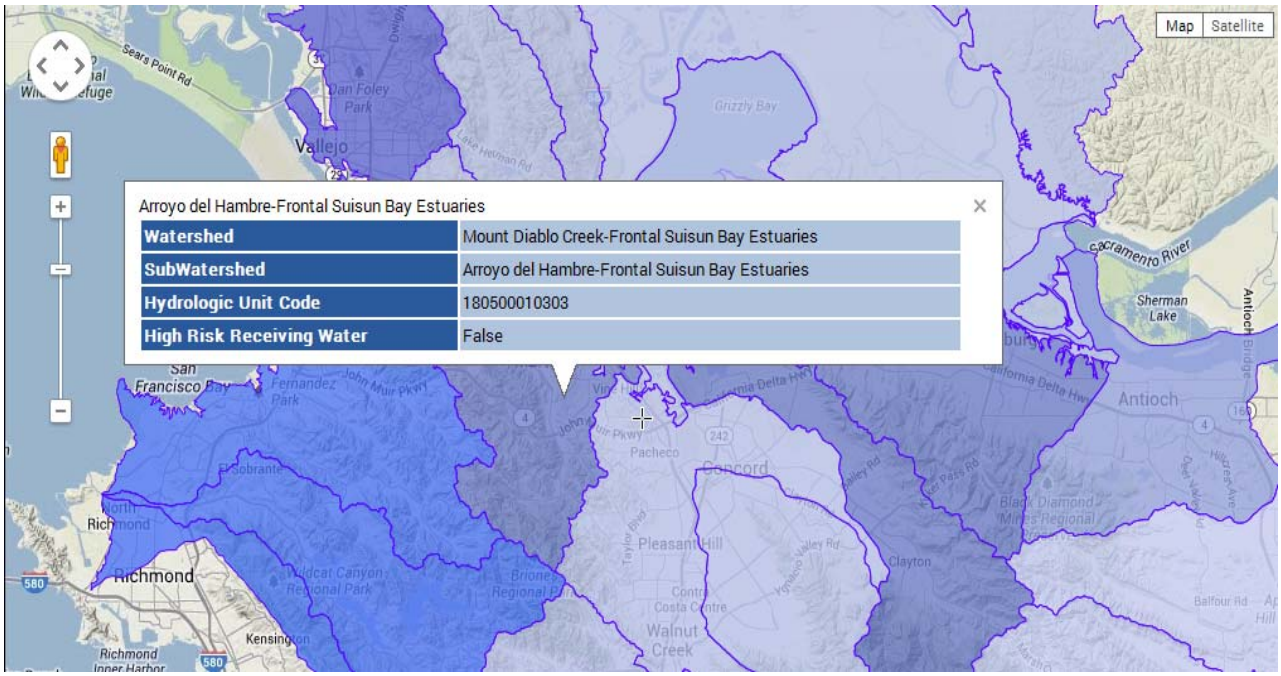
40.8% + 100% + 59.2% = 200.3%

Figure 4_ Isoerodent map of California =40

R factor is 200.3% X 40 = 80.12

RECEIVING WATER RISK

The project area drains to Mount Diablo Creek which has the beneficial use of SPAWN & COLD & Migratory



SUISUN BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SOLANO COUNTY, continued																			
Volanti Slough							E			E			E			E	E	E	
Montezuma Slough							E			E		E	E	E	E	E	E	E	E
Nurse Slough							E			E		E	E			E	E	E	
Denverton Slough							E			E		E	E			E	E	E	
Denverton Creek													E	E	E	E	E	E	
CONTRA COSTA COUNTY																			
Alhambra Creek									E			E	E		E	E	E	E	
Franklin Creek									E			E	E	E	E	E	E	E	
Arroyo del Hambre									E						E	E	E	E	
Peyton Slough					E		E			E		E	E			E	E	E	
Pacheco Creek															E	E	E	E	
Walnut Creek									E			E	E	E	E	E	E	E	
Grayson Creek									E			E	E		E	E	E	E	
Pine Creek									E			E	E	E	E	E	E	E	
Galindo Creek									E						E	E	E	E	
San Ramon Creek															E	E	E	E	
Bollinger Canyon Creek									E					E	E	E	E	E	
Las Trampas Creek									E				E		E	E	E	E	
Tice Creek													E		E	E	E	E	
Lafayette Creek									E						E	E	E	E	
Lafayette Reservoir		E					E		E					E	E	E	E*	E	
Hastings Slough										E			E			E	E	E	
Mt. Diablo Creek									E			E	E	E	E	E	E	E	
Mitchell Creek									E			E	E	E	E	E	E	E	
Donner Creek									E					E	E	E	E	E	
Mallard Slough (Contra Costa)							E			E		E	E			E	E	E	
Kirker Creek													E		E	E	E	E	
New York Slough							E			E		E	E			E	E	E	E

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

RAINFALL DATA

Rainfall Intensity can be obtained by the following link:

http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif

Refer to Chapters 800, Highway Drainage Design of Highway Design Manual for information on runoff coefficient and shed map.

CONCEPTUAL SAMPLING LOCATION PLAN

Note: The sampling location is conceptual and for reference only. The exact sampling should be determined by the Contractor based on the field condition and work phases.

