FOR CONTRACT NO.: **04-3G7004**
Project ID: **0412000155**

INFORMATION HANDOUT

WATER QUALITY

WATER QUALITY INFORMATION HANDOUT

MATERIALS INFORMATION

EXCERPTS FROM PRELIMINARY SITE INVESTIGATION REPORT

OTHERS

BAY AREA RECYCLED WATER COMMERCIAL TRUCK FILL FACILITIES LOCATION GUIDE

ROUTE: 04-Mrn, SF-101, 280-Var

Water Quality Information Handout

PAVE GORE AREAS AND CONSTRUCT MPVs

Contract No. 04-3G7001

04-MRM-101-PM 7.6/16.8
04-SF-101-PM 4.0
04-SF-280-PM R2.7/R4.0

California Department of Transportation
District 04
Office of Water Quality
111 Grand Avenue, Oakland, CA 94612

February 10, 2015

TABLE OF CONTENTS

Attachments

1. Project Information

1A. Project Description

This project proposes to pave gore areas in Marin County on Route 101 and construct Maintenance Vehicle Pullout (MVPs) in San Francisco County on Route 101 and 280.

Marin County 101 Latitude and Longitude:	38.01976 & -122.5397
San Francisco County 280 Latitude and Longitude:	37.73125 & -122.43559
Construction Start Date	10/01/2015
Construction End Date	03/02/2016
Project Area	25 ac
Disturbed Soil Area	3.47 ac

1B. Receiving Water Bodies

The project's watersheds are Petaluma River (Frontal San Pablo Bay Estuaries) , Corte Madera Creek (Frontal San Francisco Bay Estuaries), and San Francisco Bay on Route 101 in Marin County; and San Mateo Creek (Frontal San Francisco Bay Estuaries) on Route 280 in San Francisco. The receiving waters: Gallinas Creek, San Rafael Creek, and Corte Madera Creek are on the 2010 303(d) listed. The project has low receiving water risk even though the Risk Level map depicts the area as high risk for receiving waters in Marin County because construction work will be done in the mainline; and even though Miller Creek and Corte Madera Creek met all three conditions for COLD, MGR, and SPWN in Marin County on Route 101 but they are not 303(d) listed for sediment risk within the project limit. The following creeks will not be included in the project because Novato Creek is more than 2 miles (11,421 feet), Mission Creek (2,984 feet) and Islais Creek (3,468 feet) are more than half a mile from the jobsite. The following creeks have Diazinon as a pollutant: Miller Creek, Gallinas Creek, San Rafael Creek, Corte Madera Creek, and Mission Creek.

1C. Climate and Rainfall Data

A National Oceanic and Atmospheric Administration (NOAA) weather station located in Napa State Hospital, CA was used to obtain an estimated number of rainy days per year and qualifying rain events. The Compliance Storm Event was also downloaded from the NOAA website.

Marin County 101	
Rainy days per year (precipitation 0.10 inches or greater)	41.4 days
Qualifying rain events per year	19.9 days
Compliance Storm Event (rainfall total for the 5 year, 24 hr storm)	2.51 inches
San Francisco County 280	
Rainy days per year (precipitation 0.10 inches or greater)	41.4 days
Qualifying rain events per year	14.3 days
Compliance Storm Event (rainfall total for the 5 year, 24 hr storm)	2.09 inches

2. Construction General Permit

A Storm Water Pollution Prevention Plan is required since the disturbed soil area is 3.45 acres.

2A. Risk Level

Marine County - Route101	
R factor	80.16
K factor	0.32
LS factor	2.94
Sediment Risk	75.51
Receiving Water Body Risk	Yes/ Low
Risk Level	2
San Francisco County - Route 280	
R factor	50.05
K factor	0.32
LS factor	3.73
Sediment Risk	59.77
Receiving Water Body Risk	Yes/ Low
Risk Level	2

3. Temporary Construction Site BMPs

The estimated quantities of temporary construction site BMPs are in the PSE package.

3A. Run-on Discharges

Run-on discharges are off-site storm water that can potentially run to the site. Run-on discharges should be calculated based on a rainfall intensity for a 2-year 24-hour event per the PPDG. The Rational Method is typically used to calculate run-on discharges.

Equation: $Q=CiA$ where Q = Run-on discharge (cubic feet per second)
C = Runoff coefficient (see HDM Figure 819.2A)
i = 2-year, 24-hour rainfall intensity (inches/hour)

Note: Run-on is anticipated to be minimal; the Contractor needs to verify all run-on for the proposed project.

ATTACHMENT 1
VICINITY MAP

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

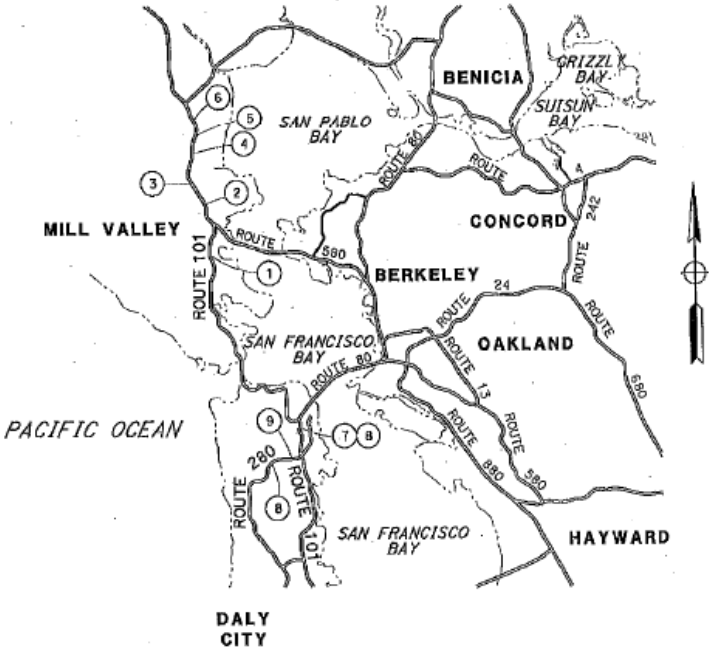
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN MARIN COUNTY
AND IN THE CITY AND COUNTY OF SAN FRANCISCO
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Mrn, SF	101, 280	Var		



LOCATIONS OF CONSTRUCTION

LOCATION No.	COUNTY	ROUTE	PM	DESCRIPTION
1	Mrn	101	7.6	MADERA Blvd (SB ON-RAMP AND OFF-RAMP)
2	Mrn	101	11.2	MISSION Ave (MEDIAN SLOPE AND NB ON-RAMP SHOULDER)
3	Mrn	101	12.5	N SAN PEDRO Rd (NB ON-RAMP AND OFF-RAMP)
4	Mrn	101	14.6	LUCAS VALLEY Rd (NB AND SB)
5	Mrn	101	15.5	MILLER CREEK Rd/St VINCENT Dr (NB AND SB)
6	Mrn	101	16.8	NAVE Dr (NB ON-RAMP AND OFF-RAMP)
7	SF	101	4.0	VERMONT St OFF-RAMP
8	SF	280	R2.7	STILL St
9	SF	280	R3.8/R4.0	NB ROUTE 280 CONNECTOR TO SB ROUTE 101

PROJECT MANAGER
JOY LEE

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

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.	04-3G7004
PROJECT ID	0412000155

LAST REVISED DATE PLOTTED => 10-DEC-2014
TIME PLOTTED => 12:16
09-17-14

11-13-14
LAST REVISED
3

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

NO SCALE


to Santa Rosa
Route 101
County Postmile:
MRN 16.8
Statewide Postmile:
457.827
Route 280
County Postmile:
SF R3.8
Statewide Postmile:
53.761
to San Jose
Sonoma
Napa
Petaluma
Fairfield
American Canyon
Vallejo
Novato
San Pablo Bay
Suisun Bay
Benicia
Rodeo
Martinez
Pinole
Bay Point
Pittsburg
Antioch
Concord
El Sobrante
San Pablo
Richmond
Pleasant Hill
Clayton
Walnut Creek
Lafayette
Mt Diablo
Alamo
Moraga
Danville
Tassajara
San Ramon
Alameda
San Leandro
Dublin
Castro Valley
Hayward
Pleasanton
Livermore
Daly City
South San Francisco
San Bruno
Pacifica
Millbrae
San Mateo
Union City
Fremont
San Rafael
Kentfield
Larkspur
Mill Valley
Point Reyes National Seashore
Gulf of the Farallones Marine Sanctuary
Farallon Islands
Grizzly Island Wildlife Area

ATTACHMENT 2
RAINFALL DATA

Rainfall Intensity Information: http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif

RAINNY DAYS PER YEAR & QUALIFYING RAIN EVENT PER YEAR

Marin County - Route 101

Month	>=0.1 in	>=0.5 in
January	7.5	4.3
February	6.5	3.9
March	5.8	2.7
April	3.2	1.2
May	1.4	0.4
June	0.4	0.1
July	0.1	0
August	0.2	0.1
September	0.4	0.1
October	1.7	1
November	4.7	2.5
December	6.4	3.7
Yearly Total	38.3	19.9

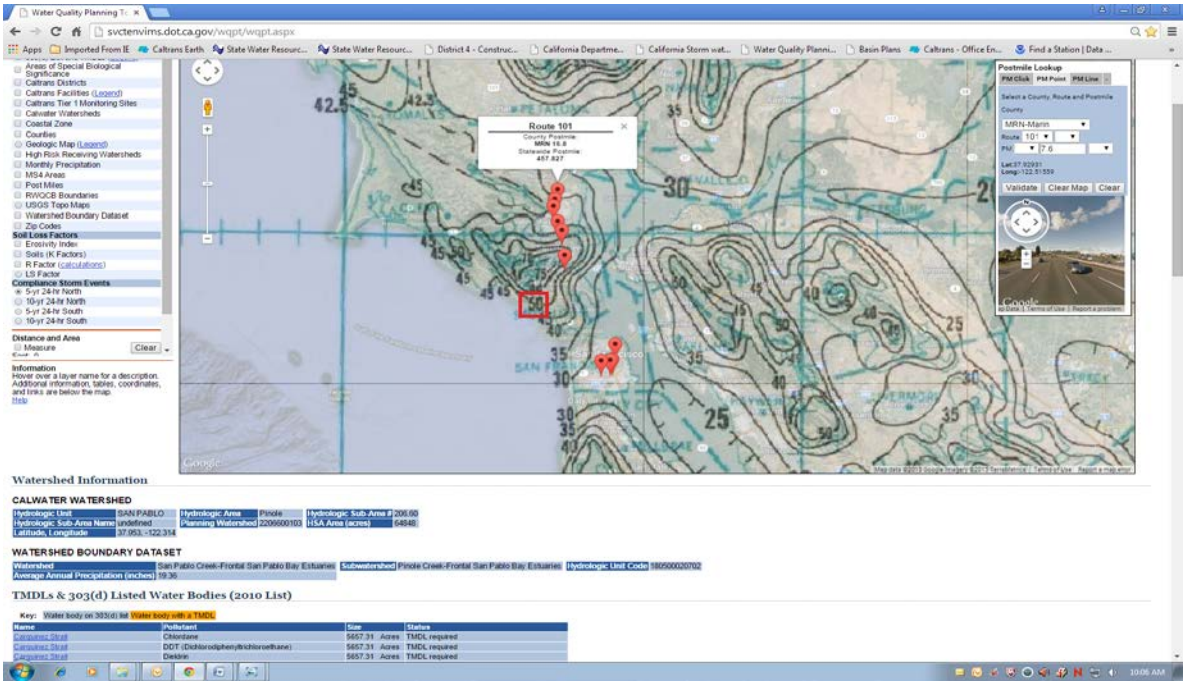
San Francisco County - Route 280

Average number of days per month with precipitation:

Month	>=0.1 in	>=0.5 in
January	7.9	3.1
February	6.8	2.5
March	6.2	1.9
April	3.2	0.8
May	1.6	0.2
June	0.4	0.1
July	0	0
August	0.2	0
September	0.7	0.1
October	1.9	0.8
November	5.4	1.9
December	7.2	2.9
Yearly Total	41.4	14.3

