

INFORMATION HANDOUT

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

CERTIFICATION No. 34009WQ11

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

PERMITS

UNITED STATES ARMY CORPS OF ENGINEERS
33 CFR PART 330, NATIONWIDE PERMIT

AGREEMENTS

CALIFORNIA DEPARTMENT OF FISH AND GAME
STREAM ALTERATION AGREEMENT No. 2009-0104-R4

MATERIALS INFORMATION

AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT

FOUNDATION REPORT

FINAL HYDRAULIC REPORT

UTILITY SUMMARY

UTILITY PLAN SHEET SUMMARY



Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board

Central Coast Region



Arnold Schwarzenegger
Governor

Internet Address: <http://www.waterboards.ca.gov/centralcoast>
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401-7906
Phone (805) 549-3147 • FAX (805) 543-0397

September 23, 2009

Ms. Karen Bewley
California Department of Transportation
(CalTrans, District 5)
50 Higuera Street
San Luis Obispo, Ca 93401

Dear Ms. Bewley:

WATER QUALITY CERTIFICATION NUMBER 34009WQ11 FOR ATASCADERO 101 REHABILITATION PROJECT, SAN LUIS OBISPO COUNTY

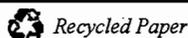
Thank you for the opportunity to review your July 23, 2009 application for water quality certification of the Atascadero 101 Rehabilitation Project. The application was completed on August 31, 2009. The project appears to protect beneficial uses of State waters. We are issuing the enclosed Standard Letter of Certification.

At this time, we do not anticipate issuing additional requirements based on your application. Should new information come to our attention that indicates a water quality problem, we may require additional monitoring and reporting, issue Waste Discharge Requirements, or take other action.

Your Section 401 Water Quality Certification application and CEQA documents indicate that project activities may affect beneficial uses and water quality. The Water Board issues this certification to protect water quality and associated beneficial uses from project activities. We need reports to determine compliance with this certification. All technical and monitoring reports requested in this certification, or anytime after, are required per Section 13267 of the California Water Code.

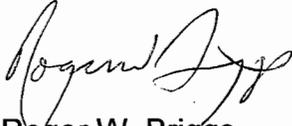
Your failure to submit reports required by this certification, or your failure to submit a report of technical quality acceptable to the Executive Officer, may subject you to enforcement action per Section 13268 of the California Water Code. The Water Board will base enforcement actions on the date of certification. Any person affected by this Water Board action may petition the State Water Resources Control Board (State Board) to review this action in accordance with California Water Code Section 13320; and Title 23, California Code of Regulations, Sections 2050 and 3867-3869. The State Board, Office of Chief Counsel, PO Box 100, Sacramento, CA 95812, must receive the petition within 30 days of the date of this certification. We will provide upon request copies of the law and regulations applicable to filing petitions.

California Environmental Protection Agency



If you have questions please contact **David Innis** at (805) 549-3150 or via email at dinnis@waterboards.ca.gov or Phil Hammer at (805) 549-3882. Please mention the above certification number in all future correspondence pertaining to this project.

Sincerely,



Roger W. Briggs
Executive Officer

Enclosure: Action on Request for CWA Section 401 Water Quality Certification

S:\Section 401 Certification\Certifications\San Luis Obispo\Atascadero 101 Rehabilitation.doc

cc: Enclosures with

Matthew W. Vandersande
U.S. Army Corps of Engineers
Ventura Office
Regulatory Section
2151 Allesandro Drive, Suite 110
Ventura, CA 93001

U.S. Army Corps of Engineers
San Francisco District
Regulatory Section
1455 Market Street, Floor 17
San Francisco, CA. 94103-1368

California Department of Fish and Game
Lake and Streambed Alteration
1234 East Shaw Street
Fresno, CA 93710

401 Program Manager
State Water Resources Control Board
Division of Water Quality
Stateboard401@waterboards.ca.gov

R9-WTR8-Mailbox@epa.gov

Action on Request for
Clean Water Act Section 401 Water Quality Certification
for Discharge of Dredged and/or Fill Materials

PROJECT: Atascadero 101 Rehabilitation
APPLICANT: Karen Bewley
California Department of Transportation
50 Higuera Street
San Luis Obispo, CA 93401

ACTION:

1. Order for Standard Certification
2. Order for Technically-conditioned Certification
3. Order for Denial of Certification

STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment per section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed per to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license was being sought.
3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.
4. This certification is subject to the acquisition of all local, regional, state, and federal permits and approvals as required by law. Failure to meet any conditions contained herein or any the conditions contained in any other permit or approval issued by the State of California or any subdivision thereof may result in the revocation of this Certification and civil or criminal liability.
5. In the event of a violation or threatened violation of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of Section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties,

process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

6. In response to a suspected violation of any condition of this certification, the Water Board may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the Water Board deems appropriate, provided that the burden, including costs, of the reports shall have a reasonable relationship to the need for the reports and the benefits obtained from the reports.
7. The total fee for this project is **\$2,048** which includes the \$640 application fee.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Phil Hammer

Central Coast Region, Region 3

(805) 549-3882

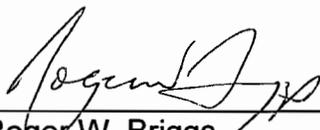
phammer@waterboards.ca.gov

Please refer to the above certification number when corresponding with the Water Board concerning this project.

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from the Atascadero Highway 101 Rehabilitation project shall comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).



Roger W. Briggs
Executive Officer
Regional Water Quality Control Board

9-24-09

Date

PROJECT INFORMATION

Application Date	Received: July 23, 2009 Completed August 31, 2009
Applicant	Karen Bewley – California Department of Transportation (Caltrans, District 5)
Applicant Representatives	N/A
Project Name	Atascadero 101 Rehabilitation
Water Board Application Number	34009WQ11
Type of Project	Highway and on ramp improvement
Project Location	City of Atascadero Longitude: 120. 64° W Latitude: 35.36° -35.44° N
County	San Luis Obispo
Receiving Water(s)	Santa Margarita Creek and Paloma Creek 309.81 Salinas Hydrologic Unit
Water Body Type	Creek
Designated Beneficial Uses	Municipal and Domestic Supply (MUN) Agricultural Supply (AGR) Ground Water Recharge (GWR) Water Contact Recreation (REC-1) Non-Contact Recreation (REC-2) Wildlife Habitat (WILD) Cold Fresh Water Habitat (COLD) Commercial and Sport Fishing (COMM)
Project Description (purpose/goal)	<p>The purpose of the project is to rehabilitate the roadway along this section of Highway 101 in San Luis Obispo County to prevent further deterioration and to reduce the cost of maintenance.</p> <p><u>The Central Coast Regional Water Quality Control Board (Water Board) understands that the project includes the following:</u></p> <ul style="list-style-type: none"> • The project will rehabilitate the roadway along Highway 101 with an asphalt concrete overlay and crack and seat with asphalt concrete overlay to prevent further deterioration and reduce the cost of maintenance. Shoulders will be widened to 10-feet where the existing right of way space and topography allows. Within the project limits there are eight locations that require notification. • Location #1 (Post Mile, [PM] 35.90) repair a large scour

	<p>hole with RSP to prevent further erosion at an unnamed drainage.</p> <ul style="list-style-type: none"> • Location #2 (PM 36.05) extend an existing culvert box 20-feet and add new head and wingwalls to accommodate shoulder widening at an unnamed drainage. • Location #3 (PM 36.07) extend an existing culvert box 16-feet and add new head and wingwalls to accommodate shoulder widening at an unnamed drainage. • Location #4 (PM 37.72) repair a large scour hole with RSP to prevent further erosion at an unnamed drainage. • Location #5 (PM 37.75) extend an existing culvert box 15.5-feet and add new head and wingwalls to accommodate shoulder widening at an unnamed drainage. • Location #6 (PM 37.99) widen an existing bridge across Santa Margarita Creek by approximately 9.5-feet to accommodate shoulder widening • Location #7 (PM 42.16) at an unnamed tributary to Paloma Creek remove a suspended portion of a culvert and repair a large scour hole with RSP to prevent further erosion. • Location #8 (PM 42.17) at an unnamed tributary to Paloma Creek remove and replace a separate portion of a culvert and repair a large scour hole with RSP to prevent further erosion. • Extensive re-vegetation will occur at locations #1, #s 4 & 5, and #6 per planting plans PP-2, PP-3, and PP-4, respectively.
<p>Preliminary Water Quality Issues</p>	<p>The Water Board finds the project has the potential to cause sedimentation, siltation, and pollutant release to the named and unnamed creeks. Erosion could be caused by the construction activities or by the new culvert installation projects. Pollutants could be released from construction equipment (e.g., oil, gasoline, hydraulic fluid, and other liquid contaminants associated with earth-moving equipment) or from the concrete work associated with installation of the culverts, head walls and wingwalls.</p> <p>The Water Board finds the project has the potential to adversely impact California red-legged frog and steelhead trout and their habitats.</p>
<p>Water Board Mitigation Requirements</p>	<p><u>Mitigations proposed by Caltrans that are required to comply with 401 Water Quality Certification are as follows:</u></p>

	<ul style="list-style-type: none">• Caltrans or its contractor may conduct no work in jurisdictional waterways while water is present.• Construction at locations #1 and #6 must take place during the dry season, beginning no earlier than May 15 and ending no later than October 15.• Work may take place any time in locations #2 through 5, and #7 and #8 during the year, but requires erosion and sediment controls when the National Weather Service predicts precipitation with a probability of least a 30 percent.• Caltrans and its Contractors must use silt fences and/or straw wattles around construction areas to control and eliminate erosion and sedimentation.• A biologist must survey Santa Margarita Creek and the U.S. Army Corps of Engineers jurisdictional "Waters of the U.S." two weeks before the onset of project activities. Caltrans must also provide onsite monitoring during construction and if California red-legged frogs, tadpoles, or eggs are found, work in that location must stop until the appropriate level of consultation with the U.S. Fish and Wildlife Service (USFWS) has been completed or the frog leaves on its own accord.• Erosion control measures shall be applied to all disturbed earth surfaces.<ul style="list-style-type: none">• During the rainy season, and non-rainy season when the National Weather Service predicts precipitation with a probability of least a 30 percent, active and inactive stockpiles must be protected from erosion and sedimentation with soil stabilization measures.• Stockpiles must be protected from erosion and sedimentation with soil stabilization measures. These measures must include plastic sheeting, jute mesh, geosynthetic material, or other effective BMPs. All stockpiles must be surrounded with a linear sediment barrier to prevent erosion and sedimentation in runoff. Stockpiles must also be protected from wind erosion to protect the beneficial uses of waters of the state.• Permanent revegetation and temporary seeding must follow the Planting Plans established in the "State of California Department of Transportation Project Plans for Construction on State Highway in San Luis Obispo County In and Near Atascadero from Cuesta Grade Overhead to 0.2 Mile South of 101/41 Separation and From 0.1 Mile North of 101/41 Separation to 0.4 Mile North of Traffic Way Under Crossing" dated July 14, 2009 and provided in the application package.
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	<ul style="list-style-type: none"> • All construction vehicles and equipment used on site must be well maintained and checked daily for fuel and hydraulic fluid leaks or other problems that could result in spills of toxic materials. • Caltrans and its contractors must be required to have oil absorbent pads onsite in case a spill occurs. • Caltrans and its contractors must designate a staging area for equipment/vehicle fueling and storage at least 100-feet away from waterways, in a location where fluid will not flow into waterways. • All vehicle fueling must take place at least 100-feet away from waterways, and in the designated staging area. • Stream diversion dams shall be constructed of sand bags wrapped in heavy plastic sheeting. • Gravel bags shall be filled with clean gravel. Sand bags may be employed for stabilizing stockpile coverings. Gravel bags must be used in all applications to control water movement. • Water Board staff must be notified at least 14 days prior to any dewatering activity. Dewatering may only proceed after Water Board staff approves the dewatering plan for each location. • Water Board staff must be notified if mitigations as described in the 401 Water Quality Certification application for this project are altered by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. Caltrans must inform Water Board staff of any modifications that interfere with compliance with this certification.
Area of Disturbance	<p>Approximately 0.21 acres and 417.6 linear feet</p> <p>Streambed: 0.01 acres permanent, 0.009 acres temporary; 49.77-linear feet permanent, 40 linear feet temporary</p> <p>Riparian: 0.04 acres permanent, 0.15 acres temporary 96.6-linear feet permanent, 231.2 linear feet temporary</p>
Fill/Excavation Area	Approximately 1,309.2 cubic yards of permanent fill
Dredge Volume	0.0 cubic yards
U.S. Army Corps of Engineers Permit No	Nationwide Permit 14 – Linear Transportation Projects
Federal Public Notice	Not applicable
Dept. of Fish and Game Streambed Alteration Agreement	Streambed Alteration Agreement is pending. Final, signed copy will be forwarded immediately upon execution.
Possible Listed Species	Steelhead trout, California Red-legged Frog

<p>Status of CEQA Compliance</p>	<p>Categorical Exemption, in accordance with AB 8, Ch. 6.</p>
<p>Water Board Compensatory Mitigation Requirements</p>	<p><u>The project must include the following:</u></p> <ul style="list-style-type: none"> • Onsite mitigation shall be the first priority. Caltrans shall contact the Water Board if a suitable restoration site cannot be located onsite for habitat impacts. At a minimum the Planting Plans must include successful establishment of: 35 coast live oaks, 26 blue oaks, and 200 willows stakes to be planted at Santa Margarita Creek and an unnamed tributary to Santa Margarita Creek. • In addition, at least 300 deer grass plugs, 15 California blackberry plugs, 22 California sycamores, 4 California buckeyes, 2 manzanitas, 2 toyons, and 10 California bay laurels must be planted at Santa Margarita Creek.
<p>Total Certification Fee</p>	<p>\$2,048</p>
<p>Additional Conditions</p>	<p>Contact Water Board staff when project begins to allow for a site visit.</p> <p>Submit a signed copy of the Department of Fish and Game's streambed alteration agreement to the Water Board immediately upon execution and prior to any discharge to waters of the State.</p> <p>CalTrans or its contractors must submit a storm water pollution prevention plan (SWPPP) to Water Board staff before construction begins. The SWPPP must include a selection of BMPs to avoid/minimize impacts to water quality for each location itemized above. At a minimum, the SWPPP shall provide soil stabilization and sediment control Best Management Practices (BMPs) and a schedule to be followed during the rainy season between October 15 and April 15. CalTrans and its contractors shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season and have materials ready to implement these BMPs if rain is predicted by the National Weather Service. At a minimum, the SWPPP must include the following BMPs: Mulch, Fiber Roll, Silt Fence, Gravel Bag Berm, Drainage Inlet Protection, Street Sweeping, and Temporary Creek Diversion System. As stated above, a separate plan or amendment must be submitted and approved by Water Board staff for any anticipated dewatering.</p> <p>The Water Board requires visual monitoring and three reports for this project:</p>

	<ul style="list-style-type: none">• Visually inspect the site (at least one reach upstream and downstream of project) after completion of the project and for two subsequent rainy seasons to ensure that the new structures are not causing excessive erosion or other water quality problems. If the project does cause water quality problems, contact the Water Board staff member overseeing the project. CalTrans will be responsible for obtaining any additional permits necessary for implementing plans for restoration to prevent further water quality problems.• First Report: Within 30 days of project completion, submit a project completion report that contains a summary of daily activities, monitoring observations, and problems incurred and actions taken; include properly identified post-project photos.• Second and Third Report: Submit annual reports complete with photos of revegetation efforts by December 31 of each monitoring year. Annual reports must quantify growth and progress of restoration and determine to what extent performance criteria have been met. All areas of the revegetation site shall be assessed for percent cover, general health and stature, and signs of reproduction. The report shall also include photographs of revegetation progress over time.
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

June 11, 2009

In response refer to:
1/2009/02184

Chuck Cesena
Senior Environmental Planner
Central Coast Environmental Management Branch
District 5/Central Region/Caltrans
50 Higuera Street
San Luis Obispo, California, 93401-5415

Dear Mr. Cesena:

Thank you for the letter dated April 23, 2009, regarding the Atascadero 101 Rehabilitation Project (EA 0G0300) that is proposed to improve the Highway 101 (Hwy 101) roadway conditions between post miles 35.7 and 46.3 from Santa Margarita to Atascadero, in San Luis Obispo County (County), California. The Department of Transportation (Caltrans) will provide the funding, in accordance with the Economic Stimulus Bill Program, to the County for the project. Caltrans has requested initiation of informal consultation pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*) with NOAA's National Marine Fisheries Service (NMFS). This response also serves as consultation under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended.

This section of Hwy 101 in the County has deteriorated from heavy use and has exceeded the end of its design life. Under the proposed project, highway construction activities will occur along this Hwy 101 corridor section; however, only project impacts were assessed in this letter for the construction activities on the bridge crossing Santa Margarita Creek. Santa Margarita Creek is designated critical habitat (September 5, 2005; 70 FR 52488) for the threatened South-Central California Coast steelhead (*Oncorhynchus mykiss*) (January 5, 2006; 71 FR 834) Distinct Population Segment (DPS) and were evaluated in this consultation.

The Santa Margarita Creek Bridge crossing is a 170-foot long and 32-foot wide, four-span reinforced concrete deck on T-beam girders. The bridge has independent north and southbound spans separated by a gap. The construction will widen the southbound bridge crossing width by approximately 11 feet to meet the current Caltrans standards. To support the additional bridge deck, the three bridge piers and two abutments will also be extended. The bridge piers will be lengthened by 9.5 feet on the upstream side and 1.8 feet on the downstream side. The center bridge pier, Pier 3, is within the creek channel, while Piers 2 and 4 are on the creek banks. The



extension work will involve driving a total of 26 H-piles with an impact hammer at the three pier and two abutment locations. Concrete pile caps will be poured over the piles and tied into the existing pile cap. The pier walls will then extend out onto the extended pile cap surfaces that will support the new deck spans. Construction of an access road and Piers 2 and 4 extensions will require the removal of some riparian vegetation and 6-10 mature oak trees.