Discharge Point and Recommended Sampling Location

Recommended Control Sampling Location

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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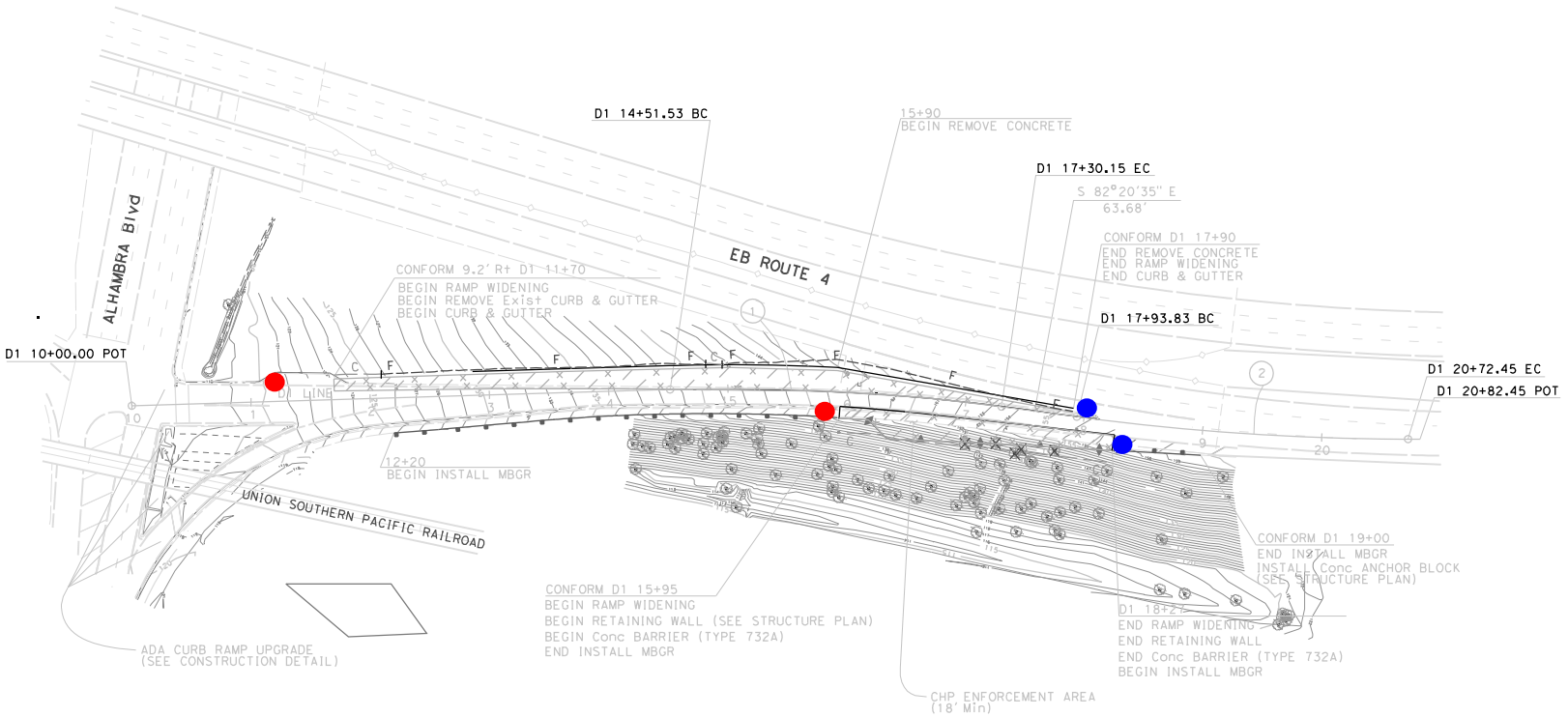

CONCEPTUAL WATER QUALITY SAMPLING PLAN

ALHAMBRA Blvd
EASTBOUND ON-RAMP

SCALE: 1" = 50'

WPC-1

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FUNCTIONAL SUPERVISOR: GHULAM POPAL
CALCULATED-DESIGNED BY:
CHECKED BY
KATIE CHOUNRAMANY
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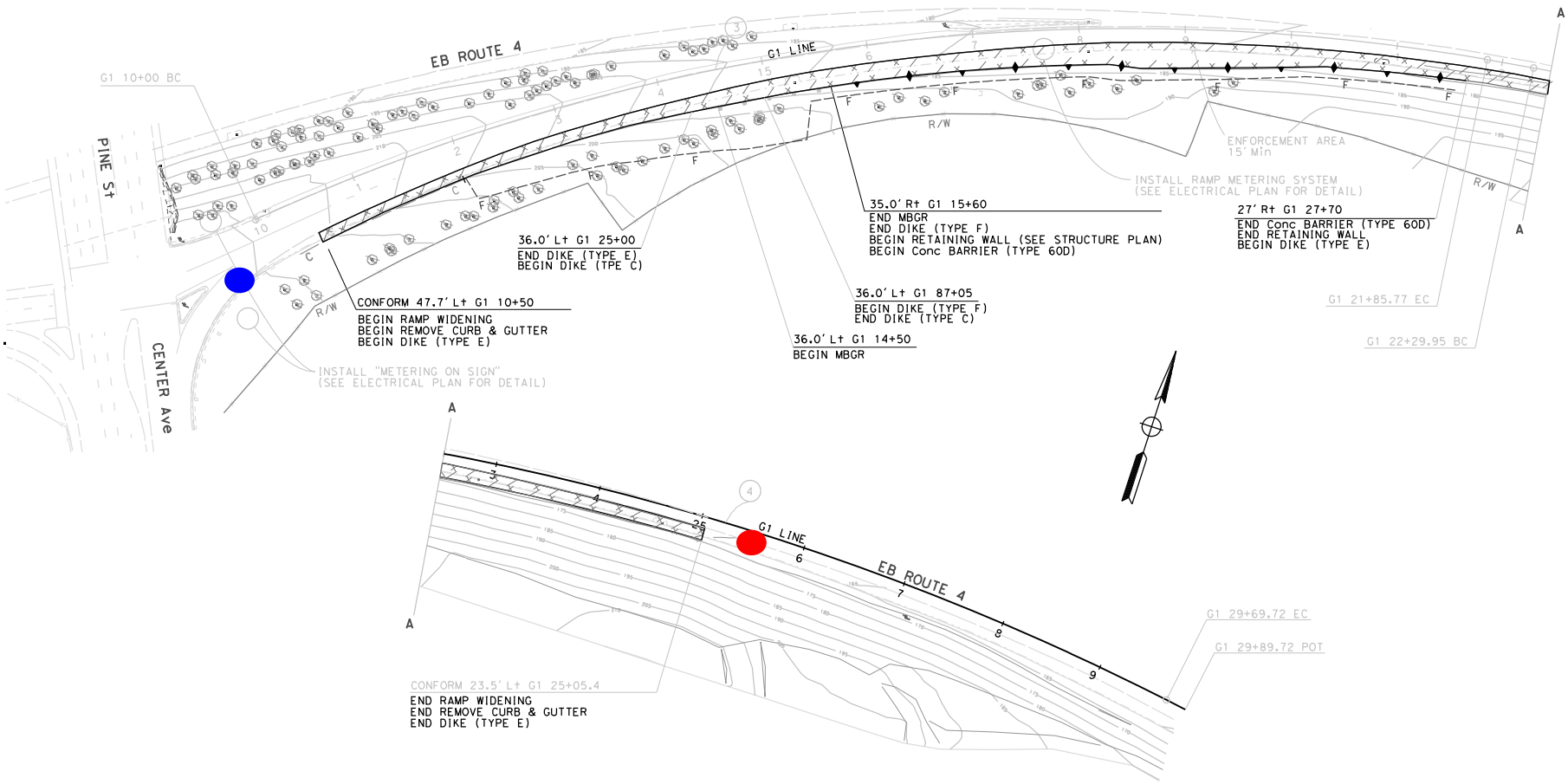