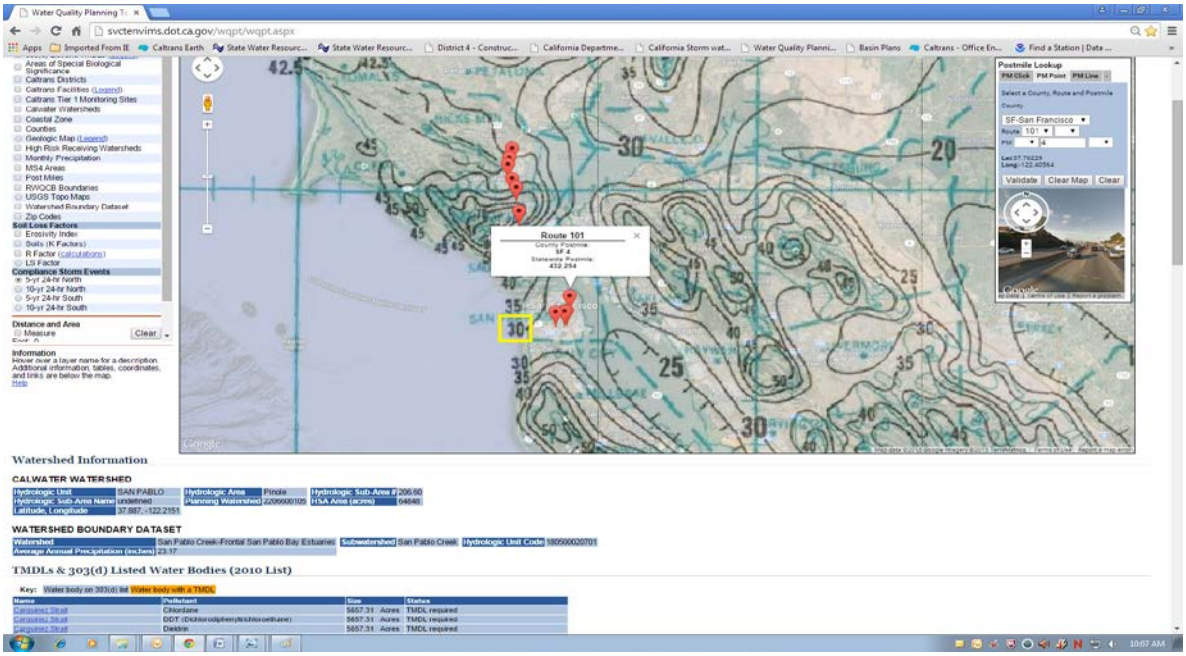
COMPLIANCE STORM EVENT

Marin County - Route 101



50/19.9 = 2.51

San Francisco County - Route 280

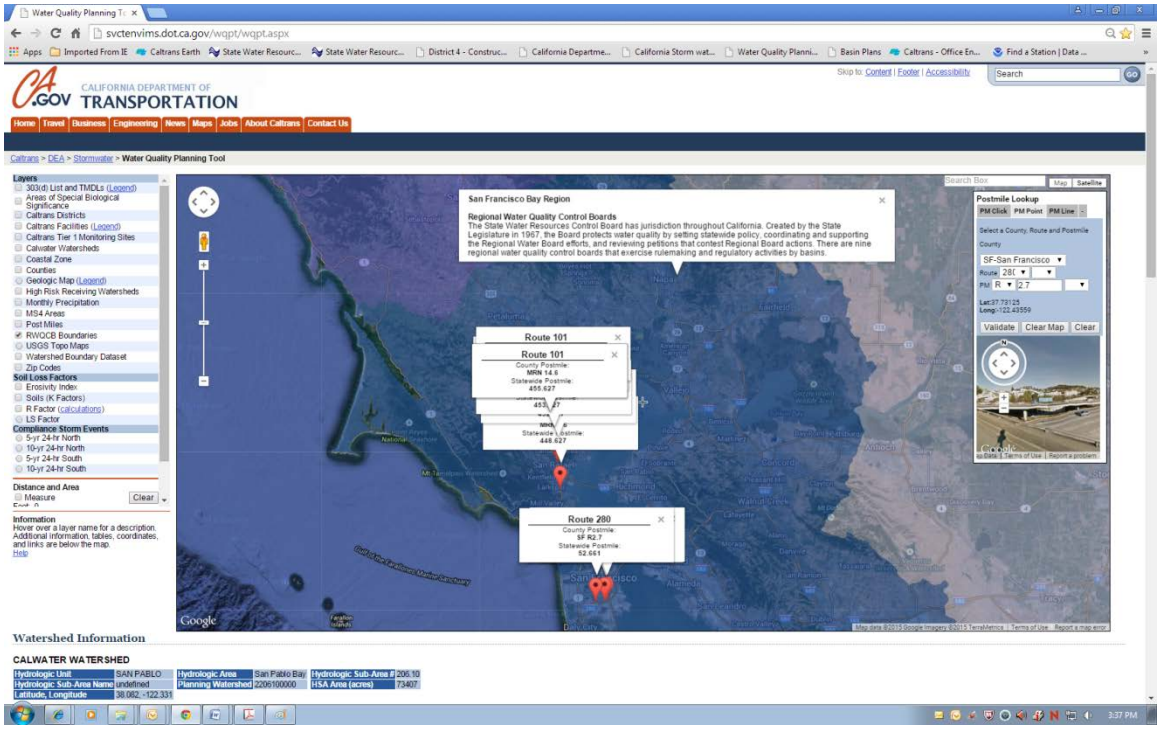


30/14.3 = 2.09

ATTACHMENT 3

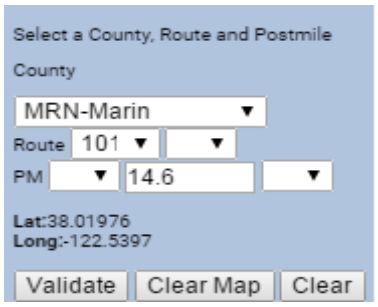
CONSTRUCTION RISK ASSESSMENT

SAN FRANCISCO BAY REGION 2

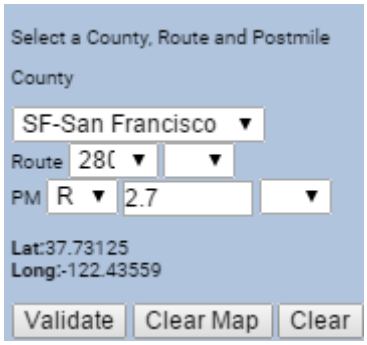


LONGITUDE AND LATITIUDE

MRM 101 LOCATIONS



SF 280 LOCATIONS



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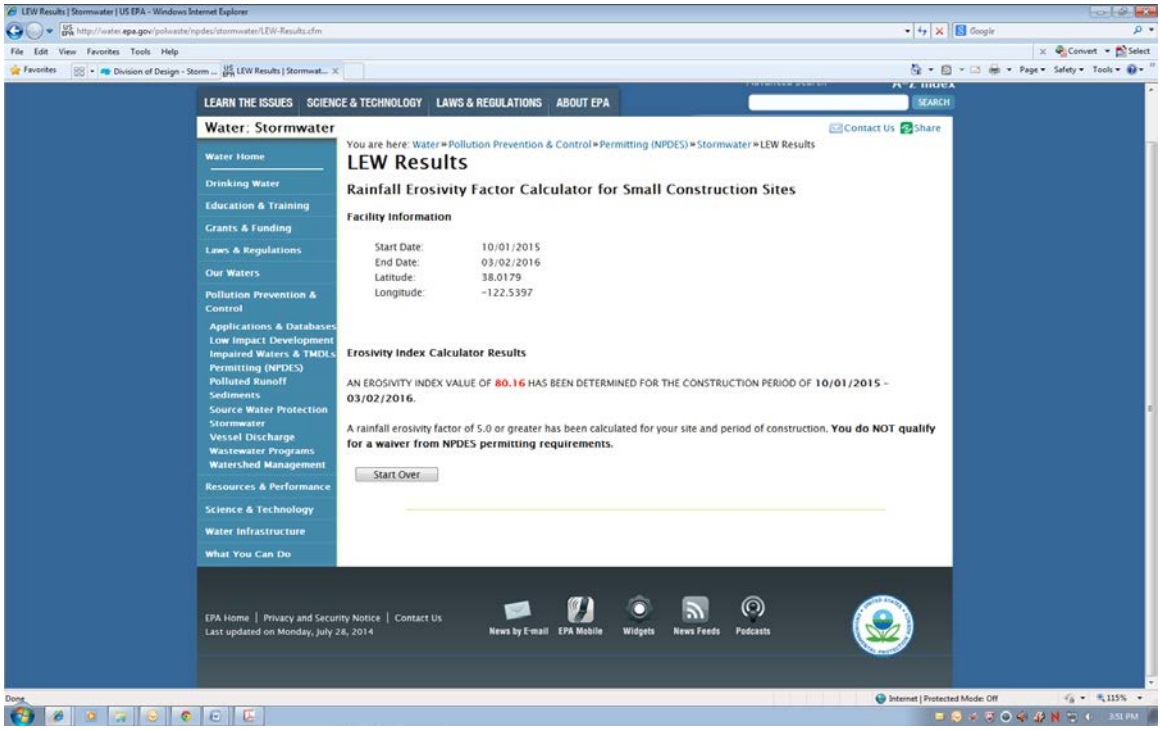
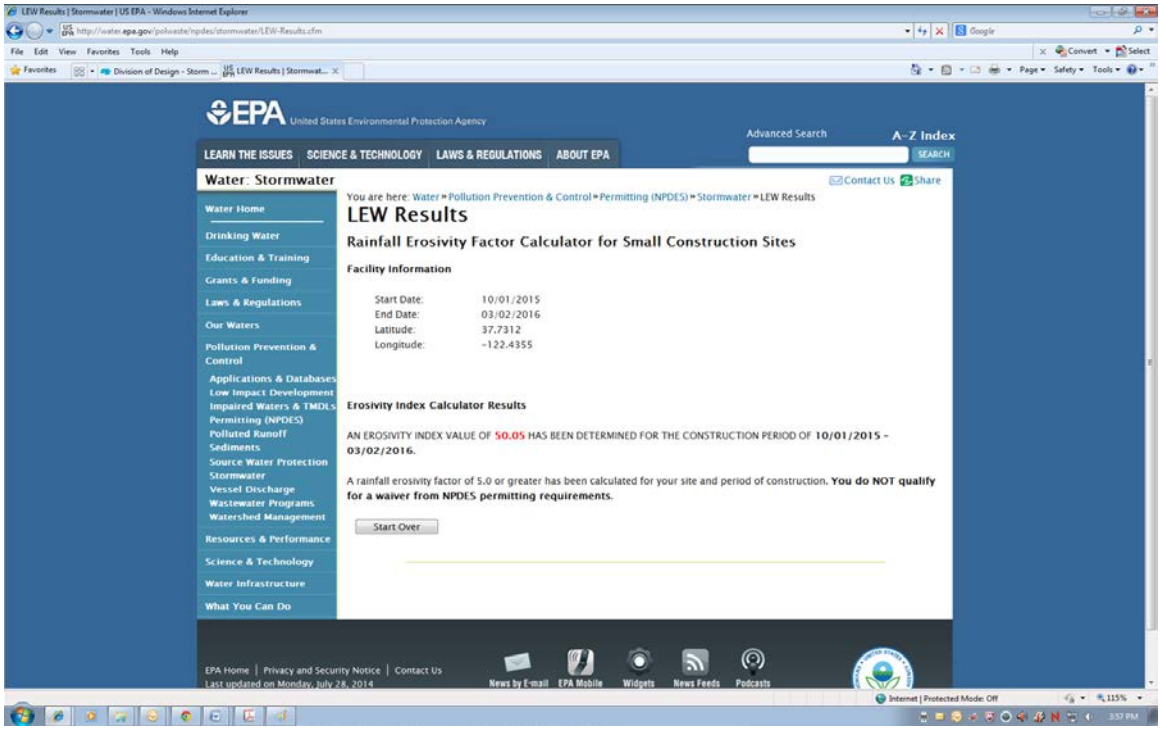


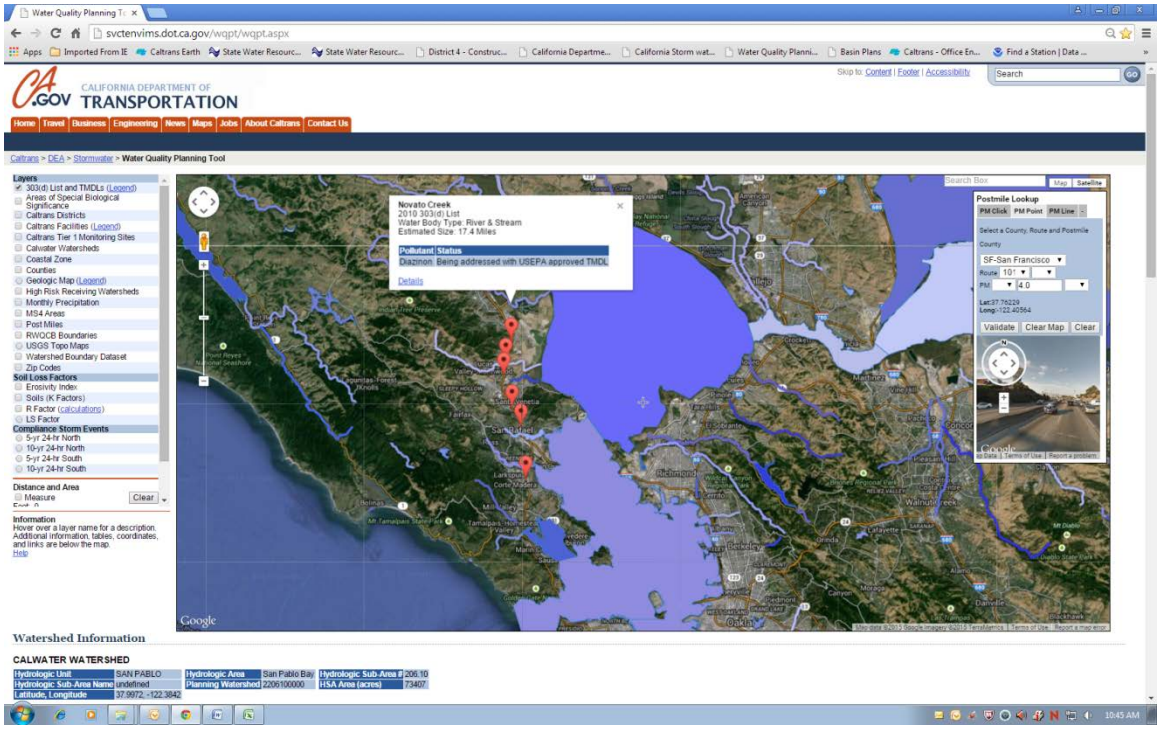
PER EPA.GOV EROSIVITY INDEX VALUE FOR SF 280 LOCATIONS: 50.05