The entire rehabilitation project will be completed in two work seasons and involve two construction phases, with the bridge work taking place during the second construction phase in 2011. The pile driving activities are anticipated to take three non-consecutive days over a two week period during the months between May and September. Best management practices (BMPs) have been incorporated into the project description to prevent pollution and minimize impacts to water quality with methods that include: refueling and maintaining equipment offsite; using sediment and erosion control devices; maintenance of drainage and culvert inlets; and other good housekeeping practices to maintain clean work areas.

Santa Margarita Creek is intermittent in the summer months and is expected to be dry in the project area. All construction work at the bridge site will be limited to occur between May 15 and October 15, and only when Santa Margarita Creek is dry and therefore will not affect steelhead. If water is present in the creek when the work activities are scheduled to occur then Caltrans will assume steelhead are present and contact NMFS for further consultation before starting any work.

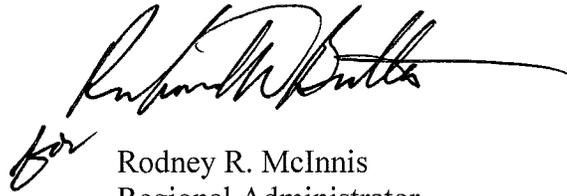
Primary constituent elements (PCEs) of designated critical habitat in the action area include water quality and quantity, foraging habitat, and migratory corridors free of obstructions. Construction activities will occur along 200 linear feet of Santa Margarita Creek. Permanent impacts of 0.001 acres (44 square feet) to critical habitat will result from the extension of Pier 3. This amount of habitat loss is expected to have negligible impacts to steelhead that will use the corridor for migration. Temporary impacts of 0.227 acres (9,888 square feet) to critical habitat are anticipated from the access roads, creek fill, and bank grading that will result in short-term minimal disturbance to water quality from turbidity and riparian habitat loss, but are anticipated to recover to pre-project conditions using the BMPs, including replanting plans are incorporated into the project design.

Based on the best available information, NMFS concurs with Caltrans' determination that the proposed project is not likely to adversely affect the designated critical habitat for SCCC steelhead DPS in Santa Margarita Creek. This concludes consultation in accordance with 50 CFR 402.13(a) for the proposed bridge extension over Santa Margarita Creek as part of the Atascadero 101 Rehabilitation Project along Hwy 101 in San Luis Obispo County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Pursuant to FWCA, NMFS has no comments to provide.

If you have questions concerning this consultation, please contact Dave Walsh at (707) 575-6016, or by email at: dave.walsh@noaa.gov.

Sincerely,


for Rodney R. McInnis
Regional Administrator

cc: Jim Walth, Caltrans District 5
Copy to File Administrative Record # 151422SWR2009SR00202



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



IN REPLY REFER TO:
81440-2009-1-0257

May 19, 2009

Jim Walth
California Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Concurrence Request for Atascadero 101 Rehabilitation Project, San Luis Obispo County, California

Dear Mr. Walth,

We are responding to your request, dated March 24, 2009, and received in our office on March 27, 2009, for our concurrence with your determination that the proposed project may affect, but is not likely to adversely affect the federally threatened California red-legged frog (*Rana aurora draytonii*). On May 5, 2009, you determined via an electronic mail message (J. Walth pers. com 2009), that the proposed project would not destroy or adversely modify proposed critical habitat for the California red-legged frog. Your request and our response are made pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)

The proposed project site is located on State Route 101, between post miles 35.7 and 46.3, between the cities of Santa Margarita and Atascadero, in San Luis Obispo County, California. The proposed project would widen the Santa Margarita Creek Bridge to the west by approximately 11 feet. Caltrans would repair 33 small culverts or drainage ditches, and one small scour pond (created when one of the drainage ditches failed) as part of the proposed project. All work on these drainage features, and the scour pond, would be conducted when they are dry. Approximately 0.03 acre of riparian vegetation would be permanently removed. Approximately 0.034 acre of riparian vegetation and 0.035 acre of upland chaparral would be temporarily impacted, and then restored. Caltrans proposes to replace permanent impacts at a ratio of 3:1.

California red-legged frogs are known to occur approximately 1.6 miles downstream of the proposed project site, in Santa Margarita and Yerba Buena Creeks, and upstream on the Spanish Oaks Ranch. Caltrans did not find California red-legged frogs within the limits of the proposed project during surveys conducted in 2008 and 2009.

To avoid adverse effects to the California red-legged frog, Caltrans would complete the proposed project between May and October, when Santa Margarita Creek is dry. Caltrans would also conduct pre-construction surveys for the California red-legged frog, monitor the proposed project during construction, and would stop work if California red-legged frogs are found. In addition,

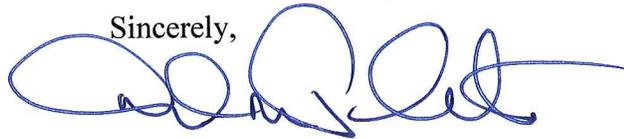
Caltrans would implement the protective measures included in the Service's programmatic biological opinion (Service 2003).

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the California red-legged frog for the following reasons: 1) California red-legged frogs are not likely to be present at the project site during construction; 2) Caltrans will conduct pre-construction surveys and provide onsite monitoring during construction activities; and 3) if a California red-legged frog is observed within the project area, work in that location will stop until the appropriate level of consultation has been completed or the frog leaves on its own accord.

Please note that our concurrence does not authorize take of listed species should any be detected during project implementation. If any federally listed species are detected, activities that could result in take should stop and the Ventura Fish and Wildlife Office should be contacted for guidance.

If you have any questions regarding the contents of this letter, please contact Steve Kirkland of our staff at (805) 644-1766, extension 267.

Sincerely,

A handwritten signature in blue ink, appearing to read 'David M. Pereksta', with a long horizontal flourish extending to the right.

David M. Pereksta
Assistant Field Supervisor

REFERENCES CITED

U.S. Fish and Wildlife Service. 2003. Biological opinion for projects funded or approved under the Federal Aid program (HDA-CA, File #: Section 7 with Ventura USFWS, Document# S38192) (1-8-02-F-68). Ventura, California.

PERSONAL COMMUNICATIONS

Walth. J. 2009. Electronic mail. Proposed critical habitat for the California red-legged frog. Dated May 5, 2009. Associate Biologist. California Department of Transportation, District 5. San Luis Obispo, California.



U S Army Corps Engineers
San Francisco District

33 CFR Part 330; Issuance of Nationwide Permits March 19, 2007 and regional conditions August 24, 2007

13. Bank Stabilization.

Bank stabilization activities necessary for erosion prevention, provided the activity meets all of the following criteria:

- (a) No material is placed in excess of the minimum needed for erosion protection;
- (b) The activity is no more than 500 feet in length along the bank, unless this criterion is waived in writing by the district engineer;
- (c) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line, unless this criterion is waived in writing by the district engineer;
- (d) The activity does not involve discharges of dredged or fill material into special aquatic sites, unless this criterion is waived in writing by the district engineer;
- (e) No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any water of the United States;
- (f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,
- (g) The activity is not a stream channelization activity.

14. Linear Transportation Projects.

☒ Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate. This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) The loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 27.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 27.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary

1. Navigation.

- (a) No activity may cause more than a minimal adverse effect on navigation.
- (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or

otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream

channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species.

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species

Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the preconstruction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete preconstruction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and nonlethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly

from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

18. Historic Properties.

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a preconstruction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the preconstruction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters.

However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management

consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
- (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer

issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);
- (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;
- (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
- (6) If any listed species or designated critical habitat might be affected or is in the vicinity

of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWP and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring preconstruction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic

Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district

engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each preconstruction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic

environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or

conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

B. Regional Conditions

14. LINEAR TRANSPORTATION PROJECTS:

1. Notification to the Corps (in accordance with General Condition No. 27) is required for all projects filling greater than 300 linear feet of channel.
2. This permit does not authorize construction of new airport runways and taxiways.
3. To the maximum extent practicable, any new or additional bank stabilization required for the crossing must incorporate structures or modifications beneficial to fish and wildlife (e.g., soil bioengineering or biotechnical design, root wads, large woody debris, etc.). Where these structures or modifications are not used, the applicant shall demonstrate why they were not considered practicable. Bottomless and embedded culverts are encouraged over traditional culvert stream crossings.
4. As part of the notification to the Corps (in accordance with General Condition No. 27) requirement for stream crossing activities filling an excess of 300 feet in length, the project proponent shall address the effect of the bank stabilization on the stability of the opposite side of the streambank (if it is not part of the stabilization activity), and on adjacent property upstream and downstream of the activity.

AGREEMENT



**California Fish and Game Code Section 1602
Stream Alteration Agreement No. 2009-0104-R4
California Department of Transportation
Santa Margarita Creek, Paloma Creek, and
unnamed drainages – San Luis Obispo County
05-SLO-101 PM 35.6-46.3 EA 05-0G0300**

Parties:

California Department of Fish and Game
Central Region
1234 East Shaw Avenue
Fresno, California 93710

California Department of Transportation
Karen Bewley
50 Higuera Street
San Luis Obispo, California 93401

WHEREAS:

1
2
3 1. Ms. Karen Bewley, representing the California Department of Transportation
4 (referred to as "Caltrans") on July 27, 2009, notified ("Notification" No. 2009-0104-R4)
5 the Department of Fish and Game ("Department") of their intent to divert or obstruct the
6 natural flow of, or change the bed or banks of, or use materials from the Santa
7 Margarita Creek, Paloma Creek, and unnamed drainages in San Luis Obispo County,
8 waters over which the Department asserts jurisdiction pursuant to Division 2, Chapter 6
9 of the California Fish and Game Code.

10
11 2. Caltrans may not commence any activity that is subject to Fish and Game Code
12 Sections 1600 et seq., until the Department has found that such Project shall not
13 substantially adversely affect an existing fish or wildlife resource or until the
14 Department's proposals, or the decisions of a panel of arbitrators, have been
15 incorporated into such projects.

16
17 3. Fish and Game Code Sections 1600 et seq., make provisions for the negotiation of
18 agreements regarding the delineation and definition of appropriate activities, Project
19 modifications and/or specific measures necessary to protect fish and wildlife resources.

20
21 4. The Department has determined that without the protective features identified in
22 this Agreement, the activities proposed in the Notification could substantially adversely
23 affect fish and wildlife.

Agreement No. 2009-0104-R4
Department of Transportation
Santa Margarita Creek, Paloma Creek,
and unnamed drainages
San Luis Obispo County

1 **NOW THEREFORE, IT IS AGREED THAT:**

2
3 1. The receipt of this document ("Agreement"), by Caltrans, satisfies the
4 Department's requirement to notify Caltrans of the existence of an existing fish and
5 wildlife resource that may be substantially adversely affected by the Project that is
6 described in the Notification.

7
8 2. The contents of this Agreement constitute the Department's proposals as to
9 measures necessary to protect fish and wildlife resources, and satisfy the Department's
10 requirement to submit these proposals to Caltrans.

11
12 3. The signature of Caltrans' representative on this Agreement constitutes Caltrans'
13 commitment to incorporate the Department's proposals into the Project that is described
14 in the Notification.

15
16 4. This Agreement does not exempt Caltrans from complying with all other applicable
17 local, State, and Federal law, or other legal obligations.

18
19 5. This Agreement, alone, does not constitute or imply the approval or endorsement
20 of a Project, or of specific Project features, by the Department, beyond the
21 Department's limited scope of responsibility, established by Code Sections 1600 et seq.
22 This Agreement does not therefore assure concurrence, by the Department, with the
23 issuance of permits from this or any other agency. Independent review and
24 recommendations shall be provided by the Department as appropriate on those
25 projects where local, State, or Federal permits or environmental reports are required.

26
27 6. This Agreement does not authorize the "take" (defined in Fish and Game Code
28 Section 86 as hunt, pursue, catch, capture, kill; or attempt to hunt, pursue, catch,
29 capture, or kill) of State-listed threatened or endangered species. If the Operator, in the
30 performance of the agreed work, discovers the presence of a listed species in the
31 Project work area, work shall stop immediately. Caltrans shall not resume activities
32 authorized by this Agreement until such time as valid "take" permits are obtained from
33 the Department, pursuant to Fish and Game Code Sections 2081(a) and 2081(b), as
34 appropriate.

35
36 7. To the extent that the Provisions of this Agreement provide for the diversion of
37 water, they are agreed to with the understanding that Caltrans possesses the legal right
38 to so divert such water.

39
40 8. To the extent that the Provisions of this Agreement provide for activities that
41 require Caltrans to trespass on another owner's property, they are agreed to with the
42 understanding that Caltrans possesses the legal right to so trespass.

Agreement No. 2009-0104-R4
Department of Transportation
Santa Margarita Creek, Paloma Creek,
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- 1 9. To the extent that the Provisions of this Agreement provide for activities that are
2 subject to the authority of other public agencies, said activities are agreed to with the
3 understanding that all appropriate permits and authorizations shall be obtained prior to
4 commencing agreed activities.
5
- 6 10. All Provisions of this Agreement remain in force throughout the term of the
7 Agreement. Any Provision of the Agreement may be amended at any time, provided
8 such amendment is agreed to in writing by both parties. Mutually approved
9 amendments become part of the original Agreement and are subject to all previously
10 negotiated Provisions. The Agreement may be terminated by either party, subject to
11 30 days written notification.
12
- 13 11. Caltrans shall provide a copy of the Agreement to the Project supervisors and all
14 contractors and subcontractors. Copies of the Agreement shall be available at work
15 sites during all periods of active work and shall be presented to Department personnel
16 upon demand.
17
- 18 12. Caltrans agrees to provide the Department access to the Project site at any time to
19 ensure compliance with the terms, conditions, and Provisions of this Agreement.
20
- 21 13. Caltrans and any contractor or subcontractor, working on activities covered by this
22 Agreement, are jointly and separately liable for compliance with the Provisions of this
23 Agreement. Any violation of the Provisions of this Agreement is cause to stop all work
24 immediately until the problem is reconciled. Failure to comply with the Provisions and
25 requirements of this Agreement may result in prosecution.
26
- 27 14. Caltrans assumes responsibility for the restoration of any fish and wildlife habitat
28 which may be impaired or damaged either directly or, incidental to the Project, as a
29 result of failure to properly implement or complete the mitigation features of this
30 Agreement, or from activities which were not included in the Caltrans' Notification.
31
- 32 15. It is understood that the Department enters into this Agreement for purposes of
33 establishing protective features for fish and wildlife, in the event that a Project is
34 implemented. The decision to proceed with the Project is the sole responsibility of
35 Caltrans, and is not required by this Agreement. It is agreed that all liability and/or
36 incurred costs, related to or arising out of Caltrans' Project and the fish and wildlife
37 protective conditions of this Agreement, remain the sole responsibility of Caltrans.
38 Caltrans agrees to hold harmless and defend the Department against any related claim
39 made by any party or parties for personal injury or other damage.
40
- 41 16. The terms, conditions, and Provisions contained herein constitute the limit of
42 activities agreed to and resolved by this Agreement. The signing of this Agreement
43 does not imply that Caltrans is precluded from doing other activities at the site.
44 However, activities not specifically agreed to and resolved by this Agreement are
45 subject to separate notification pursuant to Fish and Game Code Sections 1600 et seq.

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1 **California Environmental Quality Act (CEQA) Compliance:** This project is Exempt
2 from CEQA per ABx2 8 which was approved by the Governor and filed with the
3 Secretary of State on February 20, 2009. ABx2 8 SEC. 4 added Section 21080.42 to
4 the Public Resources Code stating (a) the following transportation projects are exempt
5 from this division (CEQA). This project is listed as (8) U.S. Highway 101 pavement
6 rehabilitation and shoulder widening in San Luis Obispo County.

7
8 This Agreement contains a Monitoring and Reporting Program (MRP), to incorporate
9 monitoring and reporting requirements for the activities authorized in this Agreement.

10
11 **Project Location:** The work authorized by this Agreement will occur adjacent to the
12 existing State Route (SR) 101 where it crosses Santa Margarita Creek, Paloma Creek,
13 and six unnamed drainages between Post Mile (PM) 35.6 and 46.3 in Section 36, 25,
14 and 19 of Township 29 South, Range 12 East (**Figure 1**) and Section 36 of Township 28
15 South, Range 12 East in San Luis Obispo County (**Figure 2**).

16
17 **Project Description:** Caltrans' Notification includes Fish and Game Notification Form
18 FG2023 and supporting documents. The Notification comprises Caltrans' Project
19 description, and it is used as the basis for establishing the protective Provisions that are
20 included in this Agreement. Any changes or additions to the Project as described in the
21 Notification shall require additional consultation and protective Provisions. Caltrans has
22 proposed the following scope of work.