CONCEPTUAL WATER QUALITY SAMPLING PLAN

PINE/CENTER EASTBOUND ON-RAMP

SCALE: 1" = 50'

WPC-2

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

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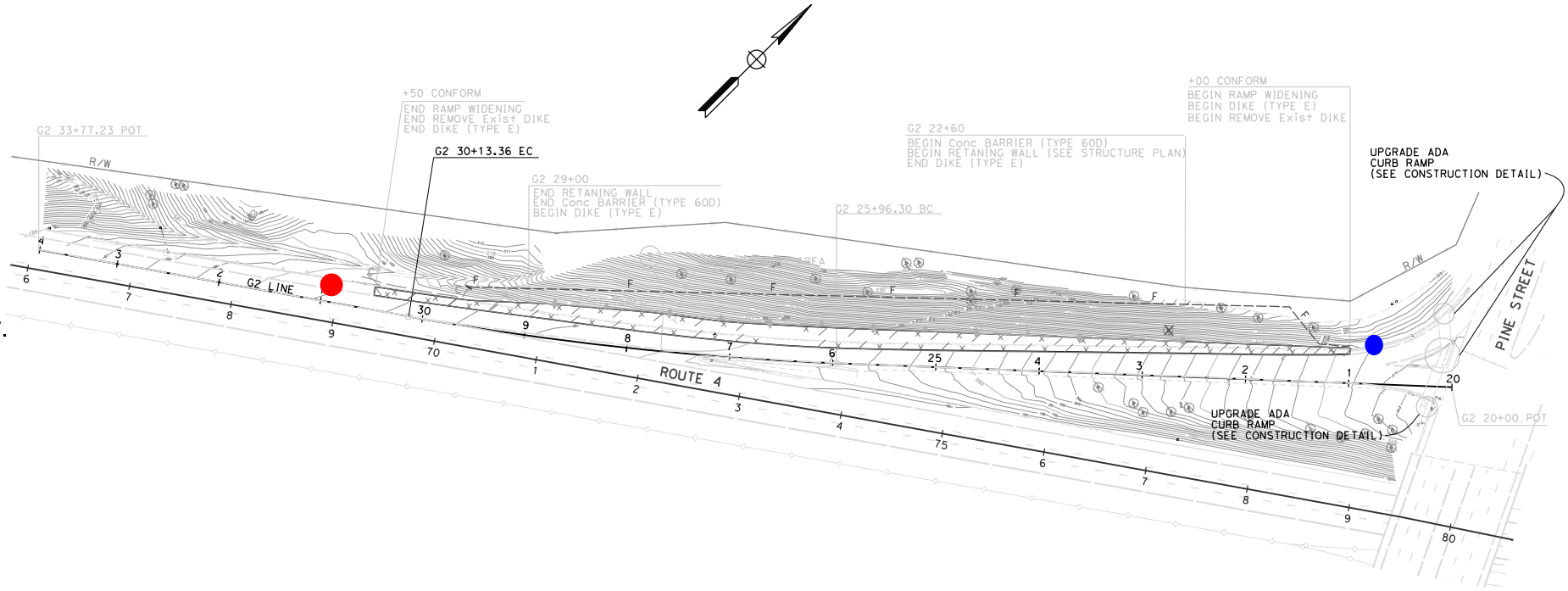

CONCEPTUAL WATER QUALITY SAMPLING PLAN

PINE STREET
WEST BOUND ONRAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-3

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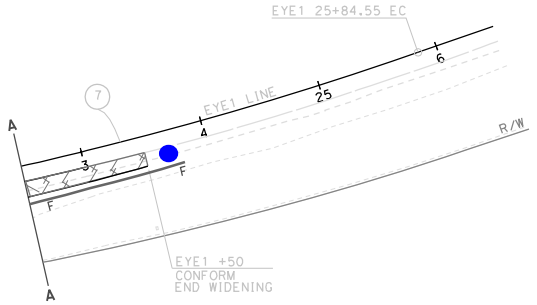