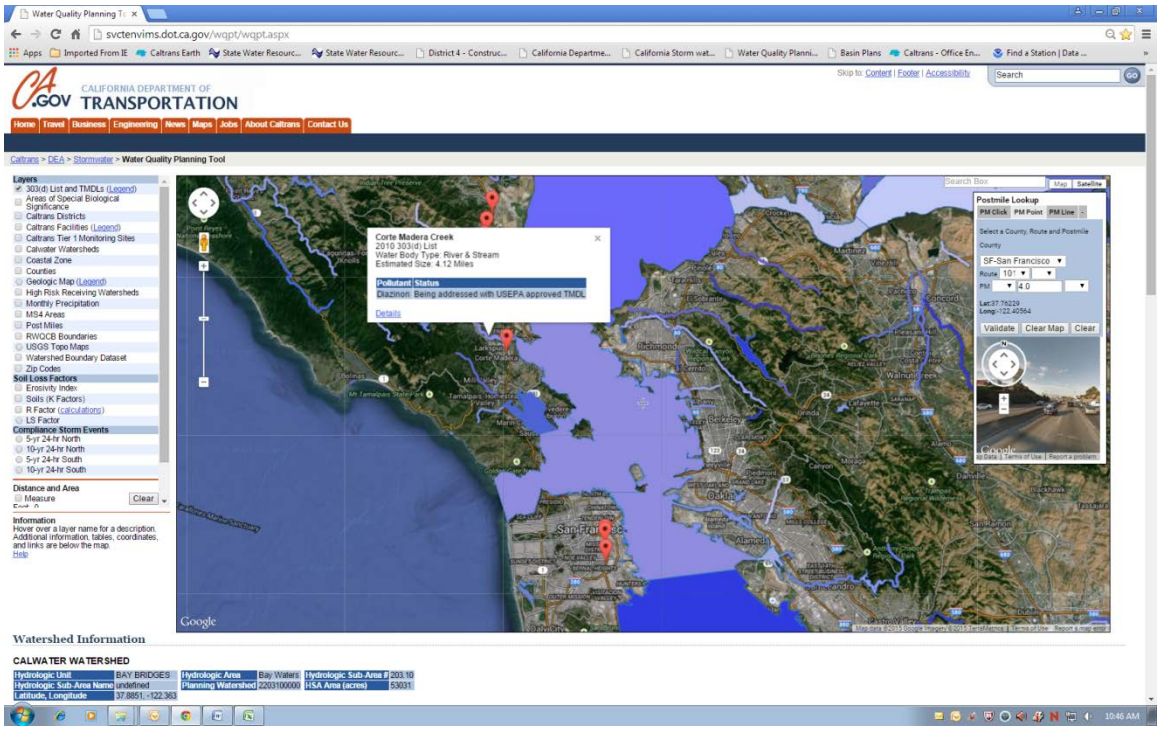


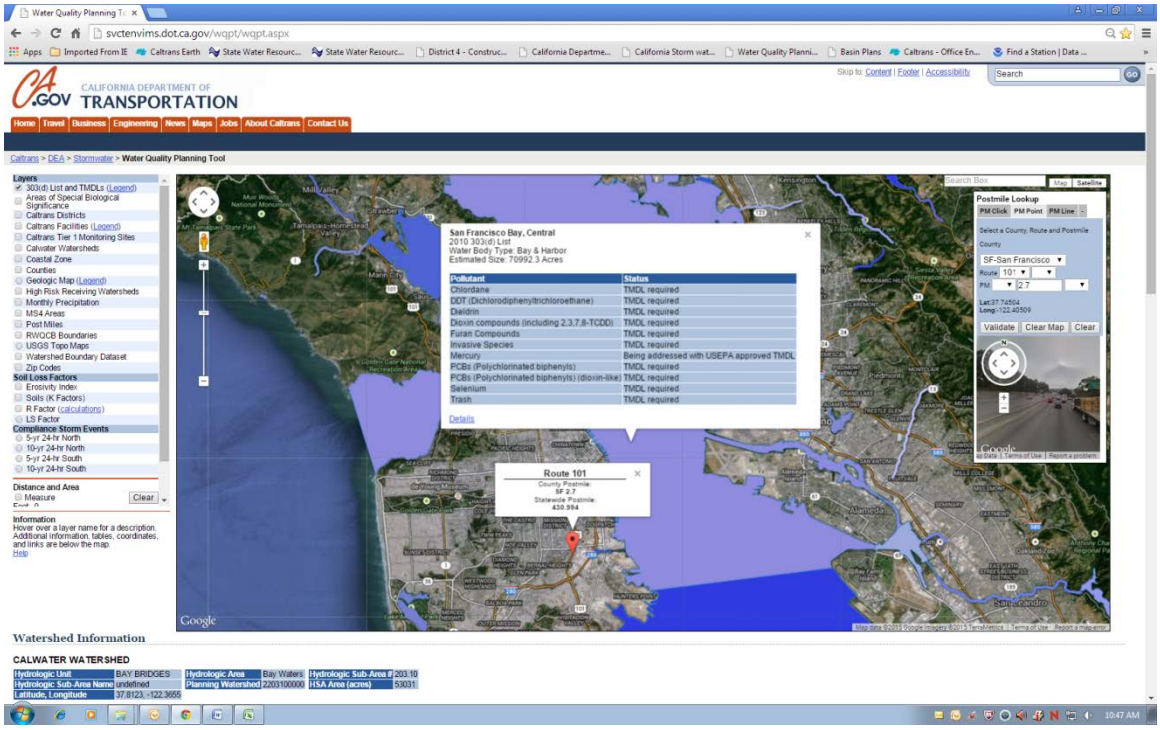
DETERMINE RECEIVING WATER RISK

SEDIMENT RISK

THERE IS NO "SEDIMENT" UNDER POLLUTANT FOR MRM 101 & SF 280 LOCATIONS

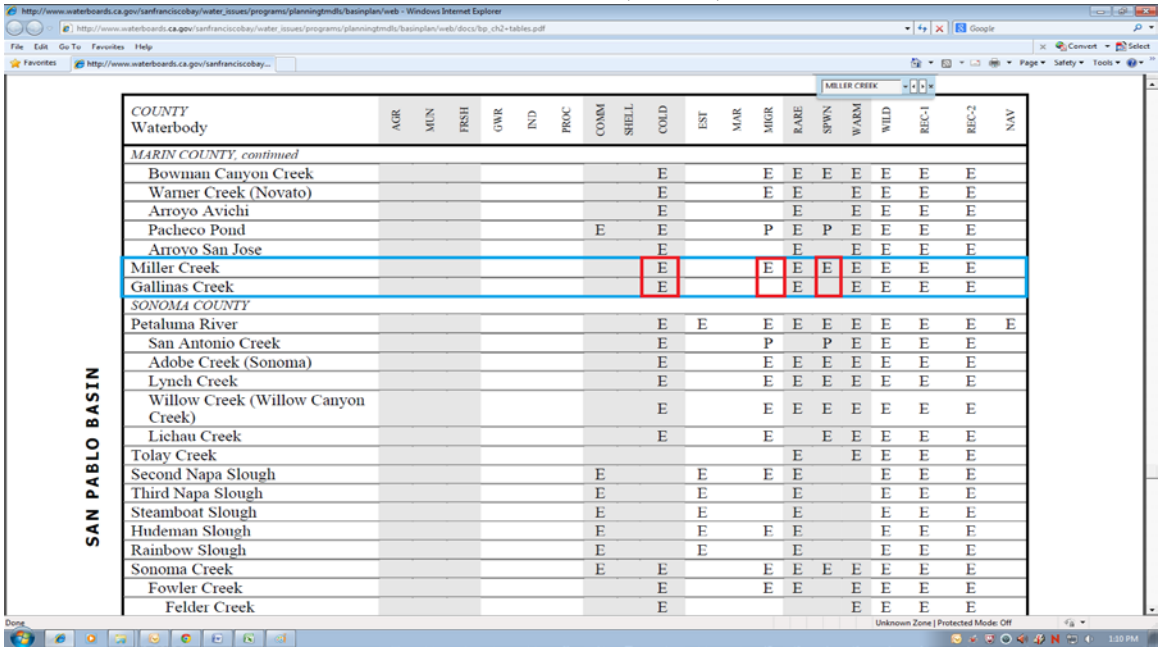




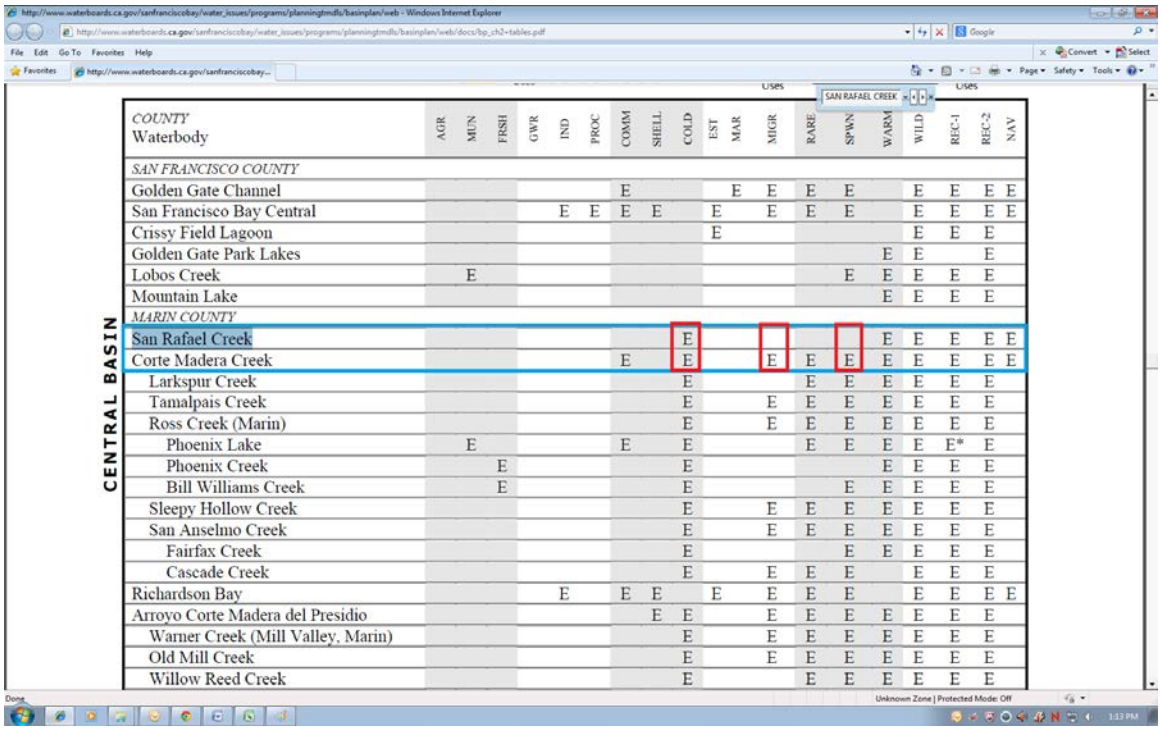


BIOLOGICAL RISK (MUST HAVE ALL THREE CONDITIONS: COLD, MGR, &SPWN)
MRM 101 LOCATIONS:

- MILLER CREEK - COLD, MGR, & SPWN
- GALLINAS CREEK - COLD ONLY
- SAN RAFAEL CREEK - COLD ONLY
- CORTE MADERA CREEK - COLD, MGR, & SPWN



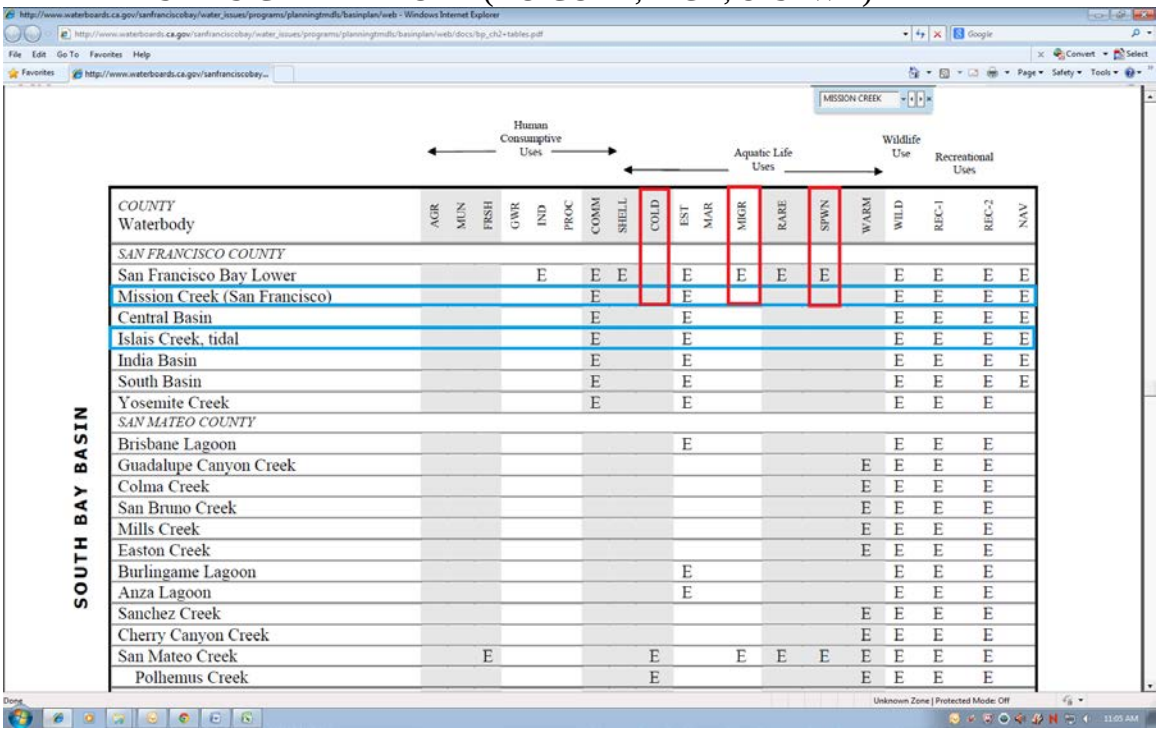
SAN PABLO BASIN COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
MARIN COUNTY, continued																			
Bowman Canyon Creek									E			E	E	E	E	E	E	E	
Warner Creek (Novato)									E			E	E		E	E	E	E	
Arroyo Avichi									E				E		E	E	E	E	
Pacheco Pond							E		E			P	E	P	E	E	E	E	
Arroyo San Jose									E				E		E	E	E	E	
Miller Creek									E			E	E	E	E	E	E	E	
Gallinas Creek									E				E		E	E	E	E	
SONOMA COUNTY																			
Petaluma River									E	E		E	E	E	E	E	E	E	E
San Antonio Creek									E			P		P	E	E	E	E	
Adobe Creek (Sonoma)									E			E	E	E	E	E	E	E	
Lynch Creek									E			E	E	E	E	E	E	E	
Willow Creek (Willow Canyon Creek)									E			E	E	E	E	E	E	E	
Lichau Creek									E			E		E	E	E	E	E	
Tolay Creek													E		E	E	E	E	
Second Napa Slough							E			E		E	E			E	E	E	
Third Napa Slough							E			E			E			E	E	E	
Steamboat Slough							E			E			E			E	E	E	
Hudeman Slough							E			E		E	E			E	E	E	
Rainbow Slough							E			E			E			E	E	E	
Sonoma Creek							E		E			E	E	E	E	E	E	E	
Fowler Creek									E			E	E		E	E	E	E	
Felder Creek									E						E	E	E	E	



CENTRAL BASIN COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SAN FRANCISCO COUNTY																			
Golden Gate Channel							E				E	E	E	E		E	E	E	E
San Francisco Bay Central					E	E	E	E		E		E	E	E		E	E	E	E
Crissy Field Lagoon										E						E	E	E	
Golden Gate Park Lakes															E	E		E	
Lobos Creek		E												E	E	E	E	E	
Mountain Lake															E	E	E	E	
MARIN COUNTY																			
San Rafael Creek									E						E	E	E	E	E
Corte Madera Creek							E		E			E	E	E	E	E	E	E	E
Larkspur Creek									E				E	E	E	E	E	E	
Tamalpais Creek									E			E	E	E	E	E	E	E	
Ross Creek (Marin)									E			E	E	E	E	E	E	E	
Phoenix Lake		E					E		E				E	E	E	E	E*	E	
Phoenix Creek			E						E						E	E	E	E	
Bill Williams Creek			E						E					E	E	E	E	E	
Sleepy Hollow Creek									E			E	E	E	E	E	E	E	
San Anselmo Creek									E			E	E	E	E	E	E	E	
Fairfax Creek									E					E	E	E	E	E	
Cascade Creek									E			E	E	E		E	E	E	
Richardson Bay					E		E	E		E		E	E	E		E	E	E	E
Arroyo Corte Madera del Presidio								E	E			E	E	E	E	E	E	E	
Warner Creek (Mill Valley, Marin)									E			E	E	E	E	E	E	E	
Old Mill Creek									E			E	E	E	E	E	E	E	
Willow Reed Creek									E				E	E	E	E	E	E	

SF 280 LOCATIONS:

- MISSION CREEK - NONE (NO COLD, MGR, & SPWN)
- ISLAIS CREEK - NONE (NO COLD, MGR, & SPWN)

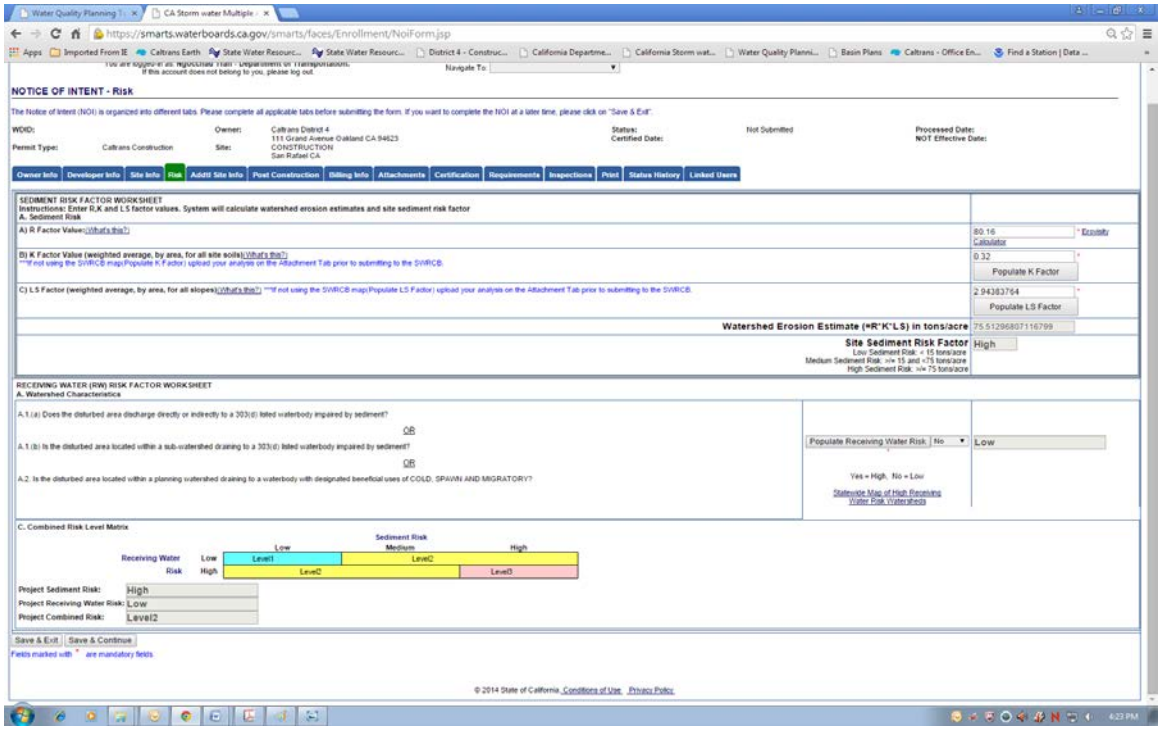


SOUTH BAY BASIN COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SAN FRANCISCO COUNTY																			
San Francisco Bay Lower					E		E	E		E		E	E	E		E	E	E	E
Mission Creek (San Francisco)							E			E						E	E	E	E
Central Basin							E			E						E	E	E	E
Islais Creek, tidal							E			E						E	E	E	E
India Basin							E			E						E	E	E	E
South Basin							E			E						E	E	E	E
Yosemite Creek							E			E						E	E	E	
SAN MATEO COUNTY																			
Brisbane Lagoon										E						E	E	E	
Guadalupe Canyon Creek															E	E	E	E	
Colma Creek															E	E	E	E	
San Bruno Creek															E	E	E	E	
Mills Creek															E	E	E	E	
Easton Creek															E	E	E	E	
Burlingame Lagoon										E						E	E	E	
Anza Lagoon										E						E	E	E	
Sanchez Creek															E	E	E	E	
Cherry Canyon Creek															E	E	E	E	
San Mateo Creek			E					E				E	E	E	E	E	E	E	
Polhemus Creek								E							E	E	E	E	

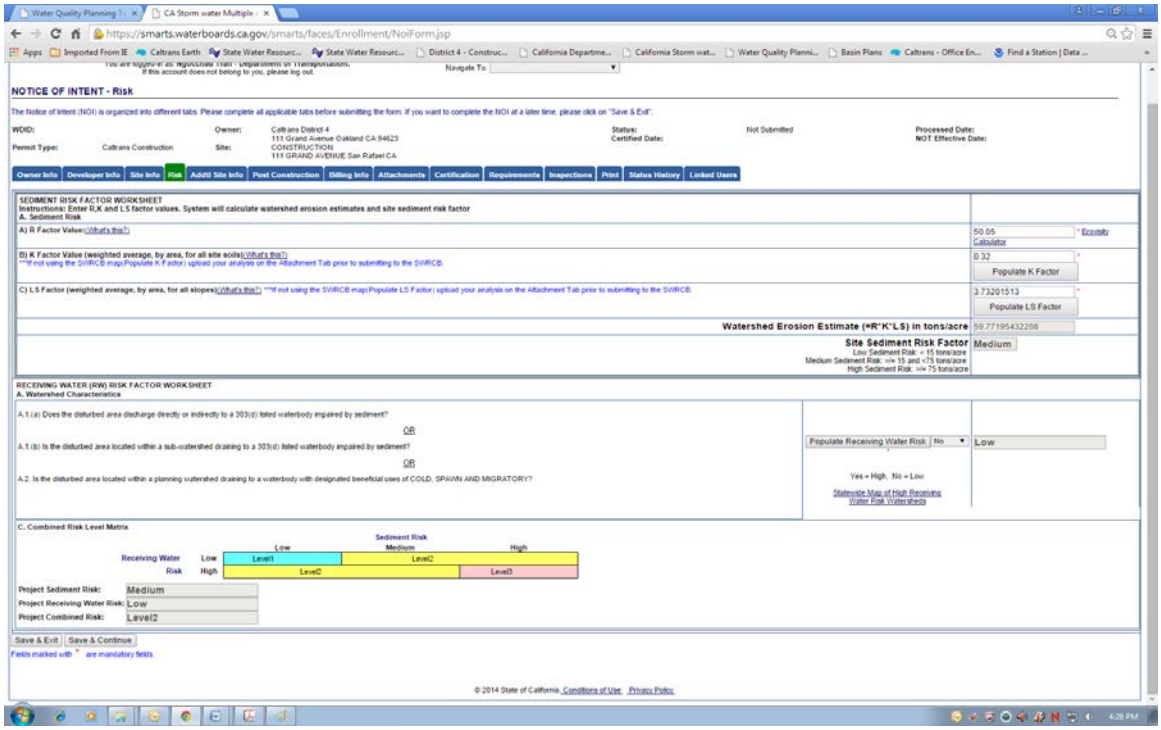
PROJECT RISK LEVEL: 2

The project has low receiving water risk even though the Risk Level map depicts the area as high risk for receiving waters in Marin County because construction work will be done in the mainline; and even though Miller Creek and Corte Madera Creek met all three conditions for COLD, MGR, and SPWN in Marin County on Route 101 but they are not 303(d) listed for sediment risk within the project limit. The following creeks will not be included in the project because Novato Creek is more than 2 miles (11,421 feet), Mission Creek (2,984 feet) and Islais Creek (3,468 feet) are more than half a mile away from the jobsite. The following creeks have Diazinon as pollutant: Miller Creek, Gallinas Creek, San Rafael Creek, Corte Madera Creek, and Mission Creek.