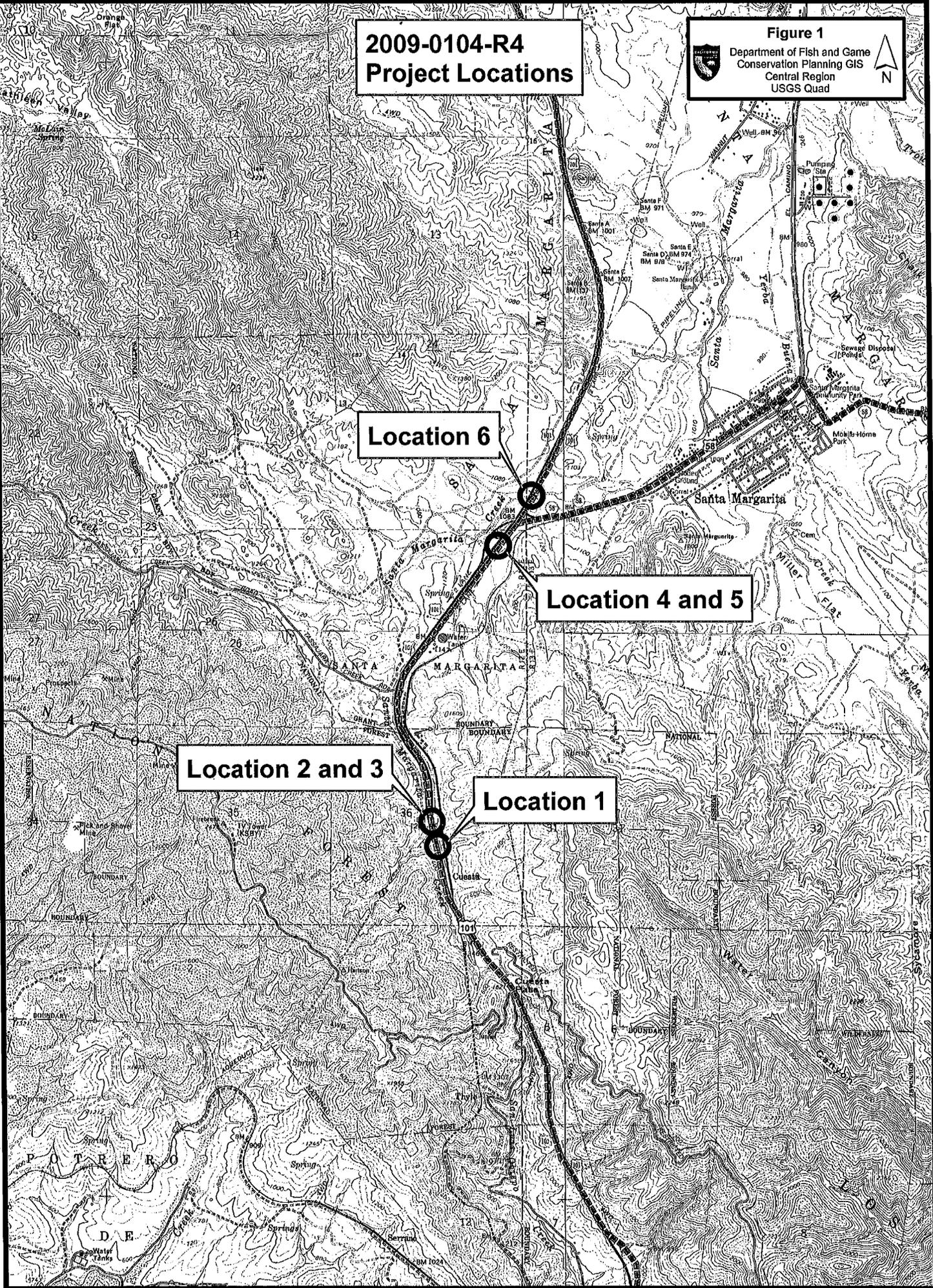
23
24 The overall purpose of the entire Project is to rehabilitate the SR 101 roadway with an
25 asphalt concrete overlay and widen the shoulders to 10 feet where existing right-of-way
26 space and topography allows. All work on SR 101 between PM 35.7 and 43.6 where it
27 crosses blue line drainages not listed and described below shall stay outside 1600
28 jurisdiction and will not result in impacts to the bed, bank or riparian vegetation of the
29 drainage. The bulleted items comprise the activities authorized by this Agreement.

- 30
31 • Location #1 (PM 35.90) is an unnamed drainage with a large scour hole. Caltrans
32 proposes to place the minimum amount of rock slope protection (RSP) needed to
33 fill the scour hole and prevent further erosion.
34
35 • Location #2 (PM 36.05) is an inlet of an unnamed drainage with an existing box
36 culvert that needs to be extended to accommodate the shoulder widening. The
37 existing culvert would be extended approximately 20 feet and new head and wing
38 walls would be constructed.
39
40 • Location #3 (PM 36.07) is an outlet of an unnamed drainage with an existing box
41 culvert that needs to be extended to accommodate the shoulder widening. The
42 existing culvert would be extended approximately 16 feet and new head and wing
43 walls would be constructed.

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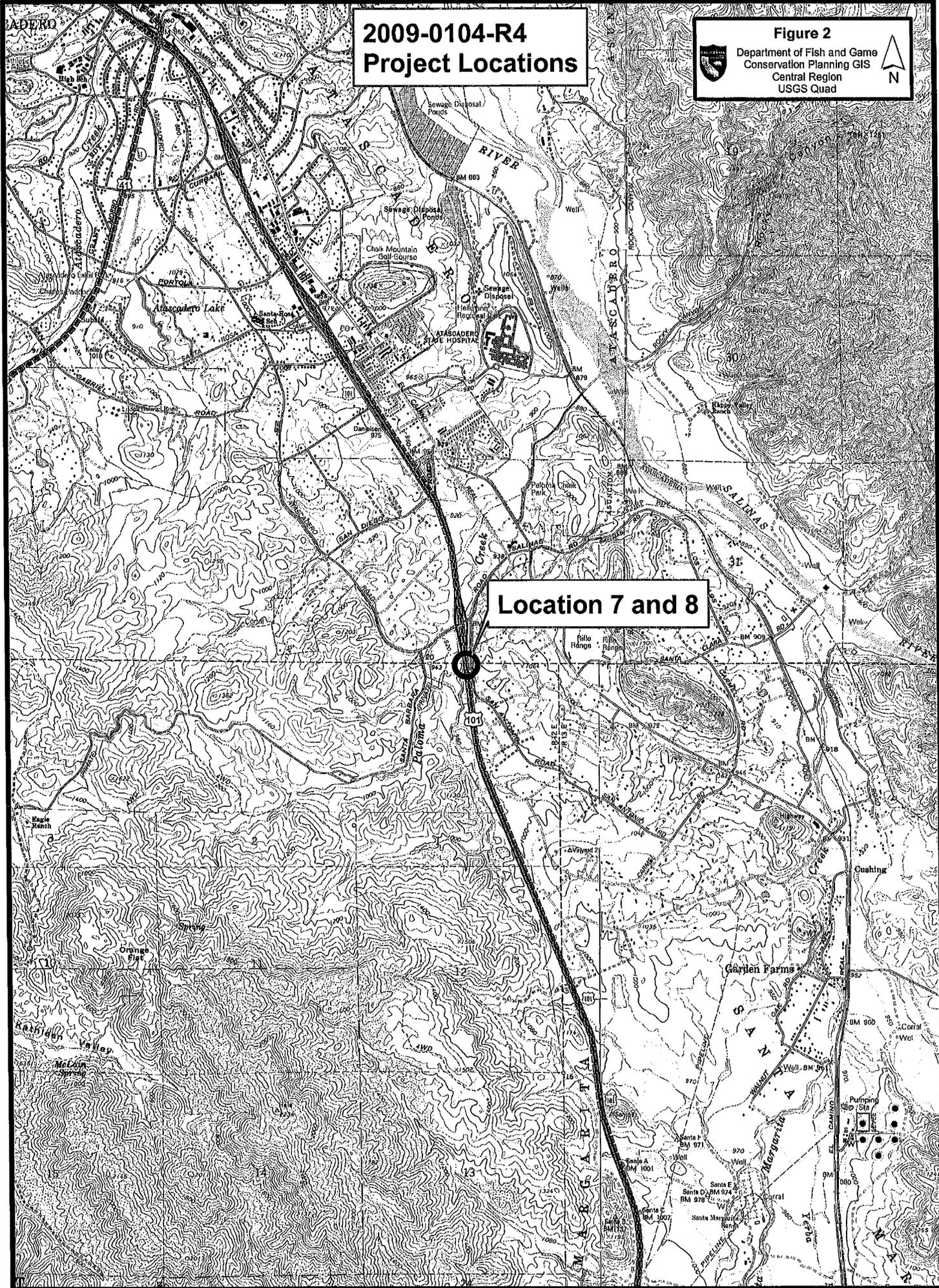
**2009-0104-R4
Project Locations**

Figure 1
Department of Fish and Game
Conservation Planning GIS
Central Region
USGS Quad



2009-0104-R4 Project Locations

Figure 2
Department of Fish and Game
Conservation Planning GIS
Central Region
USGS Quad



- 1 • Location #4 (PM 37.72) is an inlet of an unnamed drainage with an existing box
2 culvert that has a scour hole at the outlet. Caltrans proposes to place the
3 minimum amount of RSP needed to fill the scour hole and prevent further erosion.
4
- 5 • Location #5 (PM 37.73) is an outlet of an unnamed drainage with an existing box
6 culvert that needs to be extended to accommodate the shoulder widening. The
7 existing culvert would be extended approximately 15.5 feet and wing walls would
8 be constructed.
9
- 10 • Location #6 (PM 37.99) is Santa Margarita Creek where the existing bridge needs
11 to be widened to accommodate the shoulder widening. This will require extending
12 the piers and abutments approximately 9.5 feet.
13
- 14 • Location #7 (PM 42.16) is an unnamed tributary to Paloma Creek with an existing
15 culvert that has a scour hole at the outlet. Caltrans proposes to place the
16 minimum amount of RSP needed to fill the scour hole and prevent further erosion.
17
- 18 • Location #8 (PM 42.17) is an existing culvert that outlets into Paloma Creek, where
19 there is a separated section and a scour hole at the outlet. Caltrans proposes to
20 remove and replace the separated portion of the pipe and place the minimum
21 amount of RSP needed to fill the scour hole and prevent further erosion.
22

23 **Plant and Animal Species of Concern:** This Agreement is intended to avoid,
24 minimize, and mitigate adverse impacts to the fish and wildlife resources that occupy
25 the area of Santa Margarita Creek, Paloma Creek, the six unnamed drainages, and the
26 immediate adjacent riparian habitat. The protective measures described in this
27 Agreement must be implemented in order to avoid impacts, within the area covered by
28 this Agreement, to the following species: Federal threatened California red-legged frog
29 (*Rana aurora draytonii*), Federal threatened Steelhead (*Oncorhynchus mykiss irideus*),
30 Species of Special Concern Southwestern pond turtle (*Clemmys marmorata pallida*),
31 Species of Special Concern Pallid bat (*Antrozous pallidus*), as well as other bat
32 species, birds, mammals, fish, reptiles, amphibians, invertebrates and plants that
33 comprise the local riparian ecosystem. Departmental files contain lists of species that
34 could be subject to potential generated impacts from this Project.
35

36 PROVISIONS:

37 General

- 38
- 39
 - 40 1. The Notification, together with all supporting documents, is hereby incorporated
41 into this Agreement to describe the location and features of the proposed Project.
42 Caltrans agrees that all work shall be done as described in the Notification and
43 supporting documents, incorporating all wildlife resource protection features, mitigation

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1 measures, and Provisions as described in this Agreement. Caltrans further agrees to
2 notify the Department of any modifications that need to be made to the Project plans
3 submitted to the Department. At the discretion of the Department, modifications may
4 be deemed minor, requiring an amendment to this Agreement, or substantial requiring
5 the submission of a new notification application. If the latter is the case, this Agreement
6 becomes null and void. Failure to notify the Department of changes to the original
7 plans or subsequent amendments to this Agreement may result in the Department
8 suspending or canceling this Agreement.

9
10 2. Before the start of construction/work activities covered under this Agreement, all
11 workers shall have received training from Caltrans' staff, or approved alternate trainer,
12 on the content of this Agreement, the resources at stake, and the legal consequences
13 of non-compliance.

14
15 3. When known, prior to beginning work, Caltrans shall provide a construction/work
16 schedule to the Department (fax to Laura Peterson-Diaz, Environmental Scientist, at
17 (559) 243-4020). Please reference the Agreement number. Caltrans shall also notify
18 the Department upon the completion of the activities covered by this Agreement.

19
20 4. Agreed activities within the bed, bank, or channel may commence any time after
21 the Department has signed this Agreement. This Agreement shall remain in effect for
22 five (5) years beginning on the date signed by the Department. If the Project is not
23 completed prior to the expiration date defined above, Caltrans shall contact the
24 Department to negotiate a new expiration date and any new requirements.

25
26 Flagging/Fencing

27
28 5. Within the riparian corridor, Caltrans shall identify the upstream and downstream
29 limits of the minimum work area required, access routes, the Project footprint, plus all
30 Environmentally Sensitive Areas (ESA). These boundaries shall be defined by the
31 Caltrans' Project engineer and biologist, and flagged/fenced prior to the beginning of
32 construction. These limits shall not extend beyond Caltrans' right-of-way and/or the
33 construction easement, and shall be confined to the minimal area needed to
34 accomplish the proposed work. Flagging/fencing shall be maintained in good repair for
35 the duration of construction in the area under 1602 jurisdiction.

36
37 Wildlife

38
39 6. An approved biologist shall perform general wildlife surveys of the Project area
40 (including access routes and storage areas) prior to Project construction start with
41 special attention being paid to the sensitive species noted above and shall report any
42 possible adverse affect to fish and wildlife resources not originally reported. If the
43 survey shows presence of any wildlife species which could be impacted, Caltrans shall

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1 any State- or Federal-listed threatened or endangered species are found within the
2 proposed work area or could be impacted by the work proposed, a new Agreement
3 and/or a 2081(b) State Incidental Take Permit may be necessary before work can
4 begin.

5
6 7. If work is done between March 1 and September 1, then in order to protect nesting
7 birds, an approved biologist shall survey for nesting activity in and adjacent to the
8 defined "work area", before construction begins. If any nesting activity is observed,
9 which could be disturbed by the proposed scope of work, Caltrans shall contact the
10 Department and mitigation, specific to each incident, shall be developed.

11
12 8. Swallows: If Caltrans cannot avoid work on the bridges where there is the
13 potential for disturbance of nesting swallows (February 15 through August 15), then
14 prior to February 1, of each year, Caltrans shall remove all existing inactive nests which
15 would be destroyed by the Project. Caltrans shall continue to discourage new nest
16 building in places where they would be disturbed, using methods developed in
17 consultation with the Caltrans District Biologist and the Department. Following the initial
18 nest removal, continued removal of new nests must be repeated at least daily as long
19 as the swallows continue to attempt to build nests, or until a swallow exclusion device is
20 installed. Where disturbance shall occur, nesting must be discouraged throughout the
21 nesting season.

22
23 9. Bats: No bats shall be disturbed without specific notice to and consultation with
24 the Department. Pre-construction surveys by a qualified biologist shall be performed to
25 determine if bat species are utilizing the bridge at Santa Margarita Creek for roosting. If
26 bats are using the existing bridge as a day roosting site, exclusion of these bats shall
27 take place a minimum of four (4) weeks prior to construction. If after four (4) weeks
28 exclusion measures are unsuccessful and bat species still utilize the bridge for roosting,
29 Caltrans shall contact the Department and mitigation shall be developed in consultation
30 with the Department. No work shall be done at night.

31
32 10. Steelhead Trout: All work shall be done when the channels are dry.

33
34 11. If any wildlife is encountered during the course of construction, said wildlife shall
35 be allowed to leave the construction area unharmed.

36
37 Vegetation

38
39 12. For this Project, seven coast live oak (*Quercus agrifolia*) ranging in size from 10 to
40 24 inches in diameter at breast height (DBH), one blue oak (*Quercus douglasii*) 12-inches
41 DBH and one willow (*Salix* sp.) 10-inches DBH will be removed. Any riparian trees or
42 shrubs with trunks greater than or equal to four (4) inches DBH, removed during Project
43 activities shall be mitigated for by implementation of a Revegetation Plan described
44 under Restoration below.

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1 13. Precautions shall be taken to avoid any unnecessary damage to any vegetation by
2 people or equipment for the duration of the Project.

3
4 Vehicles

5
6 14. Construction vehicles and heavy equipment access to the stream banks and bed
7 shall be limited to predetermined ingress and egress corridors and shall be restricted to
8 the dry portions of the channel. All other areas adjacent to the work site shall be
9 considered an ESA and shall remain off-limits to construction equipment.

10
11 Pollution

12
13 15. Caltrans and all contractors and subcontractors shall be subject to the pollution
14 protective and other features of Department of Transportation Standard Specifications
15 Section 7-1.01G and Fish and Game Code Sections 5650 and 12015. In addition, all
16 Project-generated debris, building materials, and rubbish shall be removed from the
17 river and from areas where such materials could be washed into it.

18
19 16. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents
20 shall be located more than 75 feet from the stream channel and banks. Any equipment
21 or vehicles driven and/or operated within or adjacent to the stream shall be checked
22 and maintained daily to prevent leaks of materials that, if introduced to water, could be
23 deleterious to aquatic life. Stationary equipment such as generators, compressors, and
24 welders, located within or adjacent to the stream, shall be positioned over drip-pans.

25
26 17. If a spill should occur, cleanup shall begin immediately. The Department shall be
27 notified as soon as possible by Caltrans and shall be consulted regarding further
28 cleanup procedures.

29
30 18. All Project-generated debris, building materials, and rubbish shall be removed
31 from the stream and from areas where such materials could be washed into the stream.
32 Excavated materials shall not be stockpiled in a location where they could discharge
33 into the channel without implementing management measures to prevent accidental
34 discharge into the stream.

35 Erosion

36
37 19. All disturbed soils shall be stabilized to reduce erosion potential, both during and
38 following construction. Erosion control Best Management Practices (BMPs) shall be
39 applied to all disturbed areas.

40
41 Fill/Spoil

42
43 20. Rock, gravel, and/or other materials shall not be imported into or moved within the
44 stream, except as otherwise addressed in this Agreement. Only on-site materials and
45 clean imported fill shall be used to complete the Project.

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1 21. Fill shall be limited to the minimal amount necessary to accomplish the agreed
2 activities. Excess fill material shall be moved off-site at Project completion.