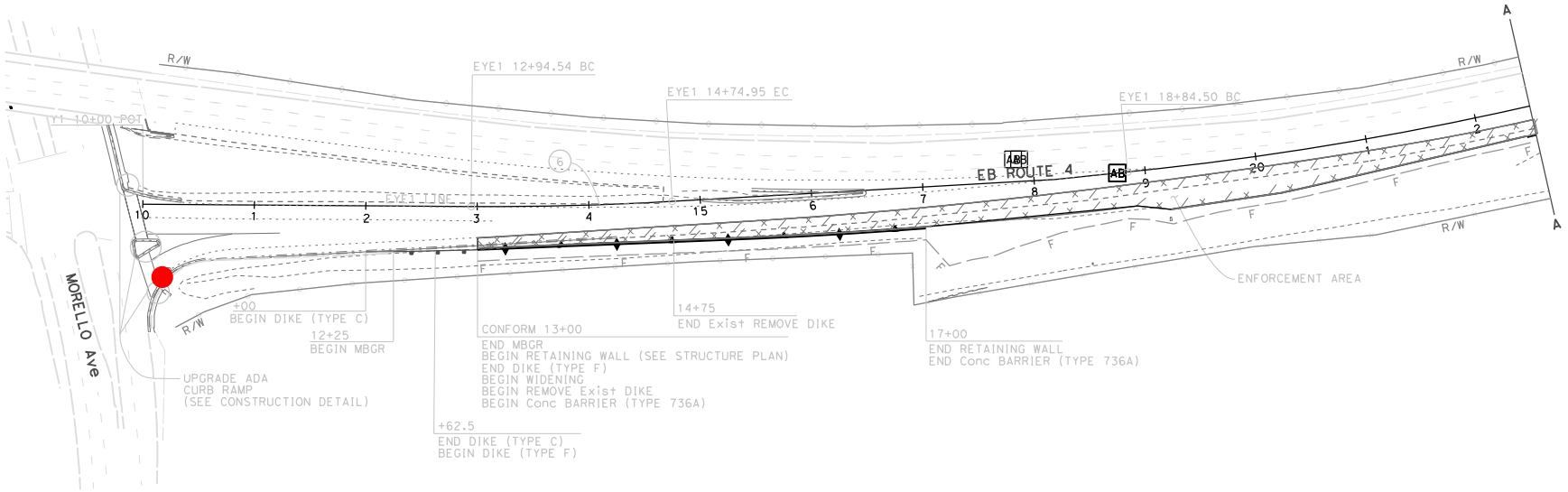

INSTALL RAMP METERING SYSTEM
(SEE ELECTRICAL PLAN FOR DETAIL)

CONCEPTUAL WATER QUALITY SAMPLING PLAN

MORELLO Ave
EASTBOUND ON-RAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-4

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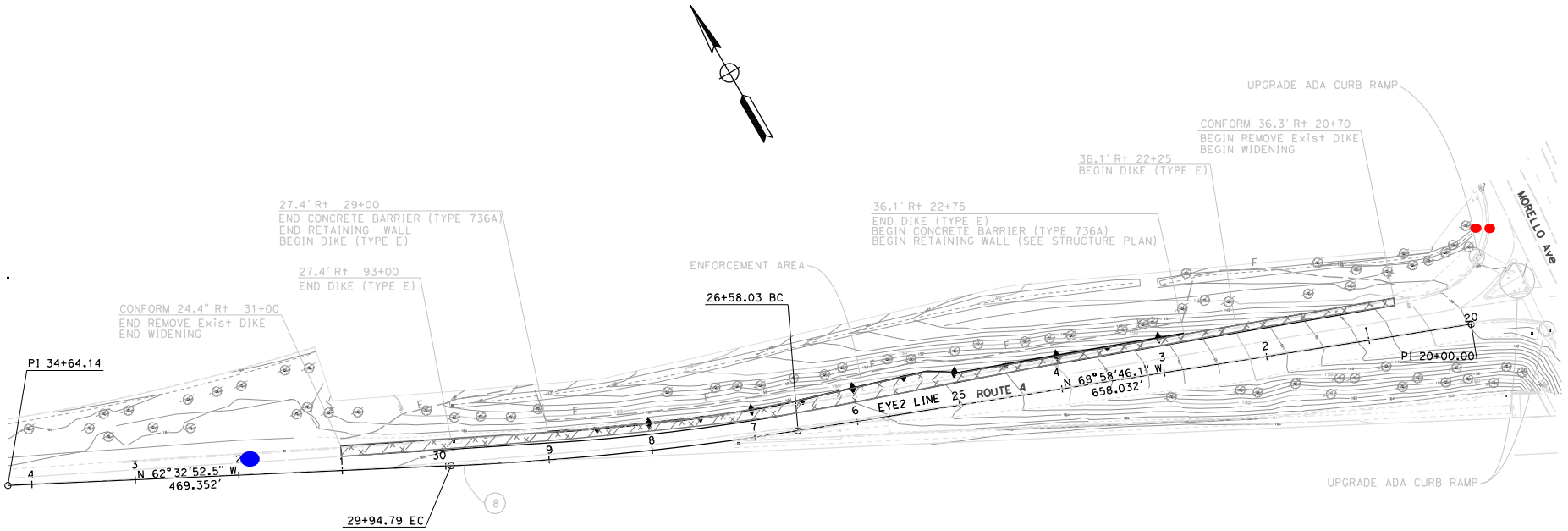

CONCEPTUAL WATER QUALITY SAMPLING PLAN

MORELLO Ave
WESTBOUND ON-RAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-5