MRM 101 LOCATION:



SF 280 LOCATION:



Marin County - Route 101

Sediment Risk Factor Worksheet	Entry
A) R Factor	
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.	
http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	
R Factor Value	80.16
B) K Factor (weighted average, by area, for all site soils)	
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.	
Site-specific K factor guidance	
K Factor Value	0.32
C) LS Factor (weighted average, by area, for all slopes)	
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.	
LS Table	
LS Factor Value	2.94
Watershed Erosion Estimate (=RxKxLS) in tons/acre	75.414528
Site Sediment Risk Factor	**High**
Low Sediment Risk: < 15 tons/acre	
Medium Sediment Risk: >=15 and <75 tons/acre	
High Sediment Risk: >= 75 tons/acre	

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 visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?:	**no**	**Low**
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		

San Francisco County - Route 280

Sediment Risk Factor Worksheet	Entry
A) R Factor	
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.	
http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	
R Factor Value	50.05
B) K Factor (weighted average, by area, for all site soils)	
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.	
Site-specific K factor guidance	
K Factor Value	0.32
C) LS Factor (weighted average, by area, for all slopes)	
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.	
LS Table	
LS Factor Value	3.73
Watershed Erosion Estimate (=RxKxLS) in tons/acre	59.73968
Site Sediment Risk Factor	**Medium**
Low Sediment Risk: < 15 tons/acre	
Medium Sediment Risk: >=15 and <75 tons/acre	
High Sediment Risk: >= 75 tons/acre	

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 visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?:	**no**	**Low**
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		

ATTACHMENT 4

401 Impact Map

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ATTACHMENT 5
Permit(s)

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PRELIMINARY SITE INVESTIGATION REPORT

US-101 AND I-280 GORE PAVING AND MVP CONSTRUCTION PROJECT SAN FRANCISCO AND MARIN COUNTIES, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
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GEOCON

GEOCON PROJECT NO. E8721-02-16
CALTRANS EA 04-3G7001
CALTRANS PROJECT # 04-1200-0155-1

JANUARY 2015

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PRELIMINARY SITE INVESTIGATION REPORT Page

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(Continued)

REPORT LIMITATIONS

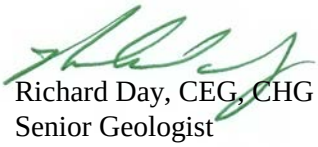
This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 4. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

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

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PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the gore paving and maintenance vehicle pullout (MVP) construction project along United States Highway 101 (US-101) and Interstate 280 (I-280) in Marin and San Francisco Counties, California was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A4336 and Task Order No. 16 (TO-16), EA 04-3G7001.

1.1 Project Description and Proposed Improvements

The project proposes to pave gore points and vegetation-control areas and construct MVPs at various locations along US-101 and I-280 in the cities of Corte Madera, San Rafael, Novato, and San Francisco in Marin and San Francisco Counties, California. Work will take place within Caltrans right-of-way. The project area is depicted on the attached Vicinity Map, Figure 1.

The site investigation was performed in the following areas:

- Southbound (SB) US-101 Offramp and Onramp to Madera Boulevard (borings L1-1 to L1-3) - Figure 2a
- Northbound (NB) US-101 Median at Mission Avenue (borings L2-1 to L2-7) – Figure 2b
- Mission Avenue Onramp to NB US-101 (borings L2-8 to L2-9) – Figure 2b
- NB US-101 Offramp to North San Pedro Road (borings L3-1 to L3-3) – Figure 2c
- North San Pedro Road Onramp to NB US-101 (borings L3-4 and L3-5) – Figure 2c
- NB US-101 Shoulder at Lucas Valley Road (borings L4-1 to L4-3) – Figure 2d
- SB US-101 Shoulder at Lucas Valley Road (borings L4-4 to L4-5) – Figure 2d
- SB US-101 Shoulder at St. Vincent Drive (borings L5-1 to L5-8) – Figure 2e
- NB US-101 Shoulder at St. Vincent Drive (borings L5-9 to L5-14) – Figure 2e
- NB US-101 Shoulder at Nave Drive Overcrossing (borings L6-1 to L6-6) – Figure 2f
- NB US-101 Offramp to Vermont Street (borings L7-1 to L7-3) - Figure 2g
- NB I- 280 Shoulder at US-101 Connector (borings L9-1 to L9-6) - Figure 2h

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

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

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

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

2.4 Naturally Occurring Asbestos

As defined in current California Air Resources Board (CARB) rules, serpentine material refers to any material that contains at least 10% serpentine, and asbestos-containing serpentine refers to serpentine materials with an asbestos content greater than 5% as determined by CARB Test

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

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

The construction/maintenance activities mentioned above could disturb NOA-laden debris and soil, thereby potentially creating an airborne hazard. Mitigation practices can reduce the risk of exposure to airborne NOA containing dust. Dust suppression practices include wetting the materials being disturbed and wearing approved respirators with high-efficiency particulate air (HEPA) filters during construction activities.

3.0 SCOPE OF SERVICES

The scope of services performed under TO-16, EA 04-3G7001 included the following:

3.1 Pre-field Activities

- Prepared the Preliminary Site Investigation Workplan and Health and Safety Plan, dated November 2014.
- Retained the services of D & M Traffic Services to provide traffic control services during field operations.
- Retained the services of Advanced Technology Laboratories, Signal Hill, California (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL, Inc. (EMSL), a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of soil samples.

3.2 Field Activities

The field investigation was performed on November 13, 14, and 18, 2014, by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced 51 soil borings at the project location using hand-auger and direct-push drilling techniques. The borings were advanced to a maximum depth of 10.5 feet.

The following samples were collected:

- 78 for CAM 17 metals analysis
- 56 for TPHd and TPHmo analyses
- 15 samples for TPHg analysis
- 16 samples for pH analysis
- 63 soil samples for NOA analysis

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

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples were collected from the 51 boring locations identified by the Caltrans TO Manager using hand-auger and direct-push drilling techniques. Boring coordinates are presented on Table 1. A Vicinity Map, Figure 1, shows the project location, and borings locations are shown on Figures 2a to 2h.

Soil samples collected using hand auger drilling techniques were placed in new resealable plastic bags or stainless steel tubes. Direct-push drill rig soil samples were collected into new resealable plastic bags or an acetate tube. Sample tubes were sealed with Teflon tape and plastic lids prior to being stored in a chest cooled with ice.

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

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water.

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 and EMSL under standard turnaround-times (TAT) per the Task Order Manager. The laboratory reports and COC documentation are included in Appendix B.

The samples were analyzed as follows:

- 78 samples for CAM 17 metals using EPA Test Methods 6010 ICAP and 7471.
- 25 samples 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.
- 41 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.
- 26 samples with WET lead concentrations equal to or exceeding 5 mg/l (i.e. equal to or exceeding the STLC of 5.0 mg/l) and total lead equal to or exceeding 100 mg/kg were further analyzed for TCLP lead.
- 26 samples with WET lead concentrations equal to or exceeding 5 mg/l (i.e. equal to or exceeding the STLC of 5.0 mg/l) and were further analyzed for DI-WET lead.
- 56 samples for TPHd using EPA Test Method 8015B.
- 56 samples for TPHmo using EPA Test Method 8015B.
- 15 samples for TPHg using EPA Test Method 8015B.
- 16 samples for pH using EPA Test Method 9045C.
- 63 samples for NOA using CARB 435.

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 laboratories, the COC documentation was reviewed for accuracy and completeness.

5.0 INVESTIGATIVE RESULTS

5.1 Subsurface Conditions

Borings were completed using hand-auger drilling techniques in the northern area (Marin County, California) and direct push techniques in the southern area (San Francisco County). Soil in the northern area to a depth of 0.5 feet consisted predominately of dry, unconsolidated silty sand with gravels derived from Franciscan formation weathering. Soil in the southern portion of the site (San Francisco County) consisted of dry, silty sand to a depth of 1.5 feet and compacted silty sand and sandstone to 10.5 feet, also derived from Franciscan formation weathering. Groundwater was not encountered in the borings.

5.2 Laboratory Analytical Results

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

- The following metals were not detected above their respective laboratory reporting limits: beryllium, silver, and thallium.
- Chromium, lead, mercury, and nickel were reported at concentrations equal to or exceeding ten times their respective STLCs.
- Total chromium was reported at concentrations ranging from 14 mg/kg to 1,100 mg/kg.
- WET chromium was reported at concentrations ranging from <1.0 mg/l to 1.6 mg/l.
- Total lead was reported at concentrations ranging from <1.0 mg/kg to 1,000 mg/kg.
- WET lead was reported at concentrations ranging from 1.7 mg/l to 56 mg/l.
- DI-WET lead was reported at concentrations ranging from <1.0 mg/l to 1.4 mg/l.
- TCLP lead was reported at concentrations ranging from <0.050 mg/l to 4.4 mg/l.
- Total mercury was reported at concentrations ranging from <0.10 mg/kg to 5.5 mg/kg.
- WET mercury was not detected at or above the reporting limit of 0.001 mg/l.
- Total nickel was reported at concentrations ranging from 16 mg/kg to 1,200 mg/kg.
- WET nickel was reported at concentrations ranging from 3.0 mg/l to 12 mg/l.
- Remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.
- TPHd was reported at concentrations ranging from 3.2 mg/kg to 1,300 mg/kg.
- TPHmo was reported at concentrations ranging from 6.0 mg/kg to 2,700 mg/kg.
- TPHg was not detected at or above the laboratory reporting limit of 1.0 mg/kg.
- pH ranged from 6.1 to 9.9.
- NOA was reported at concentrations ranging from not detected to 0.50 % chrysotile.

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 surrogate was diluted out for seven samples. The Relative Percent Difference (RPD) value was outside of acceptance criteria for multiple samples; therefore, the calculations were based on raw values. The Matrix Spike (MS) recovery was outside of acceptance limits for several samples, possibly due to matrix interference. The analytical batches were validated by the laboratory control samples.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and WET lead concentrations exists that would allow the prediction of WET lead concentrations based on calculated UCLs.

5.4.1 Calculating the UCLs for the Arithmetic Mean

The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. 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.

Non-parametric bootstrap techniques were used to calculate the UCLs. The bootstrap test results are included in Appendix C. The following table presents the calculated UCLs and statistics for the site:

SB US-101 Offramp and Onramp to Madera Boulevard (borings L1-1 to L1-3)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	419	96	1,000

NC - Not calculated due to insufficient data set

NB US-101 Median at Mission Avenue (borings L2-1 to L2-7)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	65.8	68.7	56	22	79

Mission Avenue Onramp to NB US-101 (borings L2-8 to L2-9)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	83	55	110

NC - Not calculated due to insufficient data set

NB US-101 Offramp to North San Pedro Road (borings L3-1 to L3-3)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	41	15	80

NC - Not calculated due to insufficient data set

North San Pedro Road Onramp to NB US-101 (borings L3-4 and L3-5)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	93	69	130

NC - Not calculated due to insufficient data set

NB US-101 Shoulder at Lucas Valley Road (borings L4-1 to L4-3)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	93	39	140

NC - Not calculated due to insufficient data set

SB US-101 Shoulder at Lucas Valley Road (borings L4-4 to L4-5)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	58	35	81

NC - Not calculated due to insufficient data set

SB US-101 Shoulder at St. Vincent Drive (borings L5-1 to L5-8)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	344	372	248	56	720

NB US-101 Shoulder at St. Vincent Drive (borings L5-9 to L5-14)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	224	243	158	12	400

NB US-101 Shoulder at Nave Drive Overcrossing (borings L6-1 to L6-6)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	400	425	305	130	620

NB US-101 Offramp to Vermont Street (borings L7-1 to L7-3)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	NC	NC	253	130	430
1 to 1.5	NC	NC	188	33	300

NC - Not calculated due to insufficient data set

NB I-280 Shoulder at US-101 Connector (borings L9-1 to L9-6)

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	107	120	66	4.8	240
1 to 1.5	14.1	15.5	10.2	1.3	22
3 to 3.5	4.15	4.61	2.6	0.5	9.1
5 to 5.5	3.61	4.02	2.23	0.5	8.0
10 to 10.5	2.17	2.40	1.43	0.5	4.5

5.4.2 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 95% UCL total lead concentrations presented in the table 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 the 41 (*x*, *y*) data points (i.e., soil samples analyzed for both total lead [*x*] and WET lead [*y*]) from the site. The resulting *coefficient of determination* (r^2) equaled 0.8331, which yields a corresponding *correlation coefficient* (*r*) of 0.913.

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 $y = 0.0776(x)$, 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 total lead UCLs 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 Table 6.

6.0 CONCLUSIONS

6.1 Lead in Soil

6.1.1 SB US-101 Offramp and Onramp to Madera Boulevard (borings L1-1 to L1-3)

The maximum total lead concentration is equal to the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.2 NB US-101 Median at Mission Avenue (borings L2-1 to L2-7)

Soil samples from this location reported a maximum total lead concentration of less than the TTLC of 1,000 mg/kg and a maximum WET lead concentration less than the STLC of 5 mg/l. Accordingly, soil excavated to a depth of 0.5 foot would be classified as non-hazardous based on lead content.

6.1.3 Mission Avenue Onramp to NB US-101 (borings L2-8 to L2-9)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.4 NB US-101 Offramp to North San Pedro Road (borings L3-1 to L3-3)

Soil samples from this location reported a maximum total lead concentration of less than the TTLC of 1,000 mg/kg and a maximum WET lead concentration less than the STLC of 5 mg/l. Accordingly, soil excavated to a depth of 0.5 foot would be classified as non-hazardous based on lead content.

6.1.5 North San Pedro Road Onramp to NB US-101 (borings L3-4 and L3-5)

Soil samples from this location reported a maximum total lead concentration of less than the TTLC of 1,000 mg/kg and a maximum WET lead concentration less than the STLC of 5 mg/l. Accordingly, soil excavated to a depth of 0.5 foot would be classified as non-hazardous based on lead content.