3
4 22. All cleared debris shall be removed from the normal high water areas of a stream
5 or channel and shall not be redeposited within the flood plain. Spoil sites shall not be
6 located within a stream or wetland, where spoil could be washed back into a stream, or
7 where it covers aquatic or riparian vegetation.

8
9 Restoration

10
11 23. Excess material must be removed from the Project site, pursuant to Department of
12 Transportation Standard Specifications Section 7-1.13.

13
14 24. Caltrans shall make the final contour of the site match the adjacent slope of the
15 land and provide the appropriate surface water drainage. All areas subject to
16 temporary ground disturbance, including storage and staging areas, temporary roads,
17 pipeline corridors, etc., shall be recontoured, if necessary, and revegetated to promote
18 restoration of the area.

19
20 25. Caltrans shall implement any and all restoration activities proposed in its
21 Notification. Where proposed restoration is not consistent with this Provision, Caltrans
22 shall incorporate the restoration guidelines below and submit a revised mitigation plan
23 to the Department for approval prior to commencement of the proposed work. Caltrans
24 shall submit a Revegetation Plan that includes the following:

- 25
26 • Compensation for removed shrubs and trees by:
- 27 ○ Identifying species damaged or removed during Project activities. Native
28 riparian trees and shrubs (e.g., willow, cottonwood, sycamore, etc.) between
29 four (4) to 25-inches DBH shall be replaced in-kind at a ratio of 3:1, and trees
30 greater than 25-inches DBH shall be replaced at a ratio of 10:1.
 - 31 ○ Describing when, where, and how replacement shrubs and trees will be
32 planted. "When" should be the first suitable season after construction is
33 complete. "Where" should be the nearest suitable location to the area
34 where they were removed. "How" shall include measures to be implemented
35 (i.e., planting layout design with sufficient space appropriate for each species,
36 irrigation methods, weed management, and maintenance and replanting if
37 necessary) to ensure a minimum of 70 percent survivorship for three (3) years,
38 after the last planting, (i.e., if up to 30 percent of any of the species are at
39 risk of not surviving and repeated plantings are necessary, then monitoring,
40 maintenance, and annual reporting shall continue for the subsequent
41 three (3) years).
 - 42
 - 43

- 1 • Seeding and mulching exposed slopes, or stream banks not revegetated with
2 riparian shrubs or trees:
3
4 ○ The seed blend shall include a minimum of three (3) locally native grass
5 species. Locally native wildflower and/or shrub seeds may also be included
6 in the mix. One (1) or two (2) sterile non-native perennial grass species
7 may be added to the seed mix provided that amount does not exceed
8 25 percent of the total seed mix by count.
9
10 ○ Seeding shall be completed as soon as possible, but no later than
11 November 15 of the year construction ends.
12

13 26. At the discretion of the Department, all exposed areas where seeding is
14 considered unsuccessful after 90 days shall receive appropriate soil preparation and a
15 second application of seeding, straw, or mulch as soon as is practical on a date
16 mutually agreed upon.
17

18 **MONITORING AND REPORTING PROGRAM (MRP):**

19 PURPOSE

20
21
22 The purpose of the MRP is to ensure that the protective measures required by the
23 Department are properly implemented, and to monitor the effectiveness of those
24 measures.
25

26 OBLIGATIONS OF THE OPERATOR

27 Caltrans shall have primary responsibility for monitoring compliance with all protective
28 measures included as "Provisions" in this Agreement. Protective measures must be
29 implemented within the time periods indicated in the Agreement and the program
30 described below.
31

32 Caltrans shall submit the following Reports to the Department:
33

- 34 • Verification of employee training (Provision 2).
35
36 • Construction/work schedule (Provision 3).
37
38 • Wildlife survey results (Provisions 6 through 10).
39
40 • Revegetation Plan (Provision 12 and 25). Plan shall be implemented for a
41 minimum of three (3) years with annual reports on survivorship due January 31
42 each year until the minimum of 70 percent survivorship has been achieved, at
43 which time a Final Restoration Report shall be submitted.

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- 1 • A Final Project Report submitted within 30 days after the Project is completed.
2 The final report shall summarize the Project construction, including any problems
3 relating to the protective measures of this Agreement. "Before and After" photo
4 documentation of the Project site shall be required.

5
6 In addition to the above monitoring and reporting requirements, the Department
7 requires as part of this MRP that Caltrans:

- 8
9 • Immediately notify the Department in writing if monitoring reveals that any of the
10 protective measures were not implemented during the period indicated in this
11 program, or if it anticipates that measures will not be implemented within the time
12 period specified.
13
14 • Immediately notify the Department if any of the protective measures are not
15 providing the level of protection that is appropriate for the impact that is occurring,
16 and recommendations, if any, for alternative protective measures.

17
18 **VERIFICATION OF COMPLIANCE:**

19
20 The Department shall verify compliance with protective measures to ensure the
21 accuracy of Caltrans' monitoring and reporting efforts. The Department may, at its sole
22 discretion, review relevant Project documents maintained by Caltrans, interview
23 Caltrans' employees and agents, inspect the Project area, and take other actions to
24 assess compliance with or effectiveness of protective measures for the Project.

1 **CONCURRENCE:**
2
3
4
5

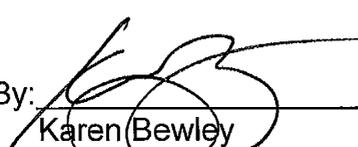
6 **APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME**

7
8 on September 24, 2009.
9

10
11 
12 for Jeffrey R. Single, Ph.D.
13 Regional Manager
14 Central Region
15
16
17
18

19 **ACKNOWLEDGMENT**
20

21 The undersigned acknowledges receipt of this Agreement and, by signing, accepts and
22 agrees to comply with all terms and conditions contained herein. The undersigned also
23 acknowledges that adequate funding shall be made available to implement the
24 measures required by this Agreement.
25
26
27

28
29
30 By: 
31 Karen Bewley
32 California Department of Transportation

Date: 9/15/2009

Agreement No. 2009-0104-R4
Department of Transportation
Santa Margarita Creek, Paloma Creek,
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San Luis Obispo County

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MATERIALS INFORMATION HANDOUT

05-SLO-101-35.6/46.3
Atascadero 101 Rehabilitation Project
05-0G0301

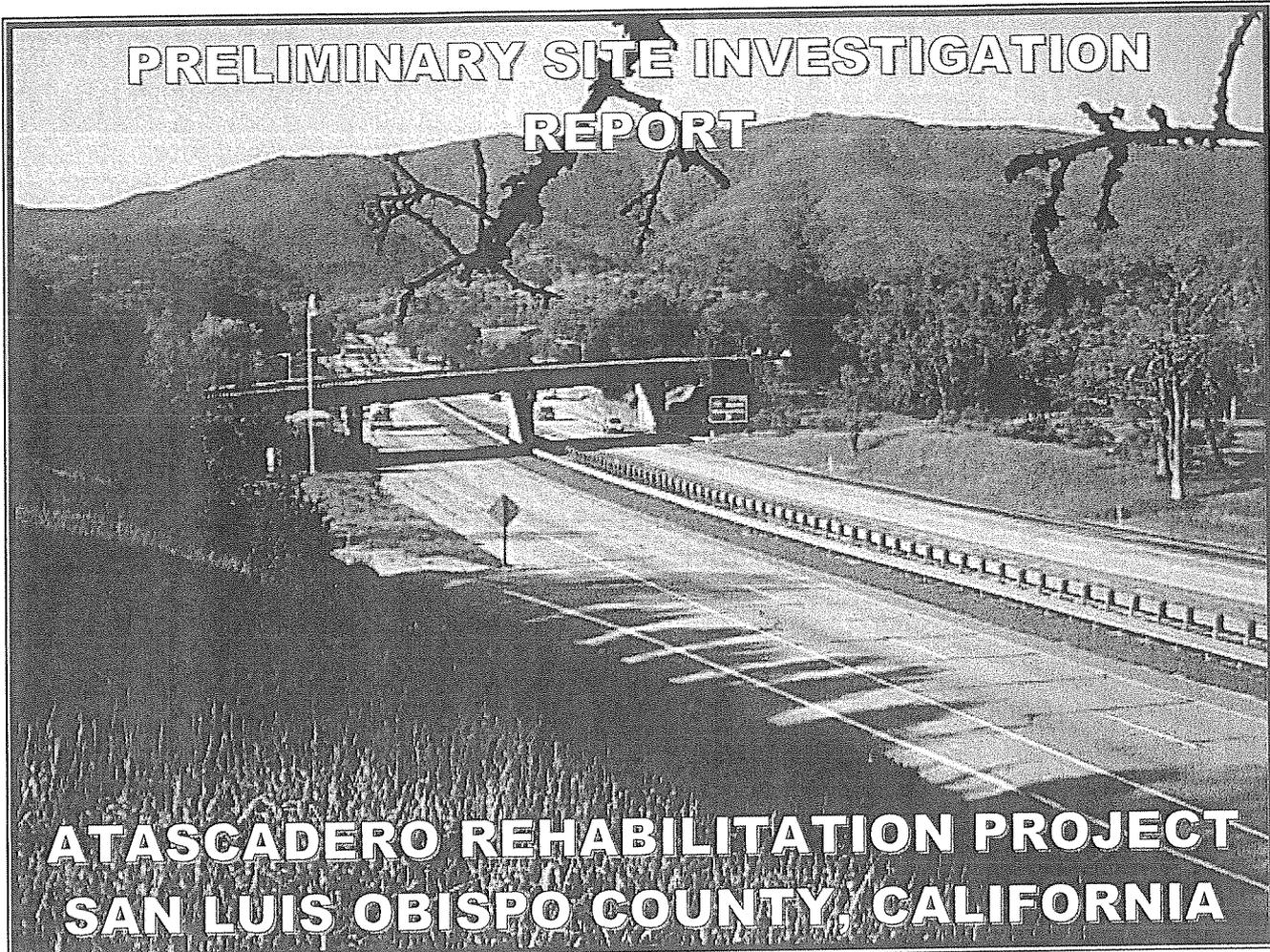
July 20, 2009

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Portions of Aerially Deposited Lead Site Investigation Report

Department of Transportation
Construction Office
Atoll Building
1150 Laurel Lane, Suite 175
San Luis Obispo, CA 93401

PRELIMINARY SITE INVESTIGATION REPORT



ATASCADERO REHABILITATION PROJECT SAN LUIS OBISPO COUNTY, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 5
50 HIGUERA STREET
SAN LUIS OBISPO, CALIFORNIA

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON PROJECT NO. S9200-06-69
CALTRANS EA 05-0G0300



GEOCON

MAY 2009



Project No. S9200-06-69
May 27, 2009

Mr. William Arkfeld
California Department of Transportation - District 5
50 Higuera Street
San Luis Obispo, California 93401

Subject: ATASCADERO REHABILITATION PROJECT (EA NO. 05-0G0300)
POST MILES 35.7 / 46.3
ATASCADERO, SAN LUIS OBISPO COUNTY, CALIFORNIA
CONTRACT NO. 06A1141, TASK ORDER NUMBER 69
PRELIMINARY SITE INVESTIGATION REPORT

Dear Mr. Arkfeld:

In accordance with California Department of Transportation (Caltrans) Contract No. 06A1141, Task Order Number 69, Geocon Consultants, Inc. has performed environmental engineering services for the subject project. The project area consists of the unpaved northbound and southbound shoulder areas of State Route 101 between Post Miles 35.7 and 46.3 in San Luis Obispo County, California. The accompanying report summarizes the services performed, including the advancement of hand-auger borings, soil sampling, and laboratory testing.

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

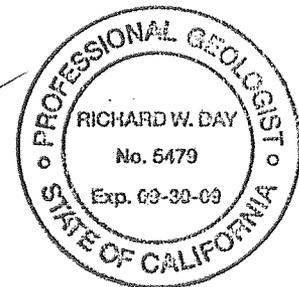
Please contact us if there are any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Lauren Vigliotti
Senior Staff Geologist

Richard Day, CEG, CHG
Vice President



LV:RD

(5 + 1 CD) Addressee

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- A total of 146 soil samples with total lead concentrations greater than or equal to 50 mg/kg (i.e. ten times the lead STLC of 5.0 mg/l) were further analyzed for soluble WET lead by EPA Test Method 6010B.
- A total of 70 soil samples with soluble WET lead concentrations greater than the STLC of 5.0 mg/l and total lead concentrations exceeding 100 mg/kg were further analyzed for soluble TCLP lead using EPA Test Method 1311.
- Ten soil samples with the highest reported soluble WET lead concentrations were further analyzed for soluble lead using de-ionized water as the extraction fluid (WET-DI) by EPA Test Method 7420.
- A total of 50 soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd) using EPA Test Method 8015M.
- A total of 50 soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Test Method 8021B.
- A total of 50 randomly selected soil samples for were analyzed for pH by EPA Test Method 9045.

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 the spike made at ten times the detection limit or at the analyte level.

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

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

5.1 Site Conditions

Soil encountered during the advancement of borings generally consisted of gravelly, silty sand to the maximum depth explored of approximately 1.5 feet. Groundwater was not encountered during the advancement of the soil borings.

5.2 Soil Analytical Results

The soil analytical results are presented in Tables 2 through 4 and are summarized as follows:

- Total lead was reported in the soil samples at concentrations ranging from 1.1 to 810 mg/kg.
- Soluble WET lead was reported in the 146 soil samples analyzed at concentrations ranging from less than (<) the laboratory reporting limit of 0.25 to 70 mg/l, with 83 soil samples exceeding the lead STLC of 5.0 mg/l.
- Soluble WET-DI lead was reported in the ten samples analyzed at concentrations ranging from <0.25 to 1.5 mg/l.
- Soluble TCLP lead was reported in the 70 samples analyzed at concentrations ranging from <0.25 to 3.8 mg/l.
- The following CAM17 metals were not detected above their respective laboratory reporting limits: antimony, beryllium, silver and thallium. Remaining CAM 17 metals were reported in the soil samples.
- TPHg and BTEX were not detected in the soil samples above their respective laboratory reporting limits
- TPHd was reported in the soil samples at concentrations ranging from <1.0 to 500 mg/kg.
- Soil pH values ranged from 4.0 to 8.6.

5.3 Laboratory Quality Assurance/Quality Control

We reviewed the analytical laboratory QA/QC data provided with the laboratory report. These data show acceptable non-detect results and surrogate recoveries for the method blanks and acceptable recoveries and relative percent differences (RPDs) for the matrix spikes and matrix spike duplicates (MS/MSDs), with some exceptions. Surrogate recoveries for several samples were outside criteria due to matrix interferences. The RPDs for several of the analyses were outside criteria, and a number of the samples required dilution. However, the laboratory report indicated that the analytical batches were validated by the Laboratory Control Sample (LCS).

Based on the laboratory QA/QC results, no additional qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

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 soluble lead concentrations exists that would allow the prediction of soluble lead concentrations based on calculated UCLs. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring*, by Richard Gilbert (1987); in an EPA *Technology Support Center Issue* document entitled, *The Lognormal*

Distribution in Environmental Applications, by Ashok Singh et. al., (December 1997); and in a book entitled *An Introduction to the Bootstrap*, by Bradley Efron and Robert J. Tibshirani (1993).

The lead data for the Site were treated as nine sample populations (i.e., Sample Groups) for statistical evaluation, and consisted of the following:

- Sample Group A: Borings NBHA1 to NBHA3, NBB4 to NBB16, NBHA17, NBB18, NBB19, NBHA20, and NBHA21 (Post Mile 35.8/37.7)
- Sample Group B: Borings NBB22, NBB23, NBB26 to NBB38, NBHA24, NBHA25, and NBRB9 to NBRB20 (PM 37.7/39.5)
- Sample Group C: Borings NBB39 to NBB83 (PM 39.5/43.0)
- Sample Group D: Borings NBB84 to NBB125 (PM 43.0/45.2)
- Sample Group E: Borings NBB126 to NBB138 (PM 45.7/46.3)
- Sample Group F: Borings SBB1 to SBB19 and SBRB21 to SBRB28 (PM 44.85/42.2, 45.7/46.3)
- Sample Group G: Borings SBB20 to SBB68 (PM 44.85/42.3)
- Sample Group H: Borings SBB69 to SBB85 (PM 42.3/41.1)
- Sample Group I: SBB86 to SBB136 and SBRB1 to SBRB8 (PM 41.1/35.8)

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 used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap*. For those samples in which total lead was not detected at concentrations exceeding the laboratory test method reporting limit (MRL), a value equal to one-half of the detection limit was used in the UCL calculation.

Due to the limited number of analytical results for soil samples collected from the 1.0 to 1.5 foot depth interval, UCLs could not be calculated. A sample set consisting of at least five unique values is required for calculation of UCLs. Therefore, where UCLs were not calculated, we conservatively used the maximum reported total lead concentration to estimate predicted soluble lead values for the 1.0 to 1.5 foot depth interval.

In addition to the computation of 90% and 95% UCLs, outlier tests were performed on the total lead results for the samples collected at the Site. The statistical tests indicated that the total lead analytical result of 810 mg/kg reported for sample NBB13-1.5 was determined to be an outlier relative to the total lead results for samples collected from the 1.0 to 1.5 foot depth interval. Therefore, the analytical results for this sample were not included in the calculation of predicted soluble WET lead concentrations.

The bootstrap results are included in Appendix B. The calculated UCLs and statistical results are summarized in the following tables.