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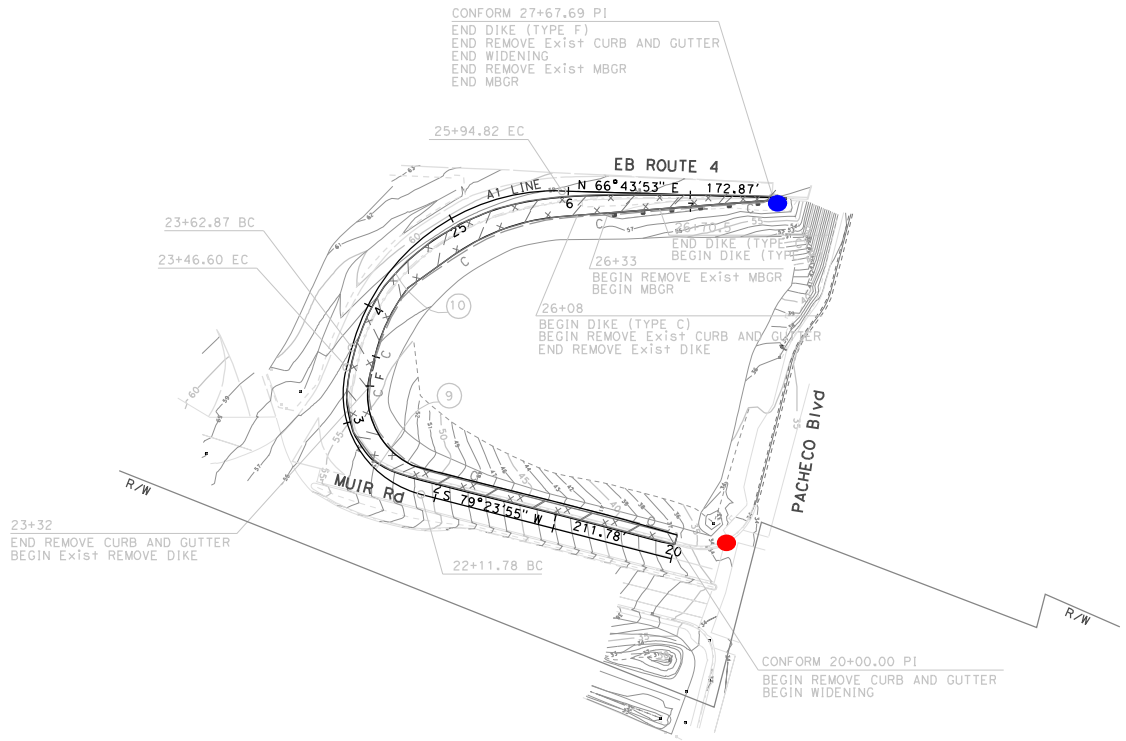

CONCEPTUAL WATER QUALITY SAMPLING PLAN

PACHECO Blvd EASTBOUND ON-RAMP

SCALE: 1" = 50'

WPC-6

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

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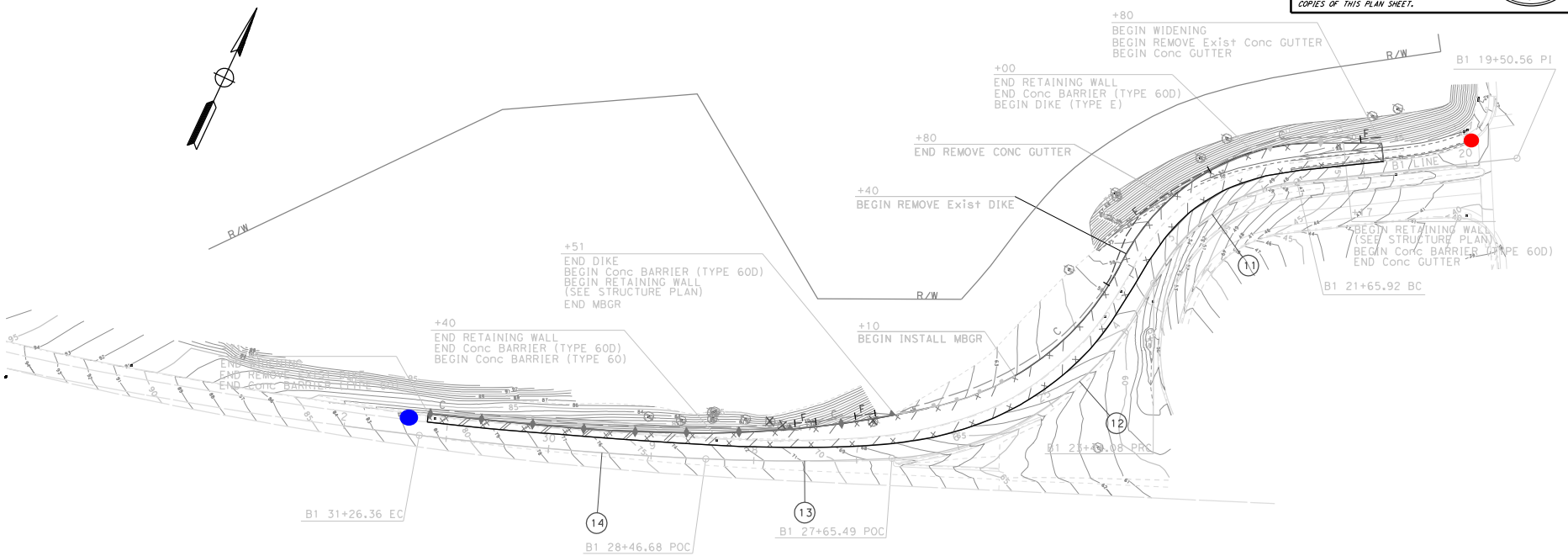

CONCEPTUAL WATER QUALITY SAMPLING PLAN

PACHECO Blvd
WESTBOUND ON-RAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-7

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DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 00000000001