6.1.6 NB US-101 Shoulder at Lucas Valley Road (borings L4-1 to L4-3)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.7 SB US-101 Shoulder at Lucas Valley Road (borings L4-4 to L4-5)

Soil samples from this location reported a maximum total lead concentration of less than the TTLC of 1,000 mg/kg and a maximum WET lead concentration less than the STLC of 5 mg/l. Accordingly, soil excavated to a depth of 0.5 foot would be classified as non-hazardous based on lead content.

6.1.8 SB US-101 Shoulder at St. Vincent Drive (borings L5-1 to L5-8)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.9 NB US-101 Shoulder at St. Vincent Drive (borings L5-9 to L5-14)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.10 NB US-101 Shoulder at Nave Drive Overcrossing (borings L6-1 to L6-6)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.11 NB US-101 Offramp to Vermont Street (borings L7-1 to L7-3)

The maximum total lead concentration is less than the TTLC of 1,000 mg/kg. The maximum WET lead concentration is greater than the lead STLC of 5 mg/l. Soil excavated to a depth of 0.5 foot would therefore be classified as a California hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 0.5 foot may be reused in accordance with the DTSC Variance (as Caltrans Type Y-1). Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste.

6.1.12 NB 280 Shoulder at US-101 Connector (borings L9-1 to L9-6)

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs and predicted WET lead concentrations for data collected from the site. Weighted averages are calculated by using the 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 6.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1 ft	107	**8.3**	120	**Hazardous**
Underlying soil (1 to 10.5 ft)	*5.9*	*0.5*	*6.5*	*Non-hazardous*
0 to 3 ft	45	3.5	50	Non-hazardous
Underlying soil (3 to 10.5 ft)	5.9	0.5	6.5	*Non-hazardous*
0 to 5 ft	29	2.2	32	Non-hazardous
Underlying soil (5 to 10.5 ft)	3.5	0.3	3.9	*Non-hazardous*
0 to 10 ft	16	1.3	18	Non-hazardous
Underlying soil (10 to 10.5 ft)	2.2	0.2	2.4	*Non-hazardous*
0 to 10.5 ft	16	1.3	18	Non-hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated to a depth of 1.0 foot would be classified as California hazardous waste. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Based on the reported DI-WET and pH results, soil excavated from may be reused (as Caltrans Type Y-1) within Caltrans right-of-way in accordance with the DTSC Variance.

Alternately, if soil is excavated to a depth of 3.0 feet or greater and managed as a whole, then excavated soil would be classified as non-hazardous based on lead results. Underlying soil would be non-hazardous based on lead results.

6.2 Remaining CAM 17 Metals in Soil

With the exceptions of chromium, mercury, and nickel, remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.

WET chromium was reported at a concentrations ranging from <1.0 mg/l to 1.4 mg/l, below the STLC. WET mercury was not detected at or above the reporting limit of 0.001 mg/l. WET nickel was reported at concentrations ranging from 3.0 mg/l to 12 mg/l, below the STLC. Therefore, soil would not be classified as hazardous based on soluble chromium, mercury, or nickel concentrations. Remaining metals were reported at concentrations below ten times their respective STLCs.

The CAM 17 metals concentrations in site soil were compared to ESLs. Arsenic, chromium, cobalt, lead, and nickel were reported at concentrations greater than one or more ESL values. Because concentrations of arsenic, chromium, cobalt, lead, and nickel exceeded one or more ESL, non-parametric bootstrap techniques were used to calculate the UCLs. The bootstrap test result is included in Appendix E. ESLs, UCLs, and published background concentrations for arsenic, chromium, cobalt, lead, and nickel are summarized in the table below:

Metal	Maximum	95% UCL	Shallow Soil Residential ESL	Shallow Soil Commercial/ Industrial ESL	Worker Direct Exposure ESL	Published Background Mean[1]	Published Background Range[1]
Arsenic	11	3.76	0.39	1.6	10	3.5	0.6 to 11.0
Chromium	1,100	103	1,000	2,500	460,000*	122	23 to 1,579
Cobalt	71	16	23	80	49	14.9	2.7 to 46.9
Lead	1,000	149	80	320	320	23.9	12.4 to 97.1
Nickel	1,200	133	150	150	6,100	57	9 to 509

Concentrations reported in mg/kg
[1] Kearney Foundation of Soil Science, March 1996
*Value listed is for Chromium III, as there is no construction exposure standard for total chromium.

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 chromium concentration is below the residential and commercial land use ESLs, the construction exposure ESL, and within the published background range.

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

The 95% UCL lead concentration is above the residential land use ESL and the published background range, but below the commercial land use ESL, and the construction exposure ESL.

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

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

Metals results for soil samples are summarized in Table 3.

6.3 Organic Compounds in Soil

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

TPHd was reported at concentrations ranging from 3.2 mg/kg to 1,300 mg/kg. Thirty-three sample results met or exceeded the residential land use ESL of 100 mg/kg and the commercial/industrial land use ESL of 110 mg/kg. One sample (L4-5-0) result exceeded the construction/direct exposure ESL of 900 mg/kg. TPHd has a 95% UCL concentration of 257 mg/kg.

TPHmo was reported at concentrations ranging from 6.0 mg/kg to 2,700 mg/kg. Forty-one sample results exceeded the residential land use ESL of 100 mg/kg and thirty-two sample results exceeded the commercial/industrial land use ESL of 500 mg/kg. All results were below the construction/direct exposure ESL of 28,000 mg/kg. TPHmo has a 95% UCL concentration of 935 mg/kg.

Based on the reported TPHd and TPHmo concentrations exceeding the residential and commercial/industrial land use ESLs, reuse or disposal of excavated soil may be restricted based on TPHd and TPHmo content depending on proposed use.

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

6.4 Naturally Occurring Asbestos

Sixty-three soil samples were collected from the site and analyzed for asbestos by CARB Test Method 435 using polarized light microscopy (PLM) and at a target sensitivity of 0.25% asbestos. Four samples were reported to contain trace (<0.25% chrysotile) asbestos. One sample was reported to contain 0.25% chrysotile asbestos, and one sample was reported to contain <0.50% chrysotile asbestos. Asbestos was not observed in the remaining samples.

ATCM 93105 sets forth measures to be followed for the investigation and control of naturally occurring asbestos for construction sites. ATCM 93105 allows for the mathematical averaging of analytical results from a soil mass in order to determine the average asbestos content. Convention is to use one-half of the reporting or detection limit as the assumed contaminant content for soils when averaging results. Thus for averaging purposes, the 57 samples reported as non-detect as well as the trace quantity results and the 0.25% chrysotile asbestos result were assumed to contain 0.125% asbestos. The resulting average of the 63 samples collected from the site is 0.127%, below the 0.25% regulatory threshold.

Construction/maintenance activities involving potentially asbestos-containing materials may fall under regulatory jurisdiction of the California Division of the Occupational Safety and Health Administration (Cal-OSHA) under CCR Title 8 Section 5208. Mitigation measures during construction/maintenance activities should be utilized to minimize potential releases of NOA to air (dust control) and surface waters (stormwater discharge).

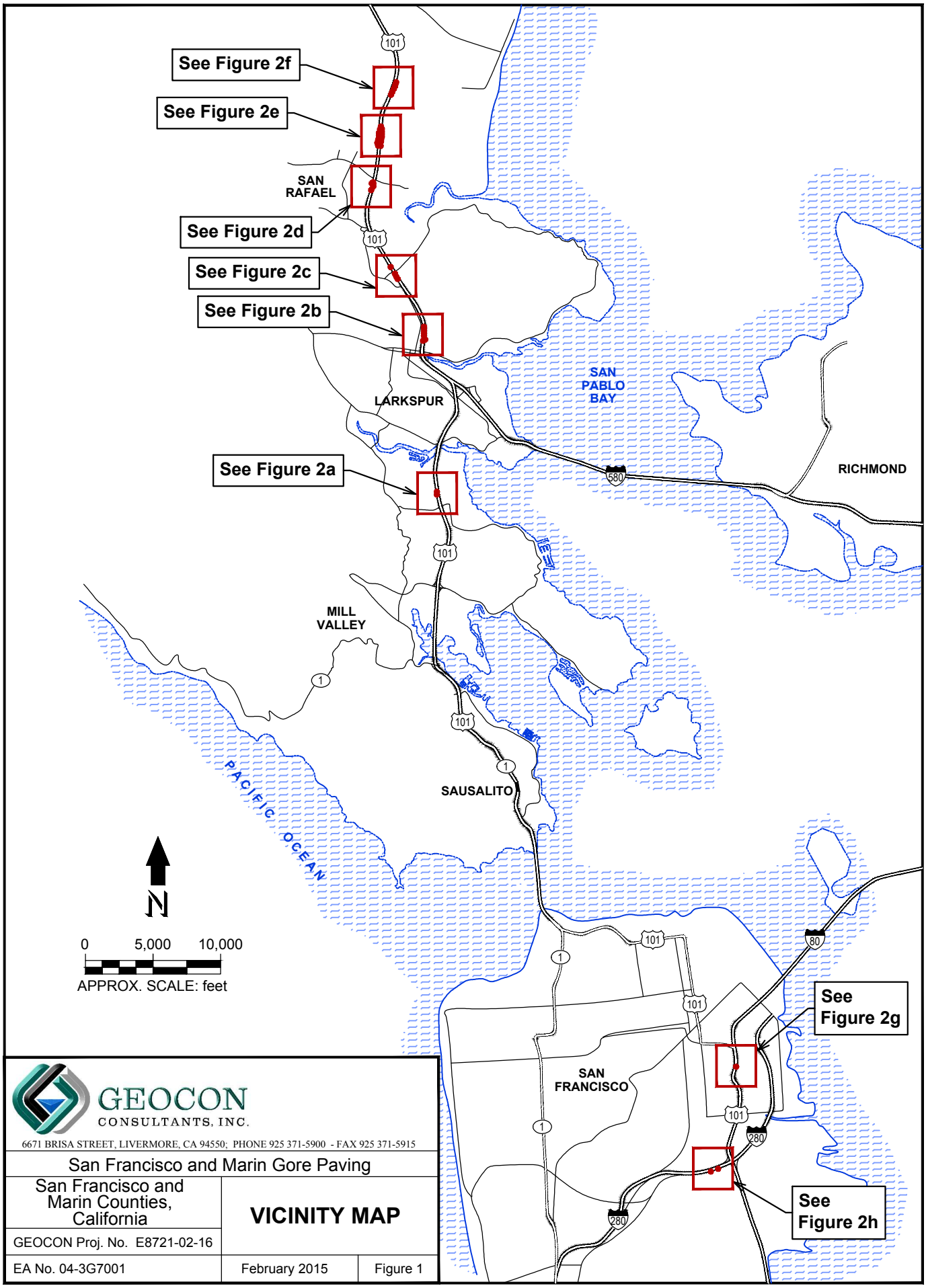
Currently, regulatory exposure limits and health hazard data are not available for NOA in soils. Federal regulations governing asbestos define it as the asbestiform variety of the amphibole minerals actinolite, amosite, anthophyllite, crocidolite, and tremolite, and the asbestiform variety of serpentine, chrysotile. Asbestos fibers occurring in industrial materials are considered by the National Institute for Occupational Safety and Health as potential occupational carcinogens. Prudence is recommended, therefore, in dealing with soils potentially containing NOA. Engineering controls, such as wet methods for dust suppression, should be utilized to minimize aerial dispersion of NOA fibers in planned work areas during excavation and construction activities. Under Title 8 Section 5208 of the CCR, disturbance of asbestos-containing materials requires wet working methods and possible respiratory protection and air monitoring. The CARB has established protocols outlined in Title 17, Section 93105 for the implementation of worker health, safety and monitoring plans for excavation, grading and transport of NOA-containing soils. The excavation contractor should consult Title 17, Section 93105 and contact Cal-OSHA to establish the appropriate regulatory protocol and actions necessary for excavation and/or disturbance of asbestos-containing soils.

Additionally, it is Caltrans policy that the contractor(s) prepare a project-specific Asbestos Compliance Plan (CCR Title 8, Section 1529, the "Asbestos in Construction" standard) on projects where personnel may be in contact with materials known to contain NOA and that wet methods be employed to minimize the potential for airborne asbestos and potential worker exposure to asbestos-containing materials. 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 asbestos-containing soil.

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, hydrocarbons, and asbestos 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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San Francisco and Marin Gore Paving

San Francisco and Marin Counties, California

VICINITY MAP

GEOCON Proj. No. E8721-02-16

EA No. 04-3G7001 | February 2015 | Figure 1

SITE1214

LEGEND:

Boring Location

N

0 50 100

SCALE: feet

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SITE MAP

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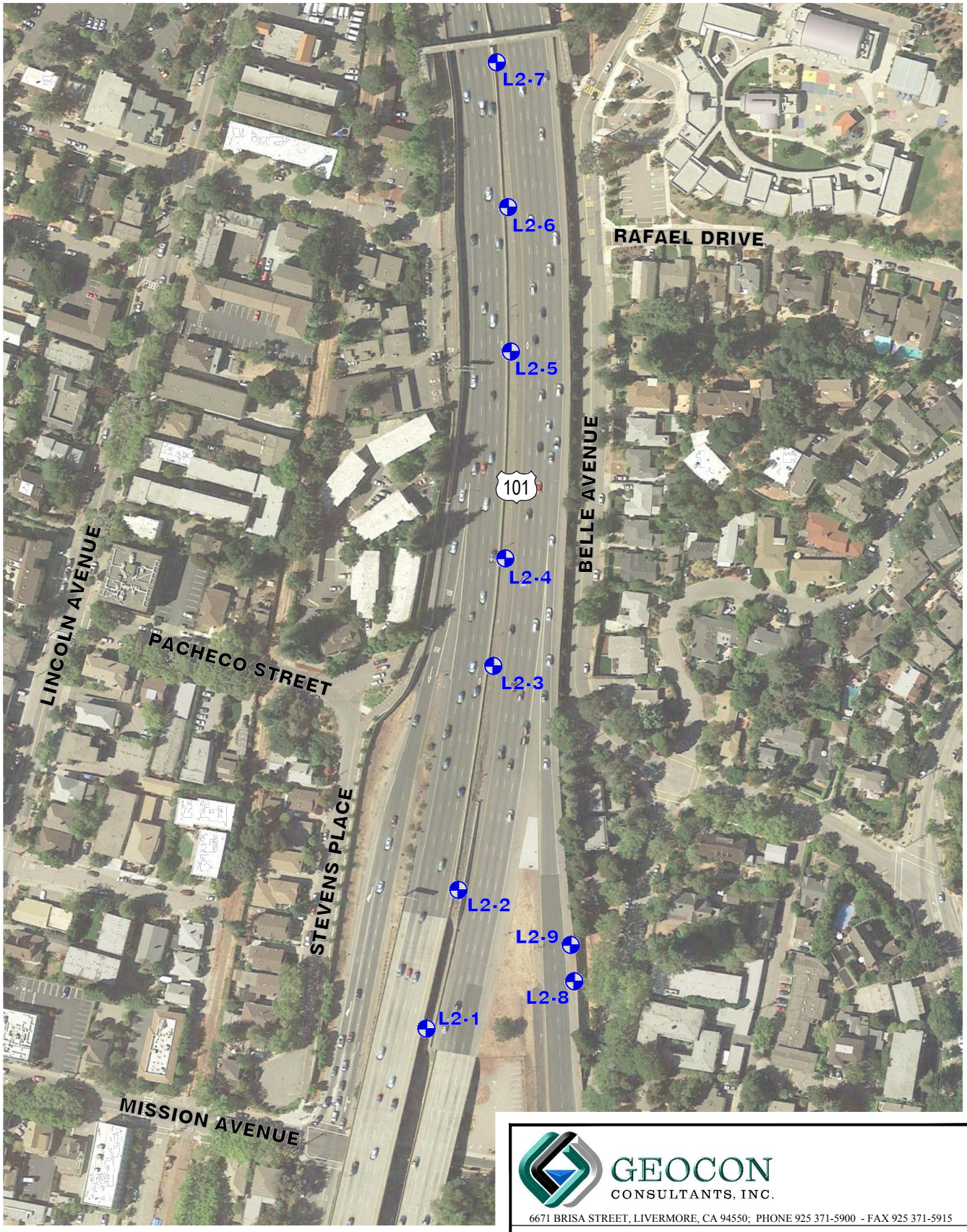
EA No. 04-3G7001 | February 2015 | Figure 2a