**Sample Group A: Borings NBHA1 to NBHA3, NBB4 to NBB16,
NBHA17, NBB18, NBB19, NBHA20, and NBHA21 (Excluding outlier sample NBB13-1.5)**

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	93.1	99.2	71	2.5	260
0.5 to 1.0	153.8	170.3	102.2	2.5	810
1.0 to 1.5	Not Calculated	Not Calculated	23.5	6.6	43

**Sample Group B: Borings NBB22, NBB23, NBHA24, NBHA25,
NBB26 to NBB38, and NBRB9 to NBRB16**

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	61.6	64.6	52.2	2.5	170
0.5 to 1.0	19.1	20.6	12.7	1.3	87
1.0 to 1.5	Not Calculated	Not Calculated	5.6	1.5	14

Sample Group C: Borings NBB39 to NBB83

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	111.1	116.6	91.2	2.5	390
0.5 to 1.0	19.7	21.1	14.5	2.5	160
1.0 to 1.5	Not Calculated	Not Calculated	2.6	2.2	3.2

Sample Group D: Borings NBB84 to NBB125

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	40.2	42.7	32.2	1.5	230
0.5 to 1.0	9.4	10.1	6.9	2.3	70
1.0 to 1.5	Not Calculated	Not Calculated	1.2	1.1	1.3

Sample Group E: Borings NBB126 to NBB138 and NBRB17 to NBRB20

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	208.1	223.7	152	2.5	600
0.5 to 1.0	20.9	23.2	14.1	2.5	99

Sample Group F: Borings SBB1 to SBB19 and SBRB21 to SBRB28

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	174.2	182.6	151.2	2.5	430
0.5 to 1.0	19.8	21.3	18.4	0.5	99
1.0 to 1.5	Not Calculated	Not Calculated	2.6	1.9	3.3

Sample Group G: Borings SBB20 to SBB68

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	51.4	54.0	42.4	2.5	220
0.5 to 1.0	8.3	8.8	6.5	2.5	61
1.0 to 1.5	Not Calculated	Not Calculated	15	15	15

Sample Group H: Borings SBB69 to SBB85

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	173.9	186.1	130.6	2.5	430
0.5 to 1.0	16.9	18.3	12.5	2.5	45
1.0 to 1.5	Not Calculated	Not Calculated	3.8	1.9	5.6

Sample Group I: Borings SBB86 to SBB136 and SBRB1 to SBRB8

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	65.0	68.1	63.1	2.5	400
0.5 to 1.0	51.4	56.2	32.8	0.5	580
1.0 to 1.5	Not Calculated	Not Calculated	7.7	2.2	17

5.4.2 Correlation of Total and Soluble Lead

Total and corresponding soluble WET lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of soluble WET lead concentrations based on the maximum total lead concentrations and the UCLs calculated above in Section 5.4.1.

To estimate the degree of interrelation between total and corresponding soluble 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 146 (x , y) data points (i.e., soil samples analyzed for both total lead [x] and soluble WET lead [y]). The resulting *coefficient of determination* (r^2) equaled 0.647, which yields a corresponding *correlation coefficient* (r) of 0.805. To achieve a conservative correlation, the following samples were not included in the regression: NBHA3-1.0, NBB69-.5, SBB8-.5, SBB17-.5, SBB18-.5, and SBB128-1.0.

For the *correlation coefficient* that indicates a linear relationship between total and soluble 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 $y = 0.0637(x)$, where x represents total lead concentrations and y represents predicted soluble lead WET concentrations.

This equation was used to estimate the expected WET soluble lead concentrations for the maximum total lead concentrations and the UCLs calculated in for samples collected from the Site (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 B. The predicted soluble WET lead concentrations for the soil samples collected at the Site are summarized in Tables 5a through 5i.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal.

6.1 Predicted Soluble Lead

The following sections summarize the predicted soluble WET lead concentrations and the waste classification for excavated soil based on the calculated total lead UCLs and maximums, and the relationship between total and soluble WET lead for data collected at the Site. The hazardous waste classifications for each sample group are summarized graphically in Appendix A. The total and soluble WET lead calculations are presented in Appendix B and summarized in Tables 5a to 5i.

6.1.1 Sample Group A: Borings NBHA1 to NBHA3, NBB4 to NBB16, NBHA17, NBB18, NBB19, NBHA20, and NBHA21

The total and soluble WET lead calculations summarized in Table 5a.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	93	5.9	99	6.3	Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	98	6.3	107	6.8	<i>Hazardous</i>
0 to 1.0 ft	123	7.9	135	8.6	Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	43	2.7	43	2.7	<i>Non-Hazardous</i>
0 to 1.5 ft	97	6.2	104	6.6	Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.0 foot would be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are greater than the lead STLC of 5.0 mg/l. Consequently, the top 1.0 foot of soil should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

The total lead result for soil sample NBB13-1.5 was determined to be a statistical outlier and was removed from the above data set (see Section 5.4.1 and Appendix B). Soil at a depth of 1.5 feet in the vicinity of outlier sample NBB13-1.5 should be either 1) managed and disposed of as a California hazardous waste or 2) resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria.

Based on the soluble TCLP lead concentrations, soil will not be classified as a RCRA hazardous waste.

6.1.2 Sample Group B: Borings NBB22, NBB23, NBHA24, NBHA25, NBB26 to NBB38, NBRB9 to NBRB16

The total and soluble WET lead calculations are summarized in Table 5b.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	62	3.9	65	4.1	Non-Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>17</i>	<i>1.1</i>	<i>17</i>	<i>1.1</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	40	2.6	43	2.7	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>14</i>	<i>0.9</i>	<i>14</i>	<i>0.9</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	32	2.0	33	2.1	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.5 feet would be not be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are less than the lead STLC of 5.0 mg/l.

6.1.3 Sample Group C: Borings NBB39 to NBB83

The total and soluble WET lead calculations are summarized in Table 5c.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	111	7.1	117	7.4	Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>11</i>	<i>0.7</i>	<i>12</i>	<i>0.8</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	65	4.2	69	4.4	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>3.2</i>	<i>0.2</i>	<i>3.2</i>	<i>0.2</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	45	2.8	47	3.0	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 0.5 foot would be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentration is greater than the lead STLC of 5.0 mg/l. Consequently, the top 0.5 foot of soil should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be considered a hazardous waste based on lead content.

Based on the soluble TCLP lead concentrations, soil will not be classified as a RCRA hazardous waste.

If excavations are 1 foot or greater, and soil is managed as a whole, it would be considered non-hazardous based on lead content.

6.1.4 Sample Group D: Borings NBB84 to NBB125

The total and soluble WET lead calculations are summarized in Table 5d.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	40	2.6	43	2.7	Non-Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>5.4</i>	<i>0.3</i>	<i>5.7</i>	<i>0.4</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	25	1.6	26	1.7	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>1.3</i>	<i>0.08</i>	<i>1.3</i>	<i>0.08</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	17	1.1	18	1.1	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.5 feet would not be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are less than the lead STLC of 5.0 mg/l.

6.1.5 Sample Group E: Borings NBB126 to NBB138 and NBRB17 to NBRB20

The total and soluble WET lead calculations are summarized in Table 5e.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	208	13	224	14	Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	21	1.3	22	1.5	<i>Non-Hazardous</i>
0 to 1.0 ft	114	7.3	123	7.9	Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 0.5 foot would be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentration is greater than the lead STLC of 5.0 mg/l. Consequently, the top 0.5 foot of soil should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be considered a hazardous waste based on lead content. Additionally, if excavated as a whole, soil from the surface to a depth of 1.0 foot should be managed as California hazardous waste or resampled to confirm waste classification.

Based on the soluble TCLP lead concentrations, soil will not be classified as a RCRA hazardous waste.

6.1.6 Sample Group F: Borings SBB1 to SBB19 and SBRB21 to SBRB28

The total and soluble WET lead calculations are summarized in Table 5f.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	174	11	183	12	Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	12	0.7	12	0.8	<i>Non-Hazardous</i>
0 to 1.0 ft	97	6.2	102	6.5	Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	3.3	0.2	3.3	0.2	<i>Non-Hazardous</i>
0 to 1.5 ft	66	4.2	69	4.4	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.0 foot would be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are greater than the lead STLC of 5.0 mg/l. Consequently, the top 1.0 foot of soil should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be considered a hazardous waste based on lead content.

Based on the soluble TCLP lead concentrations, soil will not be classified as a RCRA hazardous waste.

If soil excavations are 1.5 feet or greater, and managed as a whole, soil would be considered non-hazardous based on lead content.

6.1.7 Sample Group G: Borings SBB20 to SBB68

The total and soluble WET lead calculations are summarized in Table 5g.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	51	3.3	54	3.4	Non-Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>12</i>	<i>0.7</i>	<i>12</i>	<i>0.8</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	30	1.9	31	2.0	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>15</i>	<i>1.0</i>	<i>15</i>	<i>1.0</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	25	1.6	26	1.7	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.5 feet would be not be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are less than the lead STLC of 5.0 mg/l.

6.1.8 Sample Group H: Borings SBB69 to SBB85

The total and soluble WET lead calculations are summarized in Table 5h.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	174	11	186	12	Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>11</i>	<i>0.7</i>	<i>12</i>	<i>0.8</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	95	6.1	102	6.5	Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>5.6</i>	<i>0.4</i>	<i>5.6</i>	<i>0.4</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	65	4.2	70	4.5	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.0 foot would be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are greater than the lead STLC of 5.0 mg/l. Consequently, the top 1.0 foot of soil should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be considered a hazardous waste based on lead content.

Based on the soluble TCLP lead concentrations, soil will not be classified as a RCRA hazardous waste.

If soil excavations are 1.5 feet or greater, and managed as a whole, soil would be considered non-hazardous based on lead content.

6.1.9 Sample Group I: Borings SBB86 to SBB136 and SBRB1 to SBRB8

The total and soluble WET lead calculations are summarized in Table 5i.

Excavation Depth	90% UCL/Maximum		95% UCL/Maximum		Waste Classification
	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Total Lead (mg/kg)	Predicted WET Lead (mg/l)	
0 to 0.5 ft	65	4.1	68	4.3	Non-Hazardous
<i>Underlying soil (0.5 to 1.5 ft)</i>	<i>34</i>	<i>2.2</i>	<i>37</i>	<i>2.3</i>	<i>Non-Hazardous</i>
0 to 1.0 ft	58	3.7	62	4.0	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>17</i>	<i>1.1</i>	<i>17</i>	<i>1.1</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	44	2.8	47	3.0	Non-Hazardous

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

Based on the data presented in the table above, soil excavated from the surface to a depth of 1.5 feet would be not be classified as a California hazardous waste, since the 90% UCL-predicted soluble (WET) lead concentrations are less than the lead STLC of 5.0 mg/l.

6.2 CAM 17 Metals

Based on the total CAM17 metals concentrations, with the exception of lead, soil excavated from the Site would not be considered a hazardous waste.

The CAM17 metals concentrations in soil were compared to ESLs (SFRWQCB, May 2008, Table A) and with published background levels typically found in California soils as presented in *Background Concentrations of Trace and Major Elements in California Soils* (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996). Reported arsenic concentrations were between <1.0 and 4.7 mg/kg, exceeding the residential land use ESL of 0.39 mg/kg and the commercial/industrial land use ESL of 1.6 mg/kg for shallow soil (≤ 3 meters; SFRWQCB, Table A). Cadmium was reported above the laboratory reporting limit of 1.0 mg/kg in two samples at concentrations of 2.0 and 4.7 mg/kg, which exceeds the residential land use ESL of 4.0 mg/kg. In addition, vanadium was detected in the soil samples at concentrations between 2.7 and 52 mg/kg, exceeding the residential land use ESL of 16 mg/kg for shallow soil.

The calculated 95% UCLs and maximum concentration for arsenic and vanadium, ESLs, and published background concentrations are summarized in the table below:

Metal	95%UCL	Maximum	Residential ESL	Commercial/ Industrial ESL	PUBLISHED BACKGROUND MEAN ¹	PUBLISHED BACKGROUND RANGE ¹
Arsenic	4.6	16	0.39	1.6	3.5	0.6 to 11.0
Vanadium	25	74	16	200	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg); ¹ Kearney Foundation of Soil Science, March 1996

The 95% UCL and maximum reported concentration of arsenic for soil samples collected at the Site are greater than the ESLs. The calculated 95%UCL is within the published background concentration 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 (e.g., Kearney Foundation of Soil Science, 1996).

The 95% UCL and maximum reported vanadium concentration in the soil samples collected at the Site are greater than the residential land use ESL, however are less than both the commercial/industrial land use ESL and published background mean concentration.

Based on the reported arsenic and vanadium concentrations, and comparisons to ESLs and the published background concentrations, offsite reuse or disposal of soil may be restricted based on metals content, depending on proposed use. Additional soil sampling may be required based if soil is removed from the project site and not placed in a permitted disposal facility.

6.3 Petroleum Hydrocarbon Compounds

Four out of 43 samples had reported concentrations of TPHd greater than the residential and commercial/industrial land use ESL of 83 mg/kg, with a maximum reported concentration of 500 mg/kg (NBB34-5). The calculated 95% UCL TPHd concentration for the site data equaled 72.9 mg/kg, which is less than the ESL values for shallow soil (SFRWQCB, Table A).

Based on the maximum reported TPHd concentration that exceeded the ESLs, offsite reuse or disposal of soil may be restricted, depending on proposed use. Additional soil sampling may be required based if soil is removed from the project site and not placed in a permitted disposal facility.

6.4 Worker Protection

Per Caltrans' requirements, the contractor(s) should prepare a project-specific lead compliance plan (CCR Title 8, Section 1532.1, the "Lead in Construction" standard) to minimize worker exposure to lead-impacted 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 lead-impacted soil.

7.0 REPORT LIMITATIONS

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

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

TABLE 3
SUMMARY OF CAM17 METALS RESULTS
ATASCADERO REHABILITATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
NBHA3-1.0	1.0	<2.0	2.1	53	<1.0	<1.0	11	3.6	21	810	<1.0	15	<1.0	<1.0	<1.0	23	110	<0.10
NBB8-1.5	1.5	<2.0	1.6	28	<1.0	<1.0	8.9	3.1	8.4	21	1.6	12	<1.0	<1.0	<1.0	15	97	<0.10
NBB13-.5	0.5	<2.0	<1.0	18	<1.0	<1.0	2.7	<1.0	2.8	9.7	2.2	2.0	<1.0	<1.0	<1.0	3.6	21	<0.10
NBB18-1.0	1.0	<2.0	4.3	67	<1.0	<1.0	21	8.9	18	4.5	<1.0	14	<1.0	<1.0	<1.0	47	55	<0.10
NBB22-1.5	1.5	<2.0	<1.0	39	<1.0	<1.0	4.5	4.3	4.1	1.5	<1.0	3.9	<1.0	<1.0	<1.0	29	49	<0.10
NBHA25-.5	0.5	<2.0	1.3	48	<1.0	<1.0	15	4.6	8.3	77	<1.0	27	<1.0	<1.0	<1.0	25	99	<0.10
NBB29-1.0	1.0	<2.0	<1.0	39	<1.0	<1.0	3.1	4.5	3.3	1.3	<1.0	2.5	<1.0	<1.0	<1.0	34	50	<0.10
NBB34-.5	0.5	<2.0	1.7	60	<1.0	<1.0	11	6.3	8.6	25	<1.0	18	<1.0	<1.0	<1.0	41	55	<0.10
NBB37-.5	0.5	<2.0	1.3	47	<1.0	<1.0	11	4.6	10	140	<1.0	10	<1.0	<1.0	<1.0	35	44	<0.10
NBB42-1.0	1.0	<2.0	<1.0	51	<1.0	<1.0	6.0	2.3	8.1	160	<1.0	9.8	<1.0	<1.0	<1.0	16	58	<0.10
NBB46-1.0	1.0	<2.0	<1.0	27	<1.0	<1.0	2.5	3.8	3.4	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	28	43	<0.10
NBB52-1.5	1.5	<2.0	<1.0	3.4	<1.0	<1.0	1.6	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	3.1	<0.10
NBB57-1.5	1.5	<2.0	1.6	48	<1.0	<1.0	6.5	1.3	3.7	2.2	<1.0	6.1	<1.0	<1.0	<1.0	7.9	11	<0.10
NBB61-0.5	0.5	<2.0	<1.0	19	<1.0	<1.0	2.4	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	3.7	<0.10
NBB73-1.5	1.5	<2.0	1.2	13	<1.0	<1.0	1.7	3.1	7.1	3.2	<1.0	1.5	<1.0	<1.0	<1.0	16	35	<0.10

TABLE 3

SUMMARY OF CAM17 METALS RESULTS
ATASCADERO REHABILITATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
NBB81-1.0	1.0	<2.0	1.0	44	<1.0	<1.0	2.5	<1.0	<2.0	4.2	<1.0	1.6	<1.0	<1.0	<1.0	5.9	11	<0.10
NBB89-1.5	1.5	<2.0	<1.0	30	<1.0	<1.0	2.9	<1.0	<2.0	1.3	<1.0	1.5	<1.0	<1.0	<1.0	3.3	6.4	<0.10
NBB96-0.5	0.5	<2.0	1.2	56	<1.0	<1.0	5.0	1.8	7.7	27	<1.0	5.7	<1.0	<1.0	<1.0	12	58	<0.10
NBB106-1.0	1.0	<2.0	<1.0	42	<1.0	<1.0	2.5	<1.0	<2.0	2.3	<1.0	1.2	<1.0	<1.0	<1.0	3.0	5.6	<0.10
NBB114-1.5	1.5	<2.0	<1.0	29	<1.0	<1.0	2.8	1.1	<2.0	1.1	<1.0	2.1	<1.0	<1.0	<1.0	4.2	6.9	<0.10
NBB122-5	0.5	<2.0	4.6	83	<1.0	5.7	10	1.4	7.6	1.5	3.1	9.7	<1.0	<1.0	<1.0	13	25	<0.10
NBB130-1.0	1.0	<2.0	5.6	71	<1.0	2.3	7.0	<1.0	4.3	7.0	<1.0	5.5	<1.0	<1.0	<1.0	7.5	16	<0.10
SBB4-5	0.5	<2.0	6.4	46	<1.0	4.2	8.8	2.1	8.6	96	1.7	11	<1.0	<1.0	<1.0	16	59	<0.10
SBB9-1.5	1.5	<2.0	11	36	<1.0	8.4	13	2.3	9.9	1.9	12	19	2.5	<1.0	<1.0	13	45	<0.10
SBB17-1.0	1.0	<2.0	2.2	120	<1.0	1.2	9.4	<1.0	6.2	<1.0	<1.0	4.1	<1.0	<1.0	<1.0	11	14	<0.10
SBB25-5	0.5	<2.0	1.6	51	<1.0	<1.0	4.1	<1.0	2.3	2.5	<1.0	2.0	<1.0	<1.0	<1.0	7.0	12	<0.10
SBB33-1.5	1.5	<2.0	<1.0	90	<1.0	<1.0	5.6	<1.0	<2.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	13	3.5	<0.10
SBB41-5	0.5	<2.0	1.3	22	<1.0	<1.0	6.1	1.0	4.0	14	<1.0	2.5	<1.0	<1.0	<1.0	5.2	31	<0.10
SBB49-1.0	1.0	<2.0	1.8	34	<1.0	<1.0	4.7	<1.0	<2.0	3.1	<1.0	1.9	<1.0	<1.0	<1.0	4.9	4.5	0.11
SBB57-1.5	1.5	<2.0	2.7	42	<1.0	5.6	15	1.4	6.4	15	<1.0	7.7	<1.0	<1.0	<1.0	13	36	<0.10