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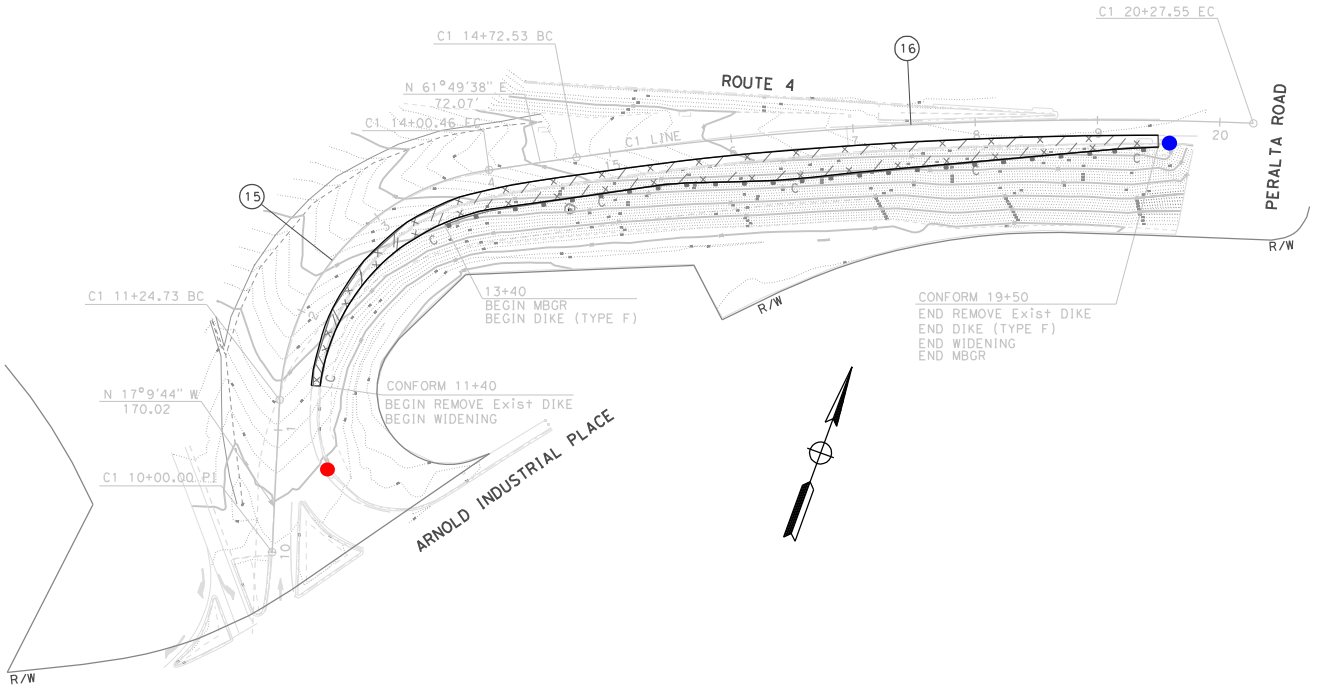

CONCEPTUAL WATER QUALITY SAMPLING PLAN

SOLANO WAY
EASTBOUND ON-RAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-8

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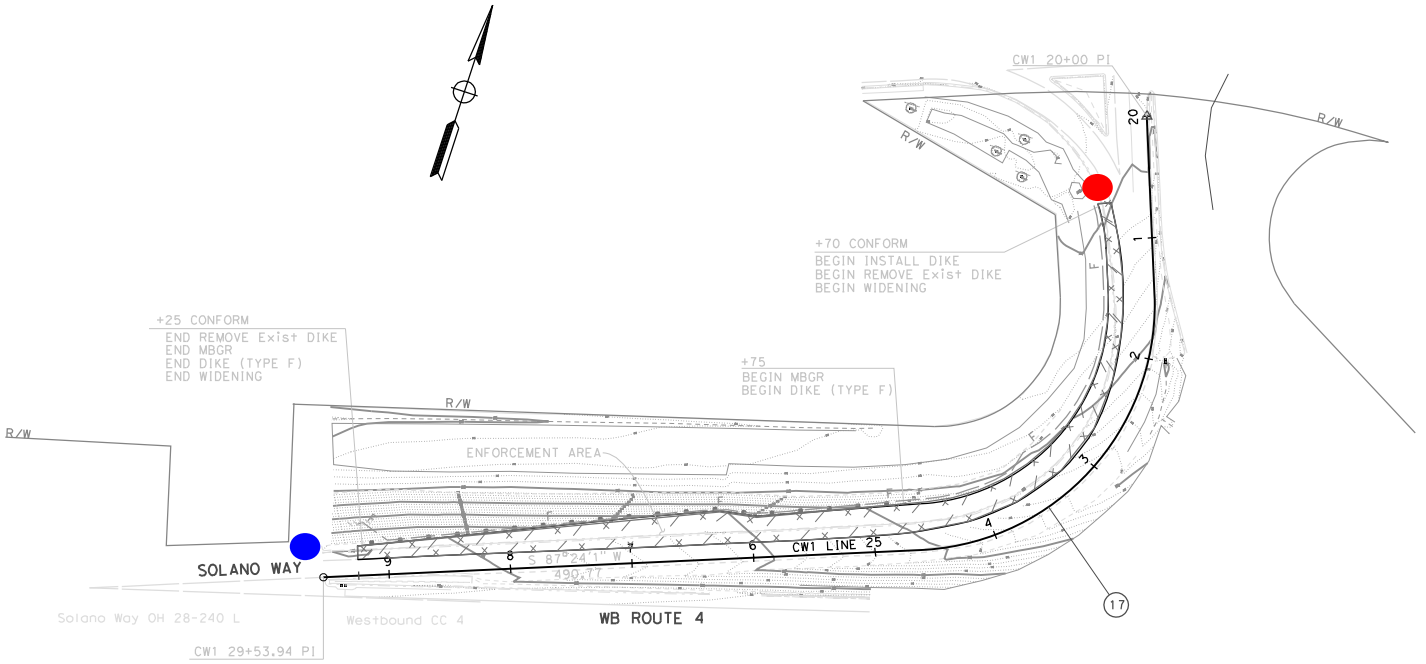

CONCEPTUAL WATER QUALITY SAMPLING PLAN

SOLANO WAY
WESTBOUND ON-RAMP

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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TIME PLOTTED => $TIME

BORDER LAST REVISED 7/2/2010
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DGN FILE => $REQUEST
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PROJECT NUMBER & PHASE 00000000001