SITE1214



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SCALE: feet

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SITE1214

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Boring Location

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SCALE: feet

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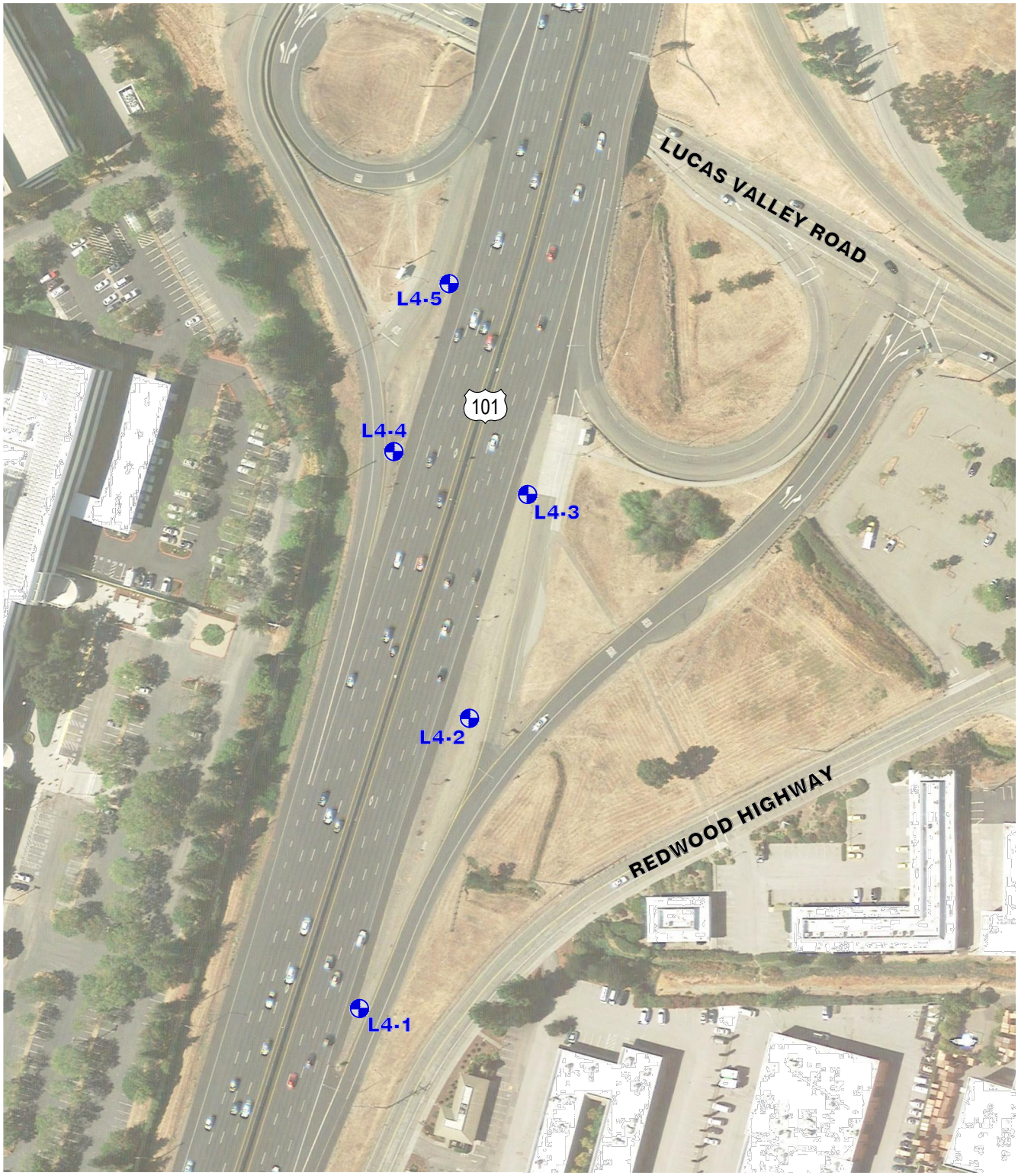
SITE1214



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SCALE: feet

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SITE MAP

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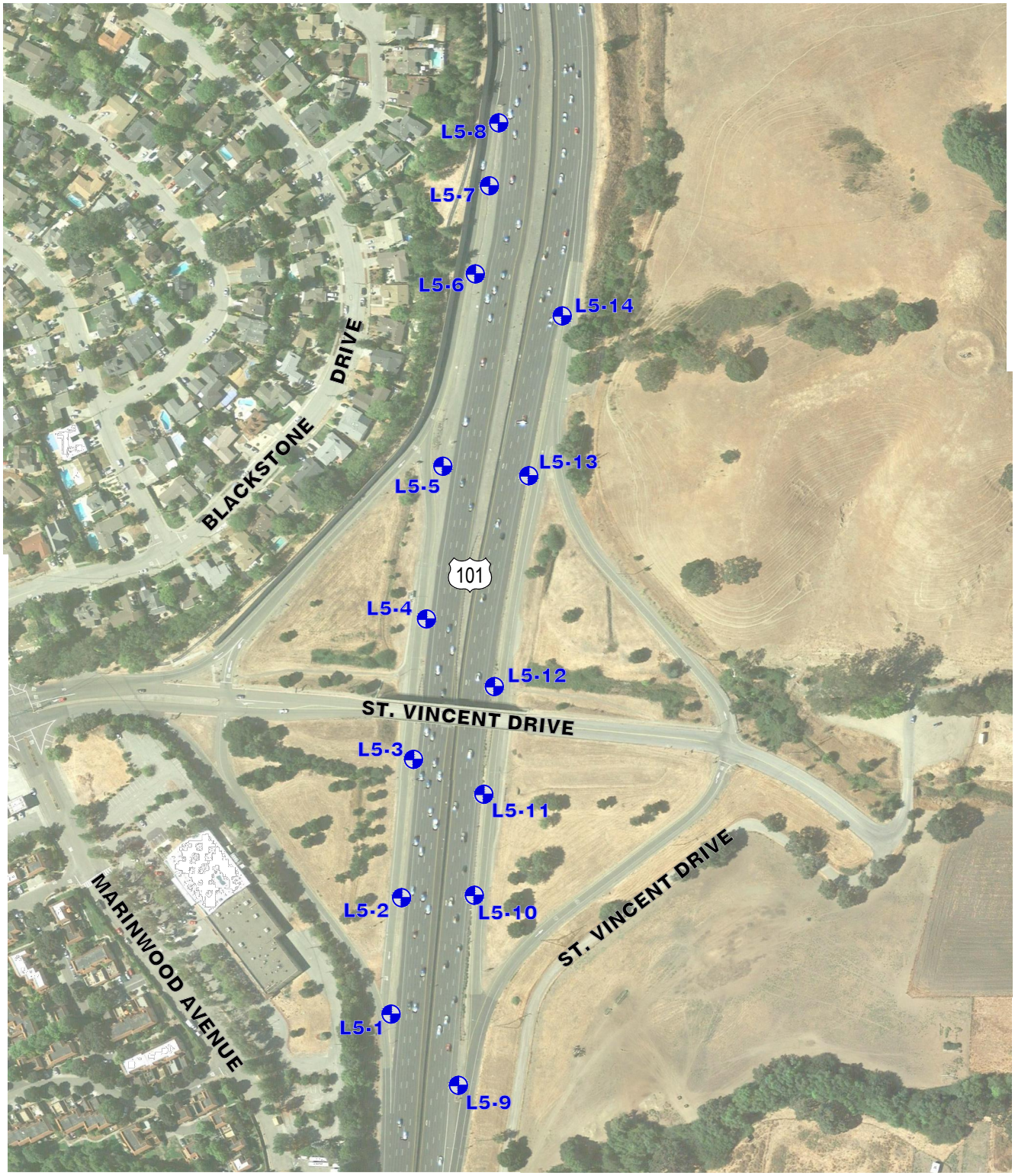
SITE1214



LEGEND:

Boring Location

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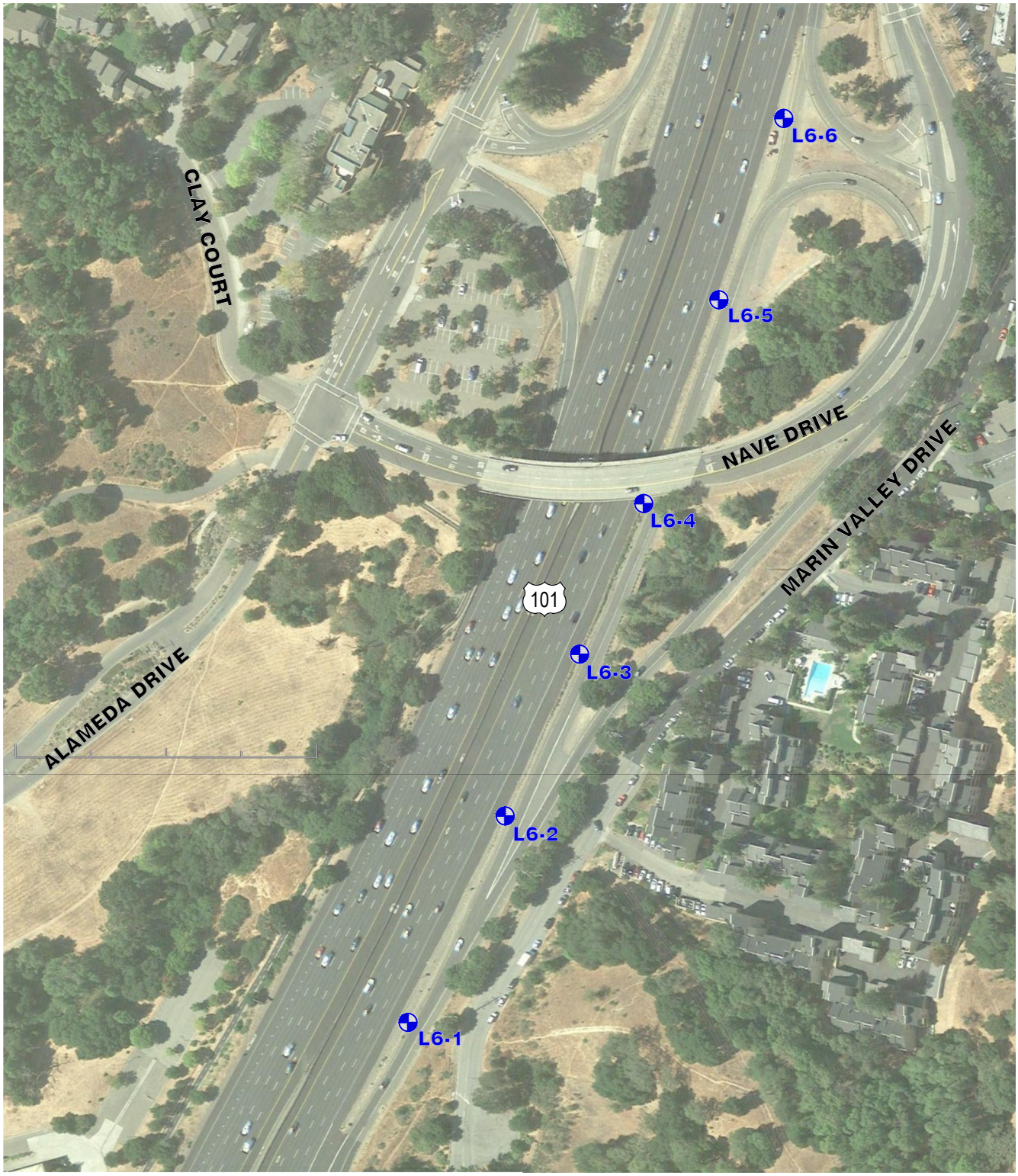
SITE1214



LEGEND:

Boring Location

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SCALE: feet

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SITE1214

LEGEND:

Boring Location

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SCALE: feet

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SITE1214

LEGEND:

Boring Location

N

0 80 160

SCALE: feet

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BACWA
BAY AREA
CLEAN WATER
AGENCIES

Bay Area Recycled Water
Commercial Truck Fill Facilities Location Guide
January 2015

WHITLEY BURCHETT *& Associates*

Background

This Guide was prepared by Whitley Burchett & Associates under contract with Bay Area Clean Water Agencies and under the direction of the BACWA Recycled Water Committee. The Guide was prepared in response to inquiries of commercial recycled water truck fill facilities in the Bay Area. It is the Recycled Water Committee's intention to update this Guide annually. If you see any information that should be updated, have a facility to add to this Guide, or have any questions please email Info@bacwa.org.

Disclaimer

The intent of this Guide is to provide prospective water haulers with general information regarding the location of Bay Area Recycled Water Commercial Truck Fill Facilities, permit requirements, and associated fees for recycled water. Information in this Guide represents data collected in the fall of 2014. Please contact agencies directly for current information.

Cover Photos

Top row from left to right: San Francisco Public Utilities Commission, Dublin San Ramon Services District

Bottom row: East Bay Municipal Utility District

Acknowledgements

This Guide was prepared in conjunction with the BACWA agencies. The time spent by agencies providing program information and review of this document is greatly appreciated.

Electronic Version

The BACWA Truck Fill Guide is available on the BACWA website at http://bacwa.org.

TABLE OF CONTENTS

Bay Area Commercial Recycled Water Truck Fill Facilities Location Map

* Indicates the general location of a truck fill facility.

List of Agencies with Recycled Water Commercial Truck Fill Facilities Sorted by County/City

SECTION 1

Recycled Water Commercial Truck Fill Facilities Information

CITY OF CALISTOGA

707.942.2782

www.ci.calistoga.ca.us

Recycled Water Fill Facilities:			
Treatment Plant	Yes	Distribution System	No
Can water be used outside of this agency's service area?			No

Hydrant Fill Facilities

Location:	None		
Number of Fill Facilities:		Connection Device:	
Quality:		Truck Size Limits:	
Quantity Limitations per Trip:		Truck Weight Limits:	
Other Restrictions:			
Additional Access Information:			

Fill Facilities at Treatment Plant

Location:	Dunaweal Wastewater Treatment Plant (call for address)		
Quality:	Disinfected Tertiary	Type of Connection:	Side
Quantity Limitations per Trip:	No Minimum	Hours:	Mon-Fri 7 a.m. - 3:30 p.m.
	Maximum up to truck limit	Appointment Required:	No
Quantity Limitations per Day:	No Minimum	Truck Size Limits:	None
	Maximum 50,000 gal	Truck Weight Limits:	None
Additional Access Information:			

Training

Required:	No	Duration:	
Who:		Frequency:	
Schedule:		Location:	
Length of time to become authorized truck hauler:			1 business day

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	No	Inspection Location:	
Duration:		Re-inspection Required:	
How to schedule:			

Fees

Water:	No Charge	Training:	No Charge
Connection Device:	No Charge	Permit:	No Charge
Vehicle Signage:	No Charge	Use Area Signage:	N/A
Other:			

CENTRAL CONTRA COSTA SANITARY DISTRICT

925.228.9500

www.centralsan.org

Recycled Water Fill Facilities:

Treatment Plant: No

Distribution System: Yes

Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: Locations in Concord (Willow Way) and Martinez (Marsh Drive)

Number of Fill Facilities: 3

Connection Device: Hydrant key and Construction meter

Quality: Disinfected Tertiary

Truck Size Limits: Max. truck length 18 ft.

Quantity Limitations per Trip: No Minimum
Maximum 6,000 gal

Truck Weight Limits: No limit

Other Restrictions:

Additional Access Information: Fill times: Mon.-Fri. 7 a.m. - 5 p.m. (can be negotiated)

Fill Facilities at Treatment Plant

Location: None

Quality:

Type of Connection:

Quantity Limitations per Trip:

Hours:

Appointment Required:

Quantity Limitations per Day:

Truck Size Limits:

Truck Weight Limits:

Additional Access Information:

Training

Required: Yes

Duration: 15 minutes

Who: Either Truck Owner, Truck Driver, or Customer using water

Frequency: Only Once

Schedule: By Appointment

Location: Recycled Water Treatment Plant

Length of time to become authorized truck hauler: 1 business day

Signage

Area Use Signage Required: No

Vehicle Signage Required: Yes

Signs Provided by Water Agency: N/A

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: No

Inspection Location:

Duration:

Re-inspection Required:

How to schedule:

Fees

Water: $3.28 per 1,000 gal

Training: No Charge

Connection Device: $750 (refundable deposit)

Permit: No Charge

Vehicle Signage: No Charge

Use Area Signage: N/A

Other:

DUBLIN SAN RAMON SERVICES DISTRICT

925.875.2334

www.dsrsd.com

Recycled Water Fill Facilities:			
Treatment Plant	Yes	Distribution System	Yes
Can water be used outside of this agency's service area?	Yes		

Hydrant Fill Facilities

Location:	Dublin, CA - see website for locations		
Number of Fill Facilities:	10+	Connection Device:	Construction Meter
Quality:	Disinfected Tertiary	Truck Size Limits:	None
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Truck Weight Limits:	None
Other Restrictions:	Permit plus $1,000 refundable deposit for meter required.		
Additional Access Information:	Obtain permit and meter at 7051 Dublin Blvd, Dublin.		