TABLE 3
SUMMARY OF CAM17 METALS RESULTS
ATASCADERO REHABILITATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
SBB69-1.5	1.5	<2.0	8.9	43	<1.0	5.5	14	1.9	7.0	1.9	4.7	10	<1.0	<1.0	<1.0	14	32	<0.10
SBB78-1.5	1.5	<2.0	4.9	110	<1.0	3.1	27	10	19	5.6	<1.0	53	<1.0	<1.0	<1.0	29	45	<0.10
SBB83-.5	0.5	<2.0	<1.0	42	<1.0	<1.0	5.0	<1.0	6.7	95	<1.0	5.3	<1.0	<1.0	<1.0	5.5	55	<0.10
SBB87-1.0	1.0	<2.0	1.3	95	<1.0	<1.0	2.6	<1.0	<2.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	3.3	5.0	<0.10
SBB92-1.5	1.5	<2.0	<1.0	21	<1.0	<1.0	5.6	<1.0	<2.0	2.2	<1.0	3.7	<1.0	<1.0	<1.0	3.3	5.8	<0.10
SBB97-1.5	1.5	<2.0	14	100	<1.0	<1.0	27	9.7	29	17	<1.0	28	<1.0	<1.0	<1.0	34	75	<0.10
SBB103-.5	0.5	<2.0	16	210	<1.0	<1.0	33	12	29	18	<1.0	37	1.0	<1.0	<1.0	33	83	<0.10
SBB106-1.5	1.5	<2.0	11	200	<1.0	<1.0	47	13	29	16	<1.0	55	<1.0	<1.0	<1.0	39	2,400	<0.10
SBB111-1.0	1.0	<2.0	14	150	<1.0	<1.0	35	11	31	17	<1.0	37	<1.0	<1.0	<1.0	43	76	<0.10
SBB115-1.5	1.5	<2.0	2.3	75	<1.0	<1.0	14	6.7	9.0	2.8	<1.0	8.3	<1.0	<1.0	<1.0	40	50	<0.10
SBB120-1.0	1.0	<2.0	1.1	36	<1.0	<1.0	3.2	4.0	4.2	29	<1.0	2.9	<1.0	<1.0	<1.0	27	47	<0.10
SBB128-1.5	1.5	<2.0	2.5	94	<1.0	<1.0	150	32	32	3.1	<1.0	270	1.2	<1.0	<1.0	42	46	<0.10
SBB133-.5	0.5	<2.0	1.4	44	<1.0	<1.0	9.5	4.0	11	120	<1.0	14	<1.0	<1.0	<1.0	29	65	<0.10
SBRB3-1.5	1.5	<2.0	2.5	58	<1.0	<1.0	10	6.0	4.0	5.2	<1.0	5.3	<1.0	<1.0	<1.0	33	60	<0.10

TABLE 3

SUMMARY OF CAM17 METALS RESULTS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
SBRB7-1.0	1.0	<2.0	3.2	73	<1.0	<1.0	22	10	11	4.5	<1.0	12	<1.0	<1.0	<1.0	56	73	<0.10
NBRB10-5	0.5	<2.0	2.9	83	<1.0	<1.0	21	8.4	12	28	<1.0	19	<1.0	<1.0	<1.0	44	61	<0.10
NBRB15-1.5	1.5	<2.0	5.9	75	<1.0	<1.0	30	15	20	4.3	<1.0	18	<1.0	<1.0	<1.0	74	77	<0.10
NBRB19-1.0	1.0	<2.0	7.2	48	<1.0	4.0	6.0	1.0	6.7	14	3.1	5.7	1.3	<1.0	<1.0	7.0	41	<0.10
SBRB23-1.5	1.5	<2.0	16	83	<1.0	6.7	24	4.9	17	3.3	2.6	34	<1.0	<1.0	<1.0	30	49	<0.10
SBRB28-5	0.5	<2.0	4.1	40	<1.0	2.3	6.7	1.2	6.4	130	1.7	5.5	<1.0	<1.0	<1.0	8.4	53	<0.10

ESLs

Shallow Soils (≤3 m bgs)

Residential Land Use	6.3	0.39	750	4.0	1.7	750*	40	230	200	40	150	10	20	1.3	16	600	1.3
Comm/Ind Land Use	40	1.6	1,500	8.0	7.4	750*	80	230	750	40	150	10	40	16	200	600	10

Notes:

Results are shown in milligrams per kilogram (mg/kg)

Results in italics are soluble metal concentrations analyzed using the Waste Extraction Test (WET), shown in units of milligrams per liter (mg/l), with the exception of mercury results, which are presented in micrograms per liter (ug/l).

< = Analyte was not detected above the laboratory reporting limit

ESLs = Environmental Screening Levels, Table A Groundwater is Current/Potential Source of Drinking Water, SFRWQCB, Revised May 2008.

* = Value is for Chromium III, no standard for total chromium

TABLE 4
SUMMARY OF PETROLEUM HYDROCARBON COMPOUND RESULTS
ATASCADERO REHABILITATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	TPHg (mg/kg)	TPHd (mg/kg)	BTEX (ug/kg)
NBHA3-1.0	1	<1.0	140	ND
NBB8-1.5	1.5	<1.0	120	ND
NBB13-.5	0.5	<1.0	220	ND
NBB18-1.0	1.0	<1.0	22	ND
NBB22-1.5	1.5	<1.0	59	ND
NBHA25-.5	0.5	<1.0	91	ND
NBB29-1.0	1.0	<1.0	1.4	ND
NBB34-.5	0.5	<1.0	500	ND
NBB37-.5	0.5	<1.0	67	ND
NBB42-1.0	1.0	<1.0	5.1	ND
NBB46-1.0	1.0	<1.0	2.3	ND
NBB52-1.5	1.5	<1.0	1.8	ND
NBB57-1.5	1.5	<1.0	<1.0	ND
NBB61-0.5	0.5	<1.0	16	ND
NBB73-1.5	1.5	<1.0	<1.0	ND
NBB81-1.0	1.0	<1.0	20	ND
NBB89-1.5	1.5	<1.0	7.0	ND
NBB96-0.5	0.5	<1.0	27	ND
NBB106-1.0	1.0	<1.0	12	ND
NBB114-1.5	1.5	<1.0	2.1	ND
NBB122-0.5	0.5	<1.0	5.5	ND
NBB130-1.0	1.0	<1.0	4.6	ND
SBB4-.5	0.5	<1.0	97	ND
SBB9-1.5	1.5	<1.0	19	ND
SBB17-1.0	1	<1.0	1.7	ND
SBB25-.5	0.5	<1.0	13	ND

TABLE 4
SUMMARY OF PETROLEUM HYDROCARBON COMPOUND RESULTS
ATASCADERO REHABILITATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample ID	Sample Depth (ft)	TPHg (mg/kg)	TPHd (mg/kg)	BTEX (ug/kg)
SBB33-1.5	1.5	<1.0	<1.0	ND
SBB41-1.5	0.5	<1.0	10	ND
SBB49-1.0	1	<1.0	<1.0	ND
SBB57-1.5	1.5	<1.0	1.9	ND
SBB69-1.5	1.5	<1.0	4.8	ND
SBB78-1.5	1.5	<1.0	3.2	ND
SBB83-0.5	0.5	<1.0	20	ND
SBB87-1.0	1.0	<1.0	6.6	ND
SBB92-1.5	1.5	<1.0	6.7	ND
SBB97-1.5	1.5	<1.0	1.9	ND
SBB103-0.5	0.5	<1.0	3.8	ND
SBB106-1.5	1.5	<1.0	1.6	ND
SBB111-1.0	1.0	<1.0	1.7	ND
SBB115-1.5	1.5	<1.0	1.7	ND
SBB120-1.0	1.0	<1.0	60	ND
SBB128-1.5	1.5	<1.0	7.0	ND
SBB133-.5	0.5	<1.0	450	ND
ESLs				
Shallow Soils (≤3 m bgs)				
	Residential	83	83	---
	Commercial/Industrial	83	83	---

Notes:

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

MTBE = Methyl-tert-butyl ether

ND = Not Detected above laboratory reporting limit

--- = Not Analyzed or Not Applicable

< = Not detected above the stated laboratory reporting limit

ESLs = Environmental Screening Levels, Table A, SFRWQCB, Revised May 2008.

TABLE 5a
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA
 Sample Group A: Borings NBH1A1 to NBH1A3, NBB4 to NBB16, NBH17, NBB18, NBB19, NBH20, and NBH21
 (Post Mile 35.8/37.7; excluding statistical outlier sample NBB13-1.5)

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	95% UCL
0 to 0.5 feet	93.1	99.2
0.5 to 1.0 feet	153.8	170.3
1.0 to 1.5 feet	Maximum 43	

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	93	5.9	99	6.3
<i>Underlying Soil (0.5 to 1.5 feet)</i>	98	6.3	107	6.8
0 to 1.0 foot	123	7.9	135	8.6
<i>Underlying Soil (1.0 to 1.5 feet)</i>	43	2.7	43	2.7
0 to 1.5 feet	97	6.2	104	6.6

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,
 where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5b
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group B: Borings NBB22, NBB23, NBHA24, NBHA25, NBB26 to NBB38,
 and NBRB9 to NBRB16 (Post Mile 37.7/39.5)

TOTAL LEAD UCLs

	90% UCL	Total Lead (mg/kg)	95% UCL
0 to 0.5 feet	61.6		64.6
0.5 to 1.0 feet	19.1		20.6
1.0 to 1.5 feet	Maximum 14		

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.5 foot <i>Underlying Soil (0.5 to 1.5 feet)</i>	62 17	3.9 1.1	65 17	4.1 1.1
0 to 1.0 foot <i>Underlying Soil (1.0 to 1.5 feet)</i>	40 14	2.6 0.9	43 14	2.7 0.9
0 to 1.5 feet	32	2.0	33	2.1

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,
 where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5c
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group C: Borings NBB39 to NBB83 (Post Mile 39.5/43.0)

TOTAL LEAD UCLs

	90% UCL	Total Lead (mg/kg)	95% UCL
0 to 0.5 feet	111.1		116.6
0.5 to 1.0 feet	19.7		21.1
1.0 to 1.5 feet	Maximum 3.2		

EXCAVATION SCENARIOS

Excavation Depth	Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	95% UCL Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	111	7.1	117	7.4
<i>Underlying Soil (0.5 to 1.5 feet)</i>	<i>11</i>	<i>0.7</i>	<i>12</i>	<i>0.8</i>
0 to 1.0 foot	65	4.2	69	4.4
<i>Underlying Soil (1.0 to 1.5 feet)</i>	<i>3.2</i>	<i>0.2</i>	<i>3.2</i>	<i>0.2</i>
0 to 1.5 feet	45	2.8	47	3.0

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,

where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5d
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group D: Borings NBB84 to NBB125 (Post Mile 43.0/45.2)

TOTAL LEAD UCLs

	90% UCL	Total Lead (mg/kg)	95% UCL
0 to 0.5 feet	40.2		42.7
0.5 to 1.0 feet	9.4		10.1
1.0 to 1.5 feet	Maximum 1.3		

EXCAVATION SCENARIOS

Excavation Depth	Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	95% UCL Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	40	2.6	43	2.7
<i>Underlying Soil (0.5 to 1.5 feet)</i>	<i>5.4</i>	<i>0.3</i>	<i>5.7</i>	<i>0.4</i>
0 to 1.0 foot	25	1.6	26	1.7
<i>Underlying Soil (1.0 to 1.5 feet)</i>	<i>1.3</i>	<i>0.08</i>	<i>1.3</i>	<i>0.08</i>
0 to 1.5 feet	17	1.1	18	1.1

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,
 where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5c
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group E: Borings NBB126 to NBB138 and NBRB17 to NBRB20 (Post Mile 45.7/46.3)

TOTAL LEAD UCLs

	Total Lead (mg/kg)		
	90% UCL	95% UCL	95% UCL
0 to 0.5 feet	208.1	223.7	223.7
0.5 to 1.0 feet	20.9	23.2	23.2

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	208	13	224	14
<i>Underlying Soil (0.5 to 1.0 foot)</i>	21	1.3	23	1.5
0 to 1.0 foot	114	7.3	123	7.9

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line, where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5f
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group F: Borings SBB1 to SBB19 and SBRB21 to SBRB28
 (Post Mile PM 44.85/42.2, 45.7/46.3)

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	95% UCL
0 to 0.5 feet	174.2	182.6
0.5 to 1.0 feet	19.8	21.3
1.0 to 1.5 feet	Maximum 3.3	

EXCAVATION SCENARIOS

Excavation Depth	Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	95% UCL Soluble (WET) Lead* (mg/l)
0 to 0.5 foot <i>Underlying Soil (0.5 to 1.5 feet)</i>	174 12	11 0.7	183 12	12 0.8
0 to 1.0 foot <i>Underlying Soil (1.0 to 1.5 feet)</i>	97 3.3	6.2 0.2	102 3.3	6.5 0.2
0 to 1.5 feet	66	4.2	69	4.4

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,
 where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5g
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group G: Borings SBB20 to SBB68 (Post Mile 44.85/42.3)

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	95% UCL
0 to 0.5 feet	51.4	54.0
0.5 to 1.0 feet	8.3	8.8
1.0 to 1.5 feet	Maximum	
	15	

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	51	3.3	54	3.4
<i>Underlying Soil (0.5 to 1.5 feet)</i>	12	0.7	12	0.8
0 to 1.0 foot	30	1.9	31	2.0
<i>Underlying Soil (1.0 to 1.5 feet)</i>	15	1.0	15	1.0
0 to 1.5 feet	25	1.6	26	1.7

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,

where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5h
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group II: Borings SBB69 to SBB85 (Post Mile 42.3/41.1)

TOTAL LEAD UCLs

	90% UCL	Total Lead (mg/kg)	95% UCL
0 to 0.5 feet	173.9	186.1	186.1
0.5 to 1.0 feet	16.9	18.3	18.3
1.0 to 1.5 feet	Maximum		
	5.6		

EXCAVATION SCENARIOS

Excavation Depth	Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	95% UCL Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	174	11	186	12
<i>Underlying Soil (0.5 to 1.5 feet)</i>	<i>11</i>	<i>0.7</i>	<i>12</i>	<i>0.8</i>
0 to 1.0 foot	95	6.1	102	6.5
<i>Underlying Soil (1.0 to 1.5 feet)</i>	<i>5.6</i>	<i>0.4</i>	<i>5.6</i>	<i>0.4</i>
0 to 1.5 feet	65	4.2	70	4.5

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,

where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

TABLE 5i
 SUMMARY OF LEAD STATISTICAL ANALYSIS
 ATASCADERO REHABILITATION PROJECT
 SAN LUIS OBISPO COUNTY, CALIFORNIA

Sample Group I: Borings SBB86 to SBB136 and SBRB1 to SBRB8 (Post Mile 41.1/35.8)

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	95% UCL
0 to 0.5 feet	65.0	68.1
0.5 to 1.0 feet	51.4	56.2
1.0 to 1.5 feet	Maximum 17	

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.5 foot	65	4.1	68	4.3
<i>Underlying Soil (0.5 to 1.5 feet)</i>	34	2.2	37	2.3
0 to 1.0 foot	58	3.7	62	4.0
<i>Underlying Soil (1.0 to 1.5 feet)</i>	17	1.1	17	1.1
0 to 1.5 feet	44	2.8	47	3.0

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

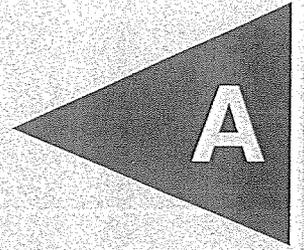
mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,

where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0637 x$

APPENDIX



APPENDIX A

Hazardous Waste Classification
Atascadero Rehabilitation Project

Sample Group	A	B	C	D	E	F	G	H	I
Excavation Depth (feet)									
0 to 0.5	5.9	3.9	7.1	2.6	13	11	3.3	11	4.1
0 to 1	7.9	2.6	4.2	1.6	7.3	6.2	1.9	6.1	3.7
0 to 1.5	6.2	2.0	2.8	1.1	---	4.2	1.6	4.2	2.8

California Hazardous

Non-Hazardous

Values indicate predicted WET lead concentration in milligrams per liter, based on calculated 90% Upper Confidence Limit (UCL) total lead concentrations for 0-0.5 ft and 0.5-1.0 ft depth intervals, and maximum reported total lead concentrations for 1.0-1.5 ft depth interval.