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PLANS APPROVAL DATE

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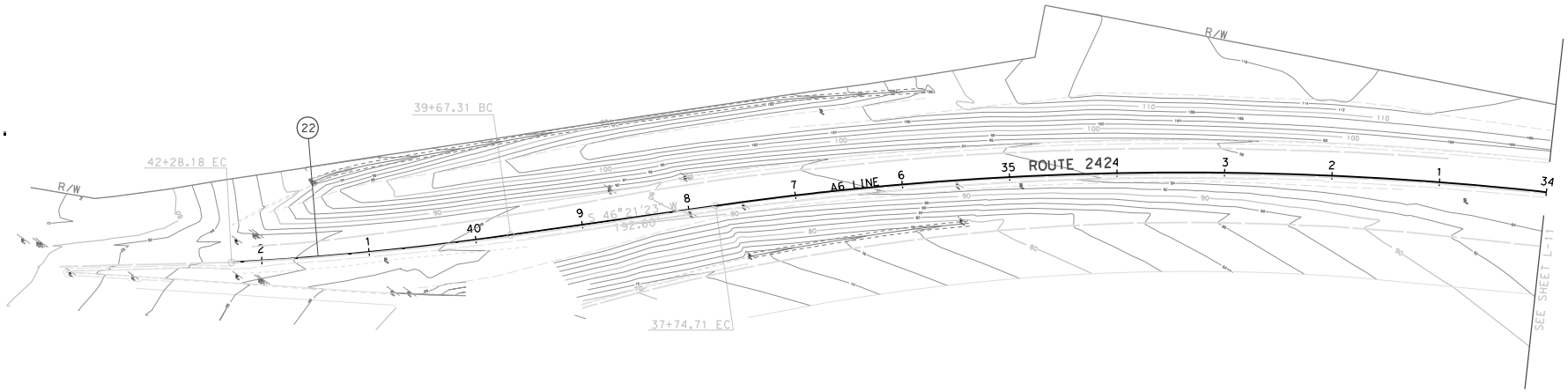

CONCEPTUAL WATER QUALITY SAMPLING PLAN

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-10

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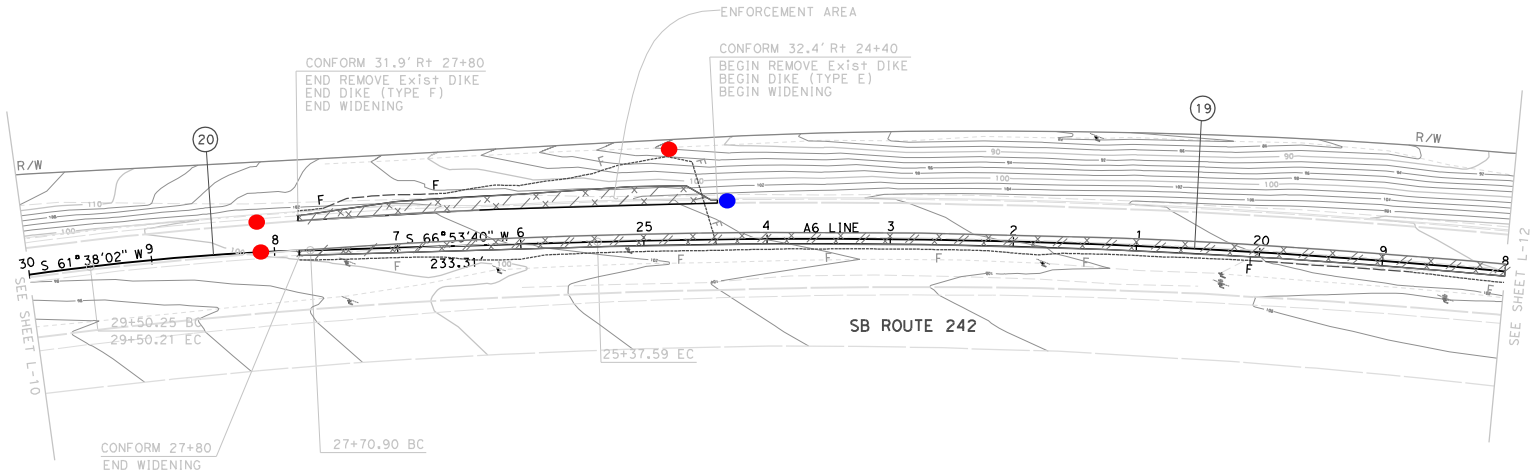