Fill Facilities at Treatment Plant

Location:	DSRSD Wastewater Treatment Plant 7399 Johnson Drive, Pleasanton		
Quality:	Disinfected Tertiary	Type of Connection:	Overhead and Large Hose Bib
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Hours: Appointment Required:	24 hrs/day, 7 days/wk* No
Quantity Limitations per Day:	No Minimum No Maximum	Truck Size Limits: Truck Weight Limits:	None None
Additional Access Information:	*After business hours truck drivers must use special gate access code to enter the plant. The access code is valid only during hours specified in the permit.		

Training

Required:	Yes	Duration:	15 min
Who:	Truck Owner and Driver	Frequency:	Once
Schedule:	By Appointment	Location:	Recycled Water Plant
Length of time to become authorized truck hauler:	1 business day		

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	No	Inspection Location:	
Duration:		Re-inspection Required:	
How to schedule:			

Fees

Water:	Hydrant- check with DSRSD for current fee; Plant- $10/truck load	Training:	No Charge
		Permit:	Hydrant- No permit fee; Treatment Plant- $73/year
Connection Device:	Hydrant access- $1,000 deposit for construction meter; Treatment Plant- No connection device charge	Use Area Signage:	N/A
Vehicle Signage:	No Charge		
Other:			

EAST BAY MUNICIPAL UTILITY DISTRICT

510.287.1346

www.ebmud.com

Recycled Water Fill Facilities:

Treatment Plant	Yes	Distribution System	No
Can water be used outside of this agency's service area?			Check with EBMUD

Hydrant Fill Facilities

Location:	None		
Number of Fill Facilities:		Connection Device:	
Quality:		Truck Size Limits:	
Quantity Limitations per Trip:		Truck Weight Limits:	
Other Restrictions:			
Additional Access Information:	www.ebmud.com, search "Recycled Water Truck Program"		

Fill Facilities at Treatment Plant

Locations:	1) EBMUD Wastewater Treatment Plant, Oakland 2) North Richmond Water Recycling Plant, Richmond		
Quality:	Disinfected Tertiary	Type of Connection:	Hydrant
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Hours:	24 hrs/day, 7 days/wk
		Appointment Required:	Only for first visit
Quantity Limitations per Day:	No Minimum No Maximum	Truck Size Limits:	None
		Truck Weight Limits:	None
Additional Access Information:	1) EBMUD Wastewater Treatment Plant - enter through the main security gate at the plant to obtain access to the fill hydrant. 2) North Richmond Plant - hydrant is located outside of the plant gate and is accessible with a hydrant key.		

Training

Required:	Yes	Duration:	15 minutes
Who:	Truck Driver	Frequency:	Once
Schedule:	By Appointment	Location:	Recycled Water Plant
Length of time to become authorized truck hauler:			5 business days

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	Yes	Inspection Location:	Recycled Water Plant
Duration:	Less than 1 hour	Re-inspection Required:	No
How to schedule:	To be conducted at time of training		

Fees

Water:	No Charge	Training:	No Charge
Connection Device:	No Charge	Permit:	No Charge
Vehicle Signage:	No Charge	Use Area Signage:	N/A
Other:			

CITY OF LIVERMORE

925.960.8138

Recycled Water Fill Facilities:

Treatment Plant: No

Distribution System: Yes

Can water be used outside of this agency's service area? No

Hydrant Fill Facilities

Location: Call for address

Number of Fill Facilities: 10+

Connection Device: Construction meter and Hydrant Key

Quality: Disinfected Tertiary

Truck Size Limits: No limit

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Truck Weight Limits: No limit

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location: None

Quality:

Type of Connection:

Quantity Limitations per Trip:

Hours:

Appointment Required:

Quantity Limitations per Day:

Truck Size Limits:

Truck Weight Limits:

Additional Access Information:

Training

Required: Yes

Duration: 2 hours or less

Who: Truck Driver

Frequency: Once

Schedule: At time of hydrant meter deposit

Location: Administration Building

Length of time to become authorized truck hauler: 1 business day

Signage

Area Use Signage Required: Yes

Vehicle Signage Required: Yes

Signs Provided by Water Agency: Yes

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: No

Inspection Location:

Duration:

Re-inspection Required:

How to schedule:

Fees

Water: $2.37 per CCF

Training: No Charge

Connection Device: $1,000

Permit: No Charge

Vehicle Signage: Varies

Use Area Signage: No Charge

Other: Monthly service charge of $195.30

MARIN MUNICIPAL WATER DISTRICT

415.945.1557

Recycled Water Fill Facilities:

Treatment Plant: No

Distribution System: Yes

Can water be used outside of this agency's service area? No

Hydrant Fill Facilities

Location: Call for location

Number of Fill Facilities: 1

Connection Device: Hose Bib

Quality: Disinfected Tertiary

Truck Size Limits: No limit

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Truck Weight Limits: No limit

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location: None

Quality:

Type of Connection:

Quantity Limitations per Trip:

Hours:

Appointment Required:

Quantity Limitations per Day:

Truck Size Limits:

Truck Weight Limits:

Additional Access Information:

Training

Required: Yes

Duration: 2 hours or less

Who: Truck Driver

Frequency: Once

Schedule: By Appointment

Location: Administration Building or Hydrant Fill Facility

Length of time to become authorized truck hauler: 6 business days

Signage

Area Use Signage Required: Yes

Vehicle Signage Required: Yes

Signs Provided by Water Agency: Yes

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: Yes

Inspection Location: Administration Building

Duration: 1 hour or less

Re-inspection Required: Annually

How to schedule: Appointment

Fees

Water: Tier 1: 0-100 CCF @ $2.57 per CCF;
Tier 2: 101-150 CCF @ $7.48 per CCF
Tier 3: over 150 CCF @ $14.97 per CCF

Training: No Charge

Connection Device: No Charge

Permit: No Charge

Vehicle Signage: No Charge

Use Area Signage: No Charge

Other:

CITY OF MILPITAS

408.586.3355

www.ci.milpitas.ca.gov

Recycled Water Fill Facilities:			
Treatment Plant	No	Distribution System	Yes
Can water be used outside of this agency's service area?			Yes

Hydrant Fill Facilities

Location:	Call for locations		
Number of Fill Facilities:	5	Connection Device:	Hydrant key and Construction meter
Quality:	Disinfected Tertiary	Truck Size Limits:	check with City
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Truck Weight Limits:	check with City
Other Restrictions:	M-F: 7 a.m. to 7 p.m.		
Additional Access Information:	Secure access. Gate key to be provided at training.		

Fill Facilities at Treatment Plant

Location:	None		
Quality:		Type of Connection:	
Quantity Limitations per Trip:		Hours:	
		Appointment Required:	
Quantity Limitations per Day:		Truck Size Limits:	
		Truck Weight Limits:	
Additional Access Information:			

Training

Required:	Yes	Duration:	1 hour
Who:	Truck Owner, Truck Driver, and Customer	Frequency:	Once
Schedule:	By Appointment and Semi-Annually	Location:	Administration Building or Hydrant fill facility
Length of time to become authorized truck hauler:			2 business days

Signage

Area Use Signage Required:	Yes	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	No	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	Yes	Inspection Location:	Administration Building or Hydrant fill facility
Duration:	1 hour or less		
How to schedule:	Appointment	Re-inspection Required:	Annually

Fees

Water:	$2.65 per HCF	Training:	No Charge
Connection Device:	$2,000	Permit:	No Charge
Vehicle Signage:	No charge	Use Area Signage:	No charge
Other:	Monthly fee of $75		

NAPA SANITATION DISTRICT

707.258.6029

www.napasan.com

Recycled Water Fill Facilities:

Treatment Plant: Yes

Distribution System: No

Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None

Number of Fill Facilities:

Quality:

Quantity Limitations per Trip:

Other Restrictions:

Additional Access Information:

Connection Device:

Truck Size Limits:

Truck Weight Limits:

Fill Facilities at Treatment Plant

Location: Soscol Water Recycling Facility (call for address)

Quality: Disinfected Tertiary

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Quantity Limitations per Day: No Minimum
No Maximum

Additional Access Information:

Type of Connection: Side

Hours: 7:30 a.m. - 4:30 p.m. Daily

Appointment Required: No

Truck Size Limits: None

Truck Weight Limits: None

Training

Required: Yes

Who: Truck Owner, Truck Driver, and Customer

Schedule: By Appointment

Duration: 2 hours or less

Frequency: Once, plus Annual Refresher

Location: Recycled Water Plant

Length of time to become authorized truck hauler: 2 business days

Signage

Area Use Signage Required: Yes

Signs Provided by Water Agency: Yes

Vehicle Signage Required: Yes

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: Yes

Duration: 15 min

How to schedule: By Appointment

Inspection Location: Recycled Water Plant

Re-inspection Required:

Fees

Water: $0.98 per 1,000 gal

Connection Device: No Charge

Vehicle Signage: $6 per sticker and $10.50 per plastic sign

Other:

Training: No Charge

Permit: $50

Use Area Signage: $6 per sticker and $10.50 per plastic sign

NORTH MARIN WATER DISTRICT

415.761.8912

www.nmwd.com

Recycled Water Fill Facilities:			
Treatment Plant	No	Distribution System	Yes
Can water be used outside of this agency's service area?			No

Hydrant Fill Facilities

Location:	Call for address		
Number of Fill Facilities:	10+	Connection Device:	Hydrant key
Quality:	Disinfected Tertiary	Truck Size Limits:	No limit
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Truck Weight Limits:	No limit
Other Restrictions:			
Additional Access Information:			

Fill Facilities at Treatment Plant

Location:	None		
Quality:		Type of Connection:	
Quantity Limitations per Trip:		Hours:	
		Appointment Required:	
Quantity Limitations per Day:		Truck Size Limits:	
		Truck Weight Limits:	
Additional Access Information:			

Training

Required:	No	Duration:	
Who:		Frequency:	
Schedule:		Location:	
Length of time to become authorized truck hauler:			1 business day

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	No	Inspection Location:	
Duration:		Re-inspection Required:	
How to schedule:			

Fees

Water:	$5.00 per load; no max.	Training:	N/A
Connection Device:	No Charge	Permit:	No Charge
Vehicle Signage:	No Charge	Use Area Signage:	N/A
Other:			

ORO LOMA

510.276.4700

Recycled Water Fill Facilities:

Treatment Plant: Yes

Distribution System: No

Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None

Number of Fill Facilities:

Connection Device:

Quality:

Truck Size Limits:

Quantity Limitations per Trip:

Truck Weight Limits:

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location: Oro Loma Treatment Facility (call for address)

Quality: Disinfected Secondary-2.2

Type of Connection: Overhead

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Hours: M-F: 6 a.m. - 5 p.m.

Appointment Required: No

Quantity Limitations per Day: No Minimum
No Maximum

Truck Size Limits: None

Truck Weight Limits: None

Additional Access Information:

Training

Required: Yes

Duration: 15 min

Who: Truck Driver

Frequency: Once

Schedule: By Appointment

Location: Recycled Water Plant

Length of time to become authorized truck hauler: 1 business day

Signage

Area Use Signage Required: No

Vehicle Signage Required: No

Signs Provided by Water Agency: N/A

Signs Provided by Water Agency: N/A

Vehicle Inspection

Required: No

Inspection Location:

Duration:

Re-inspection Required:

How to schedule:

Fees

Water: No Charge

Training: No Charge

Connection Device: No Charge

Permit: No Charge

Vehicle Signage: N/A

Use Area Signage: N/A

Other:

CITY OF PALO ALTO

650.329.2598

Recycled Water Fill Facilities:

Treatment Plant: Yes
Distribution System: No
Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None
Number of Fill Facilities:
Quality:
Quantity Limitations per Trip:
Other Restrictions:
Additional Access Information:
Connection Device:
Truck Size Limits:
Truck Weight Limits:

Fill Facilities at Treatment Plant

Location: Palo Alto Regional Water Quality Control Plant (call for address)
Quality: Disinfected Tertiary
Quantity Limitations per Trip: No Minimum
Maximum up to truck limit
Quantity Limitations per Day: No Minimum
No Maximum
Additional Access Information:
Type of Connection: Overhead and Side
Hours: Mon-Fri 6:30 a.m. - 5 p.m.
Appointment Required: No
Truck Size Limits: None
Truck Weight Limits: None

Training

Required: Yes
Who: Truck Driver
Schedule: By Appointment
Length of time to become authorized truck hauler: 1 business day
Duration: 2 hours or less
Frequency: Once
Location: Recycled Water Plant

Signage

Area Use Signage Required: Yes
Signs Provided by Water Agency: No
Vehicle Signage Required: Yes
Signs Provided by Water Agency: No

Vehicle Inspection

Required: No
Duration:
How to schedule:
Inspection Location:
Re-inspection Required:

Fees

Water: No Charge
Connection Device: No Charge
Vehicle Signage: User provides
Other:
Training: No Charge
Permit: $50 per year
Use Area Signage: User provides

CITY OF PETALUMA

707.776.3726

Recycled Water Fill Facilities:

Treatment Plant: Yes

Distribution System: No

Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None

Number of Fill Facilities:

Connection Device:

Quality:

Truck Size Limits:

Quantity Limitations per Trip:

Truck Weight Limits:

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location: Ellis Creek Water Recycling Facility (call for address)

Quality: Disinfected Tertiary

Type of Connection: Overhead

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Hours: Mon-Fri 7 a.m. - 4:30 p.m.

Appointment Required: No

Quantity Limitations per Day: No Minimum
No Maximum

Truck Size Limits: None

Truck Weight Limits: None

Additional Access Information:

Training

Required: Yes

Duration: 2 hours or less

Who: Truck Driver and
Customer using water

Frequency: Once

Location: Recycled Water Plant

Schedule: By Appointment

Additional Permit Requirement: City inspects all recycled water use sites, and performs cross connection checks. City issues permit to recycled water user. Recycled water user must contact City to initiate water hauling. Time to issue permit varies.

Length of time to become authorized truck hauler: Varies. Contact City.