	Post Mile	NB/SB	Borings
A =	35.8/37.7	NB	NBHA1 to NBHA3, NBB4 to NBB16, NBHA17, NBB18, NBB19, NBHA20, and NBHA21
B =	37.7/39.5	NB	NBB22, NBB23, NBHA24, NBHA25, NBB26 to NBB38, and NBB39 to NBB83
C =	39.5/43.0	NB	NBB84 to NBB125
D =	43.0/45.2	NB	NBB126 to NBB138 and NBB17 to NBB20
E =	45.7/46.3	NB	SBB1 to SBB19 and SBB21 to SBB28
F =	44.85/42.2 45.7/46.3	SB	SBB20 to SBB68
G =	44.85/42.3	SB	SBB69 to SBB85
H =	41.1/42.3	SB	SBB86 to SBB136 and SBB1 to SBB88
I =	35.8/41.1	SB	

Memorandum

*Flex your power!**Be energy efficient!*

To: DAN T. ADAMS
Branch Chief
Division of Engineering Services, Structure Design
Office of Bridge Design – Central, Branch 10

Date: May 26, 2009

File: 05-SLO-101-37.99
05-0G0301
Santa Margarita Creek Br.
(Widen)
Bridge No. 49-0153L

From: **DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5**

Subject: Foundation Report

A Foundation Report (FR) is provided for the above referenced project per your request dated May 5th 2009, and subsequently revised on May 18th 2009. This report is based on a review of the As-built General Plans, Foundation Plans, Foundation Reports, and Logs of Test Borings (LOTB) for construction of the 1954 Santa Margarita Creek Bridge (No. 49-153R/L), and the 1996 replacement of the right bridge (No. 49-153R). The Report and Map, "Basic Geology of the Santa Margarita Area" by Earl W. Hart (1976), was used to aid in the characterization of the site conditions. A site review was conducted on August 13th 2004.

Proposed Improvements

The existing Santa Margarita Creek Bridge (No. 49-0153L) is approximately 170 feet long. It is a four-span bridge consisting of reinforced concrete continuous T beams supported on reinforced concrete column bents and open-end diaphragm reinforced concrete seat type abutments. The columns have been retrofitted and infill walls have been added. All support locations are founded on driven, 45-ton design load, BP 10X12 steel H-piles. The single span right structure is supported on 70-ton design load HP 10X57 driven piles. The foundation report indicates that the piles were estimated to penetrate 1 to 2 feet into the sandstone and shale rock that was encountered by the foundation investigation. The lower portions of the channel side slopes have been lined with concrete. Proposed improvements at this location include widening the existing bridge, as shown on the General Plan dated April 29th 2009. The widening will be toward the outside shoulder.

Physical Setting

The project is located within the Coast Ranges Geomorphic Province. It lies at the southern margin of the Salinas River Valley, between the Santa Lucia Range and the Cholame Hills. The bridge crosses the incised channel of Santa Margarita Creek, a tributary of the Salinas River. In the immediate vicinity of the project, the terrain is flat to gently sloping. Rangeland surrounds the site. The surface elevation in the vicinity of the bridge is between approximately 1022 feet and 1046 feet.

Geology and Soil Conditions

The near surface geotechnical conditions consist of a thin veneer of soil and weathered rock overlying Upper Cretaceous Atascadero Formation bedrock. Hart describes the Atascadero Formation as a thin to thick-bedded sandstone with interbedded siltstone, mudstone and minor amounts of conglomerate and impure limestone. The material exposed in adjacent cut slopes is predominately sandstone. According to Hart, the bedding is massive to laminated, with occasional large-scale cross-bedding. The geologic map indicates that the bedding in the project vicinity strikes north-northwest and dips approximately 44 degrees to the southwest. The sandstone is fine to very coarse grained and pebbly. Considering its composition, the rock may be best described as an arkose.

The 1954 field investigation for the design and construction of the existing bridge included four four-inch diameter auger borings and thirteen one-inch diameter hand-advanced soil probes. The deepest point reached by the borings was approximately 15 feet below the ground surface. In general, the subsurface material encountered were loose silty sand overlying fine to medium grained sandstone and shale. The top of rock in the vicinity of the existing left bridge is interpreted to lie between approximately elevation 1011 feet and 1042 feet.

Ground water

The 1954 foundation investigation report indicates that ground water was observed at approximately elevation 1023, the surface of the streambed. Soil moisture descriptors are not reported on the 1954 Log of Test Borings.

Seismic Data and Liquefaction Potential

The "Final Seismic Design Recommendations" were provided to you on May 26th 2009 by Ron Richman, Office of Geotechnical Design North. Data provided on the 1954 Log of Test Borings suggests that the soils found in the channel of Santa Margarita Creek are sufficiently loose to be potentially liquefiable, but may contain sufficient fine particles to

preclude liquefaction. For the purposes of the design of the bridge widening, the soils at this site are considered to have a low susceptibility to liquefaction.

Corrosion Testing

The November 16th 1993 Foundation Report for the replacement of the right bridge, does not address whether the foundation soils are considered corrosive to the bridge foundation elements. In light of the use of HP 10X57 piles for support of the 1996 structure, and that the scope of this project is a relatively modest widening of the 1956 structure, the foundations soils should be considered to be non-corrosive.

Foundation Recommendations

Driven piles are the recommended foundation type. HP 10 X 42 piles are proposed for abutment support, and HP 10 X 57 piles are proposed for all intermediate support locations. Analyses of the lateral resistances of the driven piles were not requested. Design tip elevations for lateral loads have not been provided in the following tables.

Abutment Foundation Design Recommendations									
Support	Pile	Cut-off Elevation (ft)	LRFD Service-I Limit State Load (kips) per Support		LRFD Service-I Limit State Total Load (kips) per Pile (Compression)	Nominal Resistance (kips)	Design Tip Elevations (feet)	Specified Tip Elevation (feet)	Nominal Driving Resistance Required (kips)
			Total	Permanent					
Abut. 1	HP 10X42	1051.5	146	88	48	100	1014 (a)	1014	100
Abut. 5	HP 10X42	1050.5	146	88	48	100	1028 (a)	1028	100

Notes:

- 1) *Design tip elevations are controlled by (a) Compression. There are no design tip elevations for settlement.*

Bent Foundation Design Recommendations

Support Location	Pile Type	Cut-off Elevation (feet)	Service I Limit State Load per Support (kips)	Total Permissible Support Settlement (inch)	Required Factored Nominal Resistance (kips)				Design Tip Elevations (feet)	Specified Tip Elevation (feet)	Nominal Driving Resistance Required (kips)
					Strength Limit		Extreme Event				
					Comp. ($\phi=0.7$)	Tension ($\phi=0.7$)	Comp. ($\phi=1$)	Tension ($\phi=1$)			
Pier 2	HP 10X57	1026.42	394	1.0	100	0	35	0	1010 (a-I) 1012 (a-II)	1010	150
Pier 3	HP 10X57	1015.42	423	1.0	100	0	42	0	1003 (a-I) 1005 (a-II)	1003	150
Pier 4	HP 10X57	1026.42	394	1.0	100	0	35	0	1014 (a-I) 1016 (a-II)	1014	150

Notes:

- 1) Design tip elevations are controlled by: (a-I) Compression (Strength Limit) and (a-II) Compression (Extreme Event), respectively. There are no design tip elevations for settlement.

Pile Data Table

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (feet)	Specified Tip Elevation (feet)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut. 1	HP 10X42	100	0	1014 (a)	1014	100
Pier 2	HP 10X57	150	0	1010 (a)	1010	150
Pier 3	HP 10X57	150	0	1003 (a)	1003	150
Pier 4	HP 10X57	150	0	1014 (a)	1014	150
Abut. 5	HP 10X42	100	0	1028 (a)	1028	100

Notes:

- 1) Design tip elevations for Abutments are controlled by (a) Compression.
- 2) Design tip elevations for Bents are controlled by (a) Compression.

The intention of these foundation recommendations is to drive all piles to rock.

Piles shall be driven in oversized drilled holes in conformance with the provisions in Section 49-1.06, "Predrilled Holes," of the Standard Specifications at the locations with the corresponding bottom of hole elevations listed in the following table:

Bridge Name or Number	Abutment Number	Pier Number	Elevation of Bottom of Hole
Santa Margarita Creek Br. (Br. No. 49-0153L)	1	-	1026 feet
Santa Margarita Creek Br. (Br. No. 49-0153L)	-	3	1005 feet
Santa Margarita Creek Br. (Br. No. 49-0153L)	-	4	1016 feet
Santa Margarita Creek Br. (Br. No. 49-0153L)	5	-	1040 feet

"Predrilled Holes" are not specified for the Pier 2 location.

Construction Considerations

The variable degree of weathering and variable elevation of the sandstone rock will influence the resistance to pile installation at all support locations. The contractor should use caution when driving the piles so as to not damage the piles. Driving shoes should be installed on all of the steel piles to prevent tip damage during installation.

The Office of Geotechnical Design North is to be contacted if the constructed pile tip elevation is above the specified tip elevation.

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in "pdf" format to the addressee of this report via electronic mail.

Data and information attached with the project plans are:

- A. Log of Test Borings for the Santa Margarita Creek Bridge Widen

Data and Information included in the Information Handout provided to the bidders and Contractors are:

- A. Foundation Report for the Santa Margarita Creek Bridge (Widen), May 26, 2009, Caltrans.

Data and information available for inspection at the District 5 Office:

- A. None

Data and information available for inspection at the Transportation Laboratory:

- A. None

Closure

A request for production of a Log-of-Test Boring sheet has been made to the Engineering Graphics Branch of the Office of Geotechnical Services. When complete, the As-Built Log-of-Test Borings will be provided to you for attachment to the contract plans.

If you have any questions or comments, please call me at (805) 549-3385 (CalNet 629-3385).



RON RICHMAN, P.E., C.E.G.
Office of Geotechnical Design – North

- c: RE Pending
- Structure OE (E-copy)
- PCE (E-copy)
- DME (E-copy)
- Branch D File
- GDN File
- GS File Room

Memorandum

*Flex your power!**Be energy efficient!*

To: DAN T. ADAMS
Branch Chief
Division of Engineering Services, Structure Design
Office of Bridge Design – Central, Branch 10

Date: May 26, 2009

File: 05-SLO-101-45.96
05-0G0301
Traffic Way U. C.
(Widen)
Bridge No. 49-0152R/L

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5

Subject: Foundation Report

A Foundation Report (FR) is provided for the above referenced project per your request dated May 5th 2009. This report is based on a review of the As-built General Plan, Foundation Plan, Foundation Report, and Log of Test Borings (LOTB) for construction of the Traffic Way Undercrossing, Bridge No. 49-152R/L, all dated 1954. The Report and Map, "Basic Geology of the Santa Margarita Area" by Earl W. Hart (1976), was used to aid in the characterization of the site conditions. The site was inspected on August 13th 2004 and February 10th 2009.

Proposed Improvements

The existing Traffic Way Undercrossing (Bridge No. 49-0152R/L) is approximately 131.5 feet long. It is a three-span bridge consisting of reinforced concrete end spans and a simple welded steel girder supported central span. The abutments are of the closed cellular type. The revised original bridge report indicates that the structure is founded on cast-in-place, 45-ton design load, Monotube piles at all support locations. These piles are most similar to the Alternative "W" shown on the as-built pile detail sheet. The plans indicate that the piles were estimated to penetrate to tip elevation 847 feet, into the weathered Monterey Formation rock that was encountered in the foundation investigation. Proposed improvements at this location include widening of both bridges towards both the outside and inside shoulders, as shown on the General Plan dated April 30th 2009.. Additional foundation elements will be required to support the outside widenings.

Physical Setting

The project is located within the Coast Ranges Geomorphic Province. It lies at the

southern margin of the Salinas River Valley, between the Santa Lucia Range and the Cholame Hills. The site is on the flood plane of Atascadero Creek, a tributary of the Salinas River. In the immediate vicinity of the project, the terrain is flat to gently sloping. Commercial buildings border the site on the east, and a church occupies the land immediately to the west. The surface elevation in the vicinity of the existing bridges is between approximately 863 feet and 868 feet.

Geology and Soil Conditions

The surficial deposits within the project area are Quaternary (Pleistocene) Aged older alluvium. Hart describes this soil as flood plain, channel, fan, colluvium and lake deposits. The soils are lenticular and interfingering beds of weakly consolidated gravel, sand, silt and clay. The Upper Member of the Miocene Aged Monterey Formation underlies the alluvium. At this location, the Upper Member of the Monterey Formation is described as predominately siliceous; a sequence of interbedded or rhythmically bedded porcelanite, opaline chert, mudstone, shale, diatomite, siltstone and tuff.

The 1954 field investigation for the design and construction of the existing bridge included eight dynamic cone penetrometer tests and three rotary borings. The deepest point reached by the rotary borings was approximately elevation 830 feet. In general, the alluvial soils observed in the vicinity of the existing undercrossing are soft gravelly clay from the ground surface to the top of rock, between approximately elevations 835 feet and 855 feet. The rock was described as partly weathered to weathered shale, siltstone and sandstone.

Groundwater

During the 1954 field investigation, groundwater was observed between elevations 859 feet and 862 feet. Soil moisture descriptors are not reported on the Log of Test Borings.

Seismicity Data and Liquefaction Potential

The "Final Seismic Design Recommendations" were provided to you on May 26th 2009 by Ron Richman, Office of Geotechnical Design North. Data provided on the 1954 Log of Test Borings suggests that the foundation soils are not susceptible to liquefaction. Although groundwater was observed in close proximity to the ground surface, the foundation soils are predominately clay and are therefore not susceptible to seismic liquefaction.

Corrosion Testing

Corrosion tests were not performed on soil samples from this location. Testing for Bridge

No. 49-0247 at post mile 45.6 indicated that the foundation soils at that location are not corrosive. For the purposes of design and specifications of the Traffic Way Undercrossing widening, the foundation soils should be considered non-corrosive.

Foundation Recommendations

Driven piles are the recommended foundation type. Class 140, Alternative W piles are proposed for all support locations. Analyses of the lateral resistances of the driven piles were not requested. Design tip elevations for lateral loads have not been provided in the following tables.

Abutment Foundation Design Recommendations									
Support	Pile	Cut-off Elevation (ft)	LRFD Service-I Limit State Load (kips) per Support		LRFD Service-I Limit State Total Load (kips) per Pile (Compression)	Nominal Resistance (kips)	Design Tip Elevations (feet)	Specified Tip Elevation (feet)	Nominal Driving Resistance Required (kips)
			Total	Permanent					
Abut. 1 Lt. Ret Walls	Class 90 Alt. W	Varies	405	283	90	180	845 (a)	833	180
Abut. 1 Lt.	Class 140 Alt. W	860.25	263	184	100	200	845 (a)	838	200
Abut. 1 Rt. Ret Walls	Class 90 Alt. W	Varies	405	283	90	180	845 (a)	846	180
Abut. 1 Rt.	Class 140 Alt. W	860.25	263	184	100	200	845 (a)	845	200
Abut. 2 Lt. Ret Walls	Class 90 Alt. W	Varies	405	283	90	180	845 (a)	845	180
Abut. 2 Lt.	Class 140 Alt. W	861.25	263	184	100	200	845 (a)	845	200
Abut. 2 Rt. Ret Walls	Class 90 Alt. W	Varies	405	283	90	180	845 (a)	845	180
Abut. 2 Rt.	Class 140 Alt. W	861.25	263	184	100	200	845 (a)	845	200

Notes:

- 1) Design tip elevations are controlled by (a) Compression. There are no design tip elevations for settlement.

Pile Data Table						
Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (feet)	Specified Tip Elevation (feet)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut. 1 Lt. Ret Walls	Class 90 Alt. W	180	0	845 (a)	833	180
Abut. 1 Lt.	Class 140 Alt. W	200	0	845 (a)	838	200
Abut. 1 Rt. Ret Walls	Class 90 Alt. W	180	0	845 (a)	846	180
Abut. 1 Rt.	Class 140 Alt. W	200	0	845 (a)	845	200
Abut. 2 Lt. Ret Walls	Class 90 Alt. W	180	0	845 (a)	845	180
Abut. 2 Lt.	Class 140 Alt. W	200	0	845 (a)	845	200
Abut. 2 Rt. Ret Walls	Class 90 Alt. W	180	0	845 (a)	845	180
Abut. 2 Rt.	Class 140 Alt. W	200	0	845 (a)	845	200

Notes:

- 1) Design tip elevations for Abutments are controlled by (a) Compression.
- 2) The specified tip elevation shall not be raised above the design tip elevations for lateral load.

The intention of these foundation recommendations is to drive all piles to rock.

Piles shall be driven in oversized drilled holes in conformance with the provisions in Section 49-1.06, "Predrilled Holes," of the Standard Specifications at the locations with the corresponding bottom of hole elevations listed in the following table:

Bridge Name or Number	Abutment Number	Pier Number	Elevation of Bottom of Hole
Traffic Way Undercrossing (Br. No. 49-0152R/L)	1 Left	-	861 feet
Traffic Way Undercrossing (Br. No. 49-0152R/L)	1 Right	-	861 feet
Traffic Way Undercrossing (Br. No. 49-0152R/L)	2 Left	-	864 feet
Traffic Way Undercrossing (Br. No. 49-0152R/L)	2 Right	-	864 feet

Construction Considerations

The Office of Geotechnical Design North is to be contacted if the constructed pile tip elevation is above the specified tip elevation.

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in "pdf" format to the addressee of this report via electronic mail.

Data and information attached with the project plans are:

- A. Log of Test Borings for the Traffic Way U.C. (Widen)

Data and Information included in the Information Handout provided to the bidders and Contractors are:

- A. Foundation Report for the Traffic Way U.C. (Widen), May 26, 2009, Caltrans.