CONCEPTUAL WATER QUALITY SAMPLING PLAN

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-11

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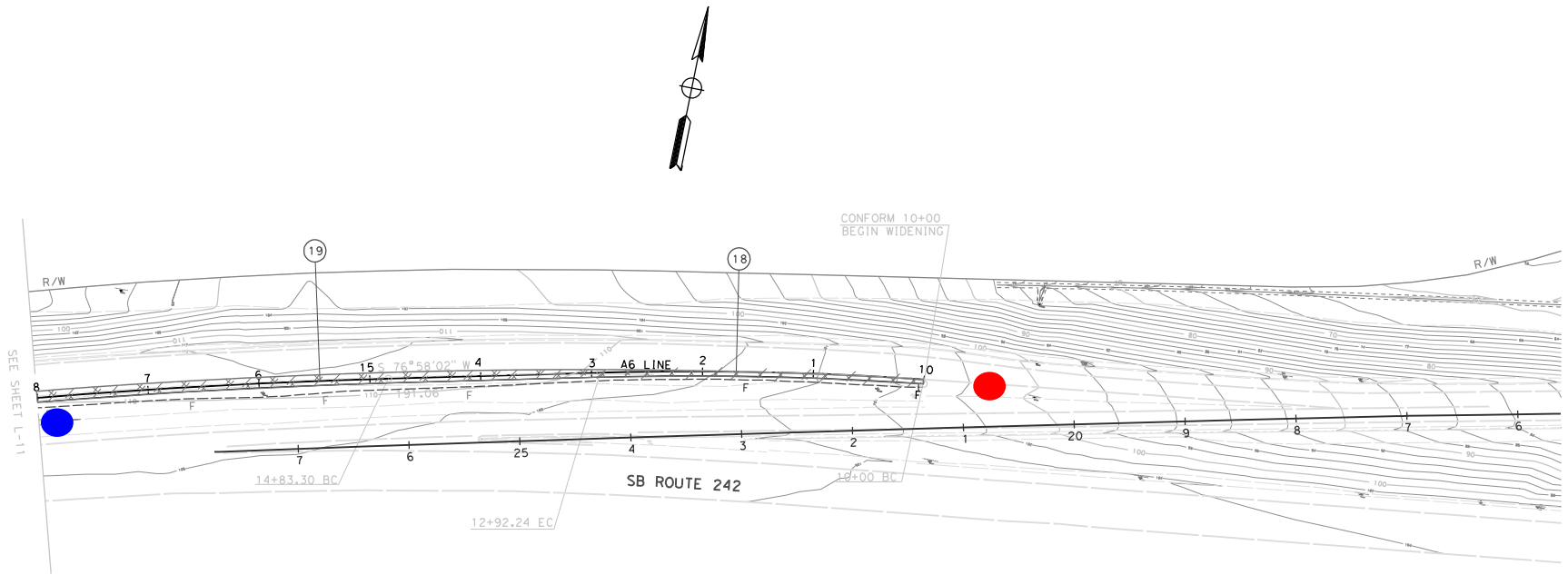

CONCEPTUAL WATER QUALITY SAMPLING PLAN

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

WPC-12

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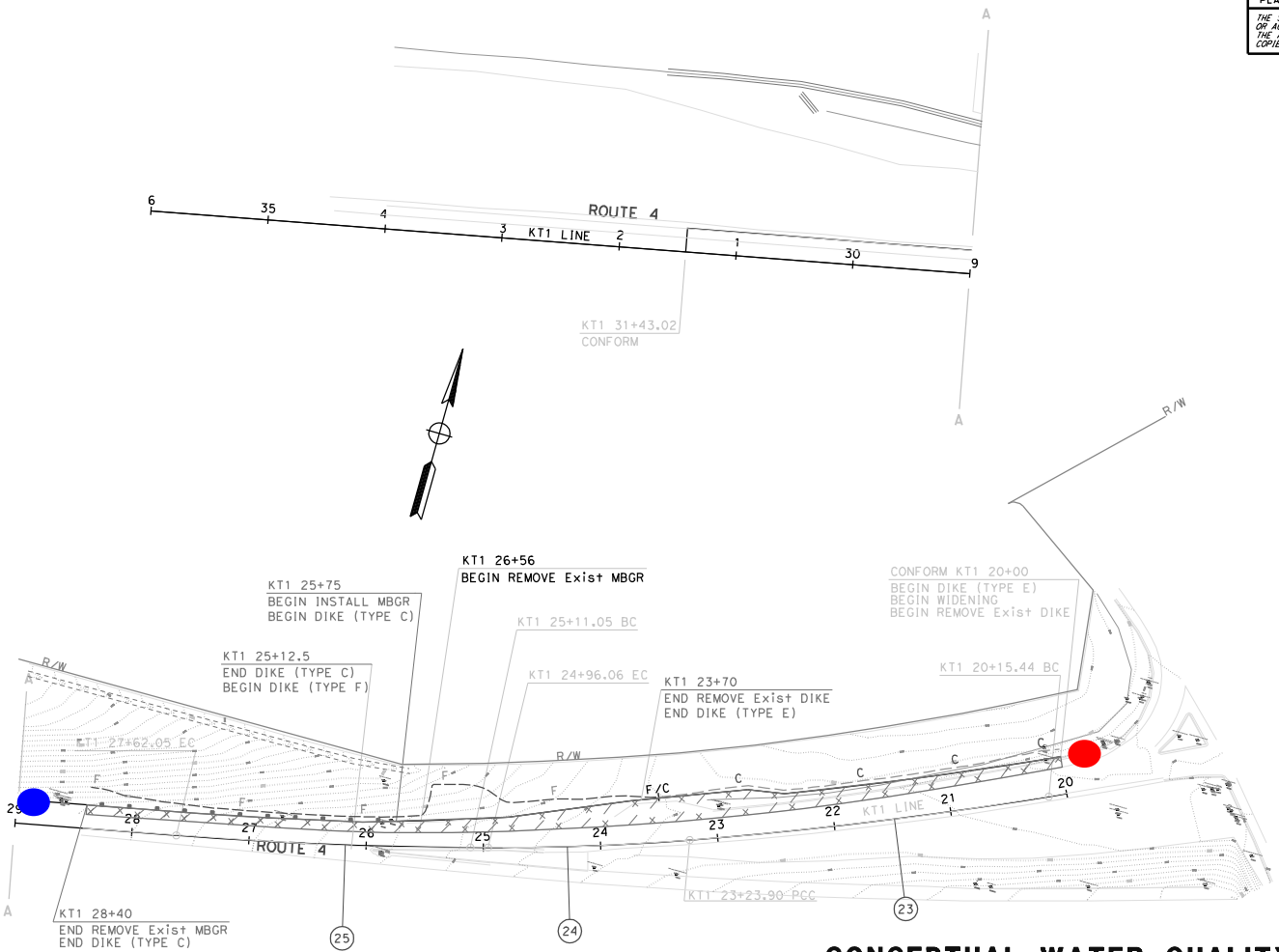

CONCEPTUAL WATER QUALITY SAMPLING PLAN LAYOUT

WILLOW PASS Rd WESTBOUND ON-RAMP

SCALE: 1" = 50'

WPC-13

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

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UNIT 0000
PROJECT NUMBER & PHASE 00000000001