Signage

Area Use Signage Required: Yes

Vehicle Signage Required: Yes

Signs Provided by Water Agency: Yes

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: No

Inspection Location:

Duration:

Re-inspection Required:

How to schedule:

Fees

Water: $1.88 per HCF

Training: No Charge

Connection Device: No Charge

Permit: No Charge

Vehicle Signage: No Charge

Use Area Signage: No Charge

Other:

CITY OF REDWOOD CITY

650.780.7470

Recycled Water Fill Facilities:

Treatment Plant: No

Distribution System: Yes

Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: Call for address

Number of Fill Facilities: 4

Connection Device: Construction Meter

Quality: Disinfected Tertiary

Truck Size Limits: No limit

Quantity Limitations per Trip: No Minimum
Maximum up to truck limit

Truck Weight Limits: No limit

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location:

Quality:

Type of Connection:

Quantity Limitations per Trip:

Hours:

Appointment Required:

Quantity Limitations per Day:

Truck Size Limits:

Truck Weight Limits:

Additional Access Information:

Training

Required: Yes

Duration: 2 hours or less

Who: Truck Owner, Truck Driver, and Customer using water

Frequency: Once

Location: Administration Building

Schedule: By Appointment

Length of time to become authorized truck hauler: 5 business days

Signage

Area Use Signage Required: Yes

Vehicle Signage Required: Yes

Signs Provided by Water Agency: Yes

Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: No

Inspection Location:

Duration:

Re-inspection Required:

How to schedule:

Fees

Water: Contact City

Training: Contact City

Connection Device: Contact City

Permit: Contact City

Vehicle Signage: No Charge

Use Area Signage: No Charge

Other:

SAN FRANCISCO INTERNATIONAL AIRPORT

650.821.8380

Recycled Water Fill Facilities:			
Treatment Plant	Yes	Distribution System	No
		Can water be used outside of this agency's service area?	No

Hydrant Fill Facilities

Location:	None		
Number of Fill Facilities:		Connection Device:	
Quality:		Truck Size Limits:	
Quantity Limitations per Trip:		Truck Weight Limits:	
Other Restrictions:			
Additional Access Information:			

Fill Facilities at Treatment Plant

Location:	Mel Leong Treatment Plant		
Quality:	Disinfected Secondary-23	Type of Connection:	Hydrant
Quantity Limitations per Trip:	No Minimum	Hours:	24 hrs/day, 7 days/wk
	Maximum up to truck limit	Appointment Required:	No
Quantity Limitations per Day:	No Minimum	Truck Size Limits:	None
	No Maximum	Truck Weight Limits:	None
Additional Access Information:			

Training

Required:	Yes	Duration:	2 hours or less
Who:	Truck Driver	Frequency:	Once
Schedule:	By Appointment	Location:	Treatment Plant
		Length of time to become authorized truck hauler:	5 business days

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	Yes	Inspection Location:	Recycled Water Plant
Duration:	1 hour or less	Re-inspection Required:	One random audit per year
How to schedule:	Appointment		

Fees

Water:	No Charge	Training:	No Charge
Connection Device:	No Charge	Permit:	No Charge
Vehicle Signage:	No Charge	Use Area Signage:	N/A
Other:			

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

415.695.7378

Recycled Water Fill Facilities:

Treatment Plant: Yes
Distribution System: No
Can water be used outside of this agency's service area? No

Hydrant Fill Facilities

Location: None
Number of Fill Facilities:
Connection Device:
Quality:
Truck Size Limits:
Quantity Limitations per Trip:
Truck Weight Limits:
Other Restrictions:
Additional Access Information:

Fill Facilities at Treatment Plant

Location: South East Treatment Plant
750 Phelps Street, San Francisco
Quality: Disinfected Secondary-23
Type of Connection: Overhead and Side
Quantity Limitations per Trip: No Minimum
Hours: 24 hrs/day, 7 days/week
Maximum up to truck limit
Appointment Required:
Quantity Limitations per Day: No Minimum
Truck Size Limits: None
No Maximum
Truck Weight Limits: None
Additional Access Information: Access code and PIN provided at permit issuance

Training

Required: Yes
Duration: 2 hours or less
Who: Truck Driver
Frequency: Once
Schedule: By Appointment
Location: Treatment Plant
Length of time to become authorized truck hauler: 3 business days

Signage

Area Use Signage Required: Yes
Vehicle Signage Required: Yes
Signs Provided by Water Agency: No
Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: Yes
Inspection Location: Truck Fill Facility
Duration: 1 hour or less
Re-inspection Required: Not required
How to schedule: Appointment

Fees

Water: No Charge
Training: No Charge
Connection Device: No Charge
Permit: No Charge
Vehicle Signage: No Charge
Use Area Signage: No Charge
Other:

CITY OF SANTA ROSA

707.543.3938

Recycled Water Fill Facilities:

Treatment Plant: Yes
Distribution System: No
Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None
Number of Fill Facilities:
Connection Device:
Quality:
Truck Size Limits:
Quantity Limitations per Trip:
Truck Weight Limits:
Other Restrictions:
Additional Access Information:

Fill Facilities at Treatment Plant

Location: Santa Rosa Subregional Water Reuse Plant
Quality: Disinfected Tertiary
Type of Connection: Hydrant
Quantity Limitations per Trip: No Minimum
Maximum up to truck limit
Hours: Mon-Fri 8 a.m. - 5:30 p.m.
Appointment Required: No
Quantity Limitations per Day: No Minimum
No Maximum
Truck Size Limits: None
Truck Weight Limits: None
Additional Access Information:

Training

Required: No
Duration:
Who:
Frequency:
Schedule:
Location:
Length of time to become authorized truck hauler: 1 business day

Signage

Area Use Signage Required: No
Vehicle Signage Required: Yes
Signs Provided by Water Agency: N/A
Signs Provided by Water Agency: No

Vehicle Inspection

Required: No
Inspection Location:
Duration:
Re-inspection Required:
How to schedule:

Fees

Water: $5.09 per 1,000 gal
Training: No Charge
Connection Device: No Charge
Permit: $15.00 per year
Vehicle Signage: N/A
Use Area Signage: No Charge
Other:

SONOMA COUNTY WATER AGENCY

707.521.1865

www.scwa.ca.gov

Recycled Water Fill Facilities:			
Treatment Plant	Yes	Distribution System	No
Can water be used outside of this agency's service area?			Yes

Hydrant Fill Facilities

Location:	None		
Number of Fill Facilities:		Connection Device:	
Quality:		Truck Size Limits:	
Quantity Limitations per Trip:		Truck Weight Limits:	
Other Restrictions:			
Additional Access Information:			

Fill Facilities at Treatment Plant

Locations:	Sonoma Valley County Sanitation District (call for address)		
Quality:	Disinfected Tertiary	Type of Connection:	Side
Quantity Limitations per Trip:	No Minimum Maximum up to truck limit	Hours:	Mon-Fri 8 a.m. - 4 p.m.; with permission could be 24/7
Quantity Limitations per Day:	No Minimum No Maximum	Appointment Required:	No
		Truck Size Limits:	None
		Truck Weight Limits:	None
Additional Access Information:	Contact treatment plant for site access outside of business hours		

Training

Required:	Yes	Duration:	2 hours or less
Who:	Truck Driver	Frequency:	With each new application
Schedule:	By Appointment	Location:	Recycled Water Plant
Length of time to become authorized truck hauler:			5 business days

Signage

Area Use Signage Required:	No	Vehicle Signage Required:	Yes
Signs Provided by Water Agency:	N/A	Signs Provided by Water Agency:	Yes

Vehicle Inspection

Required:	Yes	Inspection Location:	Recycled Water Plant
Duration:	1 hour or less	Re-inspection Required:	With each new application
How to schedule:	Appointment		

Fees

Water:	$5.00 per 1,000 gal	Training:	No Charge
Connection Device:	$100 deposit	Permit:	$300
Vehicle Signage:	First set free	Use Area Signage:	N/A
Other:			

SOUTH BAY WATER RECYCLING

408.277.3671

Recycled Water Fill Facilities:

Treatment Plant: Yes
Distribution System: Yes
Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: Call for location
Number of Fill Facilities: 10+
Connection Device: Hydrant Key and Construction Meter
Quality: Disinfected Tertiary
Truck Size Limits: TBD during inspection
Quantity Limitations per Trip: No Minimum
Maximum up to truck limit
Truck Weight Limits: TBD during inspection
Other Restrictions:
Additional Access Information: Secured access. Gate access code or gate key to be provided at training.

Fill Facilities at Treatment Plant

Location: San Jose/Santa Clara Regional Wastewater Facility
700 Los Esteros Rd., San Jose
Quality: Disinfected Tertiary
Type of Connection: Hydrant
Quantity Limitations per Trip: No Minimum
Maximum up to truck limit
Hours: Mon-Fri 7 a.m. - 4 p.m.
Appointment Required: No
Quantity Limitations per Day: No Minimum
No Maximum
Truck Size Limits: None
Truck Weight Limits: None
Additional Access Information:

Training

Required: Yes
Duration: 2 hours or less
Who: Truck Owner, Truck Driver, and Customer using water
Frequency: Annually
Location: At Water Retailer Office
Schedule: By Appointment
Length of time to become authorized truck hauler: 1 business day

Signage

Area Use Signage Required: Yes
Vehicle Signage Required: Yes
Signs Provided by Water Agency: Yes
Signs Provided by Water Agency: Yes

Vehicle Inspection

Required: Yes
Inspection Location: Corp Yard
Duration: 1 hour or less
Re-inspection Required: Annually
How to schedule: Appointment

Fees

Water: Contact City
Training: Contact City
Connection Device: Contact City
Permit: Contact City
Vehicle Signage: Contact City
Use Area Signage: Contact City
Other:

CITY OF SUNNYVALE

408.760.7560

Recycled Water Fill Facilities:

Treatment Plant: Yes
Distribution System: No
Can water be used outside of this agency's service area? Yes

Hydrant Fill Facilities

Location: None
Number of Fill Facilities:
Connection Device:
Quality:
Truck Size Limits:
Quantity Limitations per Trip:
Truck Weight Limits:
Other Restrictions:
Additional Access Information:

Fill Facilities at Treatment Plant

Location: Sunnyvale Water Pollution Control Plant (call for address)
Quality: Disinfected Tertiary
Type of Connection: Hydrant
Quantity Limitations per Trip: No Minimum
Maximum up to truck limit
Hours: Mon-Fri 7 a.m. - 4 p.m.
Appointment Required: No
Quantity Limitations per Day: No Minimum
No Maximum
Truck Size Limits: None
Truck Weight Limits: None
Additional Access Information:

Training

Required: Yes
Duration: 2 hours or less
Who: Truck Owner, Truck Driver, and Customer using water
Frequency: Annually
Schedule: By Appointment
Location: Agency Corp Yard
Length of time to become authorized truck hauler: 8+ business days

Signage

Area Use Signage Required: Yes
Vehicle Signage Required: Yes
Signs Provided by Water Agency: No
Signs Provided by Water Agency: No

Vehicle Inspection

Required: Yes
Inspection Location: Corp Yard
Duration: 1 hour or less
Re-inspection Required: Annually
How to schedule: Appointment

Fees

Water: No Charge
Training: No Charge
Connection Device: No Charge
Permit: No Charge
Vehicle Signage: User provides
Use Area Signage: User provides
Other:

TOWN OF YOUNTVILLE

707.944.2988

townofyounvtille.com

Recycled Water Fill Facilities:

Treatment Plant: Yes

Distribution System: No

Can water be used outside of this agency's service area? No, not without authorization

Hydrant Fill Facilities

Location: None

Number of Fill Facilities: 0

Connection Device:

Quality:

Truck Size Limits:

Quantity Limitations per Trip:

Truck Weight Limits:

Other Restrictions:

Additional Access Information:

Fill Facilities at Treatment Plant

Location: Town of Yountville Wastewater Reclamation Facility
7501 Solano Avenue, Yountville, CA 94599

Quality: Disinfected Tertiary and Disinfected Secondary-2.2

Type of Connection: Hydrant and Side

Quantity Limitations per Trip: No Minimum
Maximum 5,000 gal

Hours: Mon-Fri 8 a.m. - 3:30 p.m.

Appointment Required: Yes, for initial fill-up and training

Quantity Limitations per Day: No Minimum
Maximum 25,000 gal per day

Truck Size Limits: None

Truck Weight Limits: None

Additional Access Information:

Training

Required: Yes

Who: Truck Owner, Truck Driver, and Customer using water

Schedule: By Appointment

Duration: 2 hours or less

Frequency: Annually

Location: Wastewater Reclamation Facility

Length of time to become authorized truck hauler: 3 business days

Signage

Area Use Signage Required: Yes

Signs Provided by Water Agency: No

Vehicle Signage Required: No

Signs Provided by Water Agency: N/A

Vehicle Inspection

Required: No

Duration:

How to schedule:

Inspection Location:

Re-inspection Required:

Fees

Water: $992 for first 100,000 gal

Connection Device: No Charge

Vehicle Signage: N/A

Other:

Training: No Charge

Permit: $350

Use Area Signage: User provides

SECTION 2

Additional Commercial Truck Fill Facilities in 2015

Commercial Fill Facilities Planned to be Operational in 2015

COUNTY/CITY	AGENCY
SAN MATEO COUNTY	
Pacifica	North Coast County Water District (contact for availability) Contact: www.nccwd.com
SONOMA COUNTY	
Windsor	Town of Windsor (operational Spring 2015) Contact: (707) 838-5343

SECTION 3

Potential Future Commercial Truck Fill Facilities

Agencies That May Consider Commerical Fill Facilities in the Future

At the time this Guide was prepared, the agencies below indicated they may consider development of commercial fill facilities, in particular if the drought continues.

COUNTY/CITY	AGENCY
ALAMEDA COUNTY	
Piedmont	City of Piedmont
Union City	Union Sanitary District
CONTRA COSTA COUNTY	
Antioch	Delta Diablo Sanitation District
Brentwood	City of Brentwood
Richmond	West County Wastewater District
MARIN COUNTY	
San Rafael	Ross Valley Sanitary District
SAN FRANCISCO	
South San Francisco	South San Francisco
SAN MATEO COUNTY	
Menlo Park	West Bay Sanitary District
San Mateo	City of San Mateo
SOLANO COUNTY	
Benicia	City of Benicia
SONOMA COUNTY	
Guerneville	Sonoma County Water Agency
Petaluma	City of Petaluma
Santa Rosa	City of Santa Rosa
Santa Rosa	Sonoma County Water Agency
Sonoma	Sonoma County Water Agency

SECTION 4

Recycled Water Uses Allowed in California

Recycled Water Uses Allowed[1] in California

Use of Recycled Water	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
Irrigation of:				
Food crops where recycled water contacts the edible portion of the crop, including all root crops	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Parks and playgrounds	**Allowed**	Not Allowed	Not Allowed	Not Allowed
School yards	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Residential landscaping	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Unrestricted-access golf courses	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Any other irrigation uses not prohibited by other provisions of the California Code of Regulations	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Food crops, surface-irrigated, above-ground edible portion, and not contacted by recycled water	**Allowed**	**Allowed**	Not Allowed	Not Allowed
Cemeteries	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Freeway landscaping	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Restricted-access golf courses	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Ornamental nursery stock and sod farms with unrestricted public access	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Pasture for milk animals for human consumption	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Non-edible vegetation with access control to prevent use as a park, playground or school yard	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Orchards with no contact between edible portion and recycled water	**Allowed**	**Allowed**	Not Allowed[2]	Not Allowed[2]
Vineyards with no contact between edible portion and recycled water	**Allowed**	**Allowed**	Not Allowed[2]	Not Allowed[2]
Non food-bearing trees, including Christmas trees not irrigated less than 14 days before harvest	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Fodder and fiber crops and pasture for animals not producing milk for human consumption	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Seed crops not eaten by humans	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Food crops undergoing commercial pathogen-destroying processing before consumption by humans	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Ornamental nursery stock, sod farms not irrigated less than 14 day before harvest	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Supply for impoundment:				
Non-restricted recreational impoundments, with supplemental monitoring for pathogenic organisms	**Allowed**[3]	Not Allowed	Not Allowed	Not Allowed
Restricted recreational impoundments and publicly-accessible fish hatcheries	**Allowed**	**Allowed**	Not Allowed	Not Allowed
Landscape impoundments without decorative fountains	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Supply for cooling or air conditioning:				
Industrial or commercial cooling or air conditioning involving cooling tower, evaporative condenser, or spraying that creates a mist	**Allowed**[4]	Not Allowed	Not Allowed	Not Allowed
Industrial or commercial cooling or air conditioning not involving cooling tower, evaporative condenser, or spraying that creates a mist	**Allowed**	**Allowed**	**Allowed**	Not Allowed

Recycled Water Uses Allowed[1] in California
(continued)

Use of Recycled Water	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
Other uses:				
Groundwater recharge	**Allowed** under special case-by-case permits by RWQCBs[5]			
Flushing toilets and urinals	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Priming drain traps	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Industrial process water that may contact workers	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Structural fire fighting	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Decorative fountains	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Commercial laundries	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Consolidation of backfill material around potable water pipelines	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Artificial snow making for commercial outdoor uses	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Commercial car washes, not heating the water, excluding the general public from washing process	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Industrial process water that will not come into contact with workers	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Industrial boiler feedwater	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Non-structural fire fighting	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Backfill consolidation around non-potable piping	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Soil compaction	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Mixing concrete	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Dust control on roads and streets	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Cleaning roads, sidewalks, and outdoor work areas	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Flushing sanitary sewers	**Allowed**	**Allowed**	**Allowed**	**Allowed**

This summary is prepared from the December 2, 2000-adopted Title 22 Water Recycling Criteria and supersedes all earlier versions. Prepared by Bahman Sheikh and edited by EBMUD Office of Water Recycling, who acknowledge this is a summary and not the formal version of the regulations referenced above.

[1] Refer to the full text of the December 2, 2000 version of Title 22: California Code of Regulations, Chapter 3 Water Recycling Criteria. This chart is only an informal summary of the uses allowed in this version, with the exception of orchards and vineyards noted as "Not Allowed[2]" on page 1 and explained below.

[2] Per California Department of Public Health letter of January 8, 2003 to California Regional Water Quality Control Boards.

[3] Allowed with "conventional tertiary treatment." Additional monitoring for two years or more is necessary with direct filtration.

[4] Drift eliminators and/or biocides are required if public or employees can be exposed to mist.

[5] Refer to Groundwater Recharge Guidelines, available from the California Department of Public Health.

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