Data and information available for inspection at the District 5 Office:

- A. None

Data and information available for inspection at the Transportation Laboratory:

- A. None

Closure

A request for production of a Log-of-Test Boring sheet has been made to the Engineering Graphics Branch of the Office of Geotechnical Services. When complete, the As-Built Log-of-Test Borings will be provided to you for attachment to the contract plans.

If you have any questions or comments, please call me at (805) 549-3385 (CalNet 629-3385).



Ron Richman

RON RICHMAN, P.E., C.E.G.
Office of Geotechnical Design – North

- c: RE Pending
- Structure OE (E-copy)
- PCE (E-copy)
- DME (E-copy)
- Branch D File
- GDN File
- GS File Room

State of California Department of Transportation
Division of Engineering Services
Office of Design & Technical Services

Structure Hydraulics

FINAL HYDRAULIC REPORT

Santa Margarita Creek Bridge

Located on State Route 101 in San Luis Obispo County

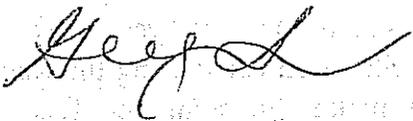
JOB:

Bridge No. 49-0153L, EA 05-0G0301

LOCATION:

05-SLO-101-PM 37.99

PREPARED BY (Signature)



Ginger Lu, PE# 71324
Structure Hydraulics & Scour Mitigation
April 29, 2009



This report has been prepared under my direction as the professional engineer in responsible charge of the work, in accordance with the provisions of the Professional Engineers Act of the State of California.

Hydrology/Hydraulics Report

General:

As a part of the Atascadero 101 Rehabilitation Project in San Luis Obispo County, Structure Design is proposing to widen the existing Santa Margarita Creek Bridge 9.5' on the upstream side and 1.8' on the downstream side, in kind. The existing bridge (Bridge No. 49-0153L) built in 1954 is a continuous, 4-span, reinforced concrete (RC) deck on T-beam girders with a length of 170' and a width of 32'. The supporting substructure is RC pier walls on piles with pile caps and open-end-diaphragm RC seat abutments on piles. Infill walls, column casings and catcher blocks were placed as a result of seismic retrofitting in 1996.

All the calculated values in this report are based geometric information on the General Plans provided on 3/19/09 by the Office of Structure Design and surveying data from 7/22/08 (1988 NAVD) by the District. In addition, it makes reference to the updated Flood Insurance Study (8/28/08) for San Luis Obispo County by the Federal Emergency Management Agency (FEMA). Caltrans Bridge Maintenance Records, field reviews, and As-Built plans (1929 NGVD) were used as well.

Basin:

The Santa Margarita drainage basin for the bridge is formed by the confluence of Tessajera Creek and a small upper section of Santa Margarita Creek. As a small part of Los Padres National Forest, this central California coastal range watershed is covered with various oaks/willows, mixed chaparral shrubs, and some annual grassland. This undeveloped open range area of 10 square miles (mi²) receives an average mean annual precipitation of 31 inches. The channel bed slope near the site was estimated to be an average of 0.005 ft/ft using Watershed Modeling System version 8.0 (WMS 8.0).

Discharge:

There is no stream-gage station within 10 miles of the watershed. The 100-year flow (Q_{100}) for the bridge site was computed to be 2600 cfs with 120% Standard Error using the Regional Regression Method. High standard error (>100%) can make the computed Q_{100} value difficult to correct. Flood Insurance Study of San Luis Obispo County (FEMA) stated that the Q_{100} of 5400 cfs was estimated for Santa Margarita Creek near the interception of El Camino Real and Wilhelmina Avenue (<1 mile downstream from the bridge site). Applying the lag time method of TR-55 module (Urban Hydrology for Small Watersheds published by the Natural Resources Conservation Service) in WMS 8.0, a value of 5600 cfs was obtained for the Q_{100} . The FEMA Q_{100} value (5400 cfs) was confirmed by the TR-55 results and used to produce various hydraulics values in this report.

Stage/Velocity:

Using the 2008 survey information (1988 NAVD), hydraulic models were built in hydraulics software-HEC-RAS. A Manning's roughness coefficient of 0.035 for the main channel and a cross-sectional skew of 15° were applied. The water surface elevations (WSEL) and the average velocities for the Q₁₀₀ are tabulated as follows.

<i>Hydrologic Summary</i>		
<i>Drainage Area: 10 mi²</i>		
<i>Frequency</i>	<i>Design Flood 50-year Event (Q₅₀)</i>	<i>Base Flood 100-year Event (Q₁₀₀)</i>
<i>Discharge (cfs)</i>	4600	5400
<i>WSEL at Bridge (ft)</i>	1038.5	1039.4
<i>Average Velocity (ft/s)</i>	7.5	7.8

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

Drift:

The channel banks according to bridge reports were heavily vegetated with small trees and brush, and debris accumulation near the bridge was frequently observed near Bent 3. The existing structure soffit at Elevation 1053' should pass the 100-year flow with more than 3' freeboard. For the newly widened part of the structure, the soffit elevation at the lowest point should not be lower than 1045'.

<i>Bridge 49-0153L (1988 NAVD)</i>	<i>Q₁₀₀ (5400 cfs)</i>
<i>WSEL (ft)</i>	1039.4
<i>Existing Soffit Elevation (ft)</i>	1053
<i>Available Freeboard (ft)</i>	13.6

Streambed and Scour:

Streambed materials at the bridge site were mostly composed of loose granular medium-coarse silty sand and gravel. No record of mining activities was found within the vicinity of the bridge site. According to the 1954 test borings, this scourable bed strata of loose granular sand/gravel extended to Elevation 1013' (1988 NAVD). Based on historical stream cross-sections (1954-2008), the channel experienced little long-term channel bed degradation (< 2' or 0.03'/yr). For the next 20 years (the remaining service life of the existing structure), the channel bed is anticipated to degrade less than 1' from the existing ground surface.

A low-flow hydraulic skew (20°) was reported, but it appears to not be present in a high flow condition. Because the bridge opening seems to be smaller than the channel width, contraction scour calculations were performed. Due to moderate drift problems at the site, debris was included in the bridge scour analysis on Bent 3. An equivalent pier width of 0.5' was calculated from a 6'-wide debris pile and added to the Bent 3 scour calculations in hydraulic program-BrEase. The scour condition was identified to be a live-bed scour, and the estimated scour depths are shown below.

<i>Bridge 49-0153L (Thalweg Elevation 1026.9 ft)</i>	<i>Q₁₀₀ Bent 2</i>	<i>Q₁₀₀ Bent 3</i>	<i>Q₁₀₀ Bent 4</i>
<i>Contraction Scour Depth (ft)</i>	0.9	0.9	0.9
<i>Scour Depth (ft)</i>	4.5	9.3	3.3
<i>Long-term Degradation Depth (ft)</i>	0.6	0.6	0.6
<i>Total Scour Depth (ft)</i>	6.0	10.8	4.8
<i>Scour Elevation (ft)</i>	1020.9	1016.1	1022.1

Summary & Recommendation:

- With a total scour depth of 10.8', the anticipated scour depth elevation (1016.2') is below the bottom of the Bent 3 pile cap (Elevation 1017.7'). The Atascadero 101 Rehabilitation Project involves lengthening the pier-walls by 9.5' on the upstream side and 1.8' on the downstream side. The existing pile-tips appear to be lower than the calculated scour elevations. Matching the elevations of the new pile tips to the existing ones in the newly proposed section would minimize additional scour impacts.

P

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-1					Med. 48' STBB; Rt. 111' MBGR					AT&T UG cable SB Rt shoulder	MBGR work in vicinity of UG cable; not high risk	AT&T UG cable
U-1a			PM 35.7/35.75 NB/SB Wingwalls; spillway		Rt. 69' MBGR	Rt. 159' MBGR				AT&T UG cable SB Rt shoulder	Work in vicinity of UG cable; not high risk	AT&T UG cable
U-2			PM 36.05 SB extend RCB PM 36.07 NB extend RCB PM 36.14 med, regrade PM 36.18 NB Rt FES; PM 36.26 SB Rt Headwall PM 36.27 SB Inlet	LOC 1 PM 36.06 SB side behind exist MBGR, VDS 30 pole with MVDS sensor and NEMA cabinet D=8"	Med. 1827' STBB			PM 36.05 NB Rt Shld. Extend pipe, FES; 1949 box culvert extend approx 15'; remove tree SB Rt Shld. 8" pipe redirect and extend 5' w/ FES; regrade		AT&T UG cable, SLO 24" waterline SB Rt shoulder; PG&E 12 kV OH xing, Charter OH fiber xing	Drainage work SB PM 36.26 in vicinity of 24" water; TrS and electrical work in vicinity of AT&T UG; not high risk	AT&T UG cable; SLO 24" waterline (JUA);
U-3	36.47/36.76				From U-2 1827' STBB; Rt. 243' MBGR	Med 1284' STBB; Rt. 117' MBGR		PM 36.32, 36.37, 36.45 median Flatten ditch slopes; PM 36.35, 36.40, 36.47 Rt Shld. Place conc apron at DIs		AT&T UG cable, SLO 24" waterline SB Rt shoulder	TrS and MBGR work in vicinity of AT&T UG and 24" waterline; not high risk	AT&T UG cable; SLO 24" waterline (JUA)

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-4	36.47/36.76			LOC 2 PM 36.77 NB side 30' from ETW, VDS 30 pole with MVDS sensor, PV solar panels and NEMA cabinet D=12"	Rt. 587' MBGR	From U-3 med 1284' STBB		PM 36.54 NB Rt Shld. Extent pipe, use FES; MBGR exists. 1929 box culvert w/ approx 15' culvert insert. Shield w/ MBGR. PM 36.72 NB Rt Shld. Construct DI, remove FES, place RCP, regrade		AT&T UG cable SB Rt Shoulder; SLO 24" waterline crosses to median; PG&E 12kV OH xing; ConocoPhillips 2-8" oil lines (abn); Charter fiber xing OH and UG; ConocoPhillips 2-8" oil lines xing; AT&T UG cable xing.	Electrical work in vicinity of AT&T UG cable; MBGR work in vicinity of UG cable and oil lines	AT&T UG cable; SLO 24" waterline (JUA); ConocoPhillips 2-8" oil pipelines east side; PG&E 12kV OH (JUA);
U-5					Rt. 1833' MBGR	Med 2461' STBB; Rt. 724' MBGR		PM 36.88 NB Rt Shld. Shield, flatten ditch slopes; PM 36.95 NB Rt Shld. Shield/extend, Extend pipe 8', install FES, remove headwall. PM 36.97 NB Rt Shld. Shield, flatten ditch slopes. PM 37.04 culvert under driveway		AT&T UG cable SB Rt Shoulder; SLO 24" waterline in median crosses to east side; PG&E 12kV OH xing; Charter fiber xing OH and UG; ConocoPhillips 2-8" oil lines; AT&T UG cable xing	TrS and MBGR work in vicinity of AT&T UG cable xing and SLO waterline xing; MBGR in vicinity of oil lines west side.	AT&T UG cable; SLO 24" waterline (JUA); ConocoPhillips 2-8" oil pipelines west side;
U-6					Rt. 439' MBGR; med. TR	From U-5 med 2461' STBB; Rt. 317' MBGR		PM 37.19 NB Rt Shld. Repair ditch erosion.		AT&T UG cable west side	Drainage work in vicinity of AT&T UG cable; not high risk	AT&T UG cable west side
U-7			PM 37.5 NB add drainage system in shld; PM 37.69 replace slotted drain		101/58 on-ramp; med TR				101/58 SB-on R-30 Construct 8' Rt shld and 4' Lt shld	AT&T UG cable west side; 8" HP gas line xing; 6" HP gas line xing; Charter fiber OH xing; gas line (abn); SLO 24" waterline	Ramp work and MBGR in vicinity of AT&T UG cable and HP gas line crossings.	AT&T UG cable west side; SLO 24" waterline east side. Charter OH fiber east side

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-8	37.8/37.9	37.8/37.9	PM 37.72 SB Left Outlet, 4x4 RCB place fabric and RSP. Gas pipe about 10' from headwall; PM 37.8 SB Left Outlet remove and place pipes, seal joints, place fabric and RSP; PM 37.85 NB off ramp to SR 58 water ponds on shoulder; at 101/58 Br. Runoff is eroding embankment	LOC 3 PM 37.79 SB off-ramp at HWY 58, VDS pole with MVDS sensor and NEMA cabinet D=8"	101/58 off-ramp; 101/58 on-ramp; Rt. TR	Med. TR; Rt. TR		PM 37.72 Rt Shld. Headwall on RCB, extend RCB 10 feet. PM 37.92 SB Rt Shld. Extend RCP 12 feet.	101/58 NB-off R-32 Construct 8' right shoulder, widen left shoulder 2 feet; 101/58 NB-on R-33 widen left shoulder 2 feet. 101/58 SB-off R-31 Construct 8' shoulder	AT&T UG cable east and west side; PG&E 12 kV OH xing; SLO 24" waterline; Charter fiber optic OH; gas lines and oil lines cross drainage area on west side.	Drainage work proposed in vicinity of gas lines and oil lines. Ramp work, electrical and MBGR in vicinity of AT&T UG.	AT&T UG cable (JUA); Charter OH fiber east side; SLO 24" waterline east side; PG&E 12 kV OH.
U-9	37.95/38.10 at Santa Margarita Cr Br.				Rt. 69' MBGR; Rt. 402' MBGR	Med. TR; Rt. 80' MBGR; Rt. 312' MBGR	Santa Margarita Cr Br SB widen to the west, bridge rail. Shld reconstruction at structure			ConocoPhillips 2-8" oil lines xing, 6" HP gas line xing	Stage construction for structure work and MBGR in vicinity of oil and gas lines. Traffic will be moved to the west over oil and gas lines.	
U-10	38.24/38.47	38.29/38.57			Rt. 1162' MBGR	Rt. 1479' MBGR		PM 38.38 NB Rt Shld. Extend box culvert, will be shielded with proposed MBGR				
U-11	38.75/38.96	38.29/38.57				Rt. 1500' MBGR				Southern CA Gas 10" HP gas line xing	Mainline shld widening in vicinity of gas line xing.	

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-12	38.75/38.96	38.95/39.37		LOC 4 PM 38.93 NB side, VDS 30 pole with MVDS sensor, PV solar panels and NEMA cabinet D=12"	Rt. 582' MBGR; Rt. 356' MBGR	From U-11 1500' MBGR				PG&E UG xing	SB shld widening and electrical work in vicinity of PG&E UG xing.	
U-13		38.95/39.37						PM 39.18 NB Rt Shld. Extend pipe, FES, riprap, flatten slope. PM 39.18 SB Rt Shld. Pipe outlet, raise DI to grade, extend pipe, FES				
U-14		38.95/39.37 39.48/39.60				Rt. 264' MBGR; Rt 528' MBGR		PM 39.53 NB Rt Shld. Extend RCB 15' or install MBGR. PM 39.52 SB Rt Shld. Extend RCB 16' or install MBGR.				
U-15	39.60/39.68 39.78/39.90	39.48/39.60 39.81/39.93				Rt. 528' MBGR		PM 39.62 NB Rt Shld. Pipe outlet, Place RCP, new PCC swale PM 39.62 SB Rt Shld. Extend pipe, FES, flatten slope				
U-16	39.78/39.90 39.90/39.96	39.81/39.93 40.06/40.20		LOC 5 PM 39.88 NB side, VDS 30 pole with MVDS sensor, PV solar panels, NEMA cabinet D=12"	See U-17	Rt 2200' MBGR						

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-17	40.18/40.23 40.23/40.34 40.34/40.41	40.06/40.50			Rt. 835' MBGR; Rt. 74' MBGR; Rt. 101' MBGR	From U-16 2200' MBGR						
U-18	40.41/40.51	40.06/40.5				From U-17 2200' MBGR		PM 40.49 SB Rt Shld. Extend pipe 20', FES				
U-19	40.74/40.88 40.88/41.00	40.86/40.92	PM 40.75 SB left, outlet, remove pipes, place pipes, conc, fabric, RSP PM 40.93 SB left outlet, excavate, place fabric, RSP		Rt. 634' MBGR	Rt. 576' MBGR				PG&E 12 kV OH xing, match to U-20.	No apparent utility conflicts.	
U-20	41.00/41.09 41.09/41.25	40.98/41.20 41.20/41.48	PM 41.05 SB left outlet, Place fabric, RSP	LOC 6 PM 41.15 NB side VDS 30 pole with MVDS sensor, PV so;ar panels, NEMA cabinet D=12"		Rt. 317' MBGR				PG&E 12 kV OH xing, match to U-19	No apparent utility conflicts.	
U-21	41.31/41.40 41.40/41.43 41.43/41.47 41.47/41.61	41.2/41.48			Rt. 317' MBGR; Rt. 212' MBGR	Rt. 264" MBGR; Rt. 370" MBGR						

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-22	41.47/41.61	41.64/41.66			Rt. 185' MBGR; Rt. 370' MBGR; Rt. 476' MBGR					PG&E 12kV OH	Shoulder and TrS work in vicinity of PG&E OH	
U-23	41.87/41.89 41.94/41.98 41.98/42.02	41.89/41.93	PM 41.92 SB left outlet, remove and replace 4 feet of pipe PM 41.97 SB left outlet, place fabric, RSP	Lighting on NB off-ramp	Rt. 159' MBGR; Rt. 1574' MBGR	Rt. 159' MBGR				PG&E 12 kV OH xing	No apparent utility conflicts.	
U-24	42.12/42.42	42.12/42.42	PM 42.16 SB left outlet, place fabric, RSP; PM 42.17 SB left outlet, remove 4 feet of pipe, place pipe, fabric, RSP; PM 42.35 NB Rt outlet, regrade	LOC 7 PM 42.29 NB side VDS 40 pole with CCTV camera, MVDS sensor, NEMA cabinet D=8"	Off-ramp; on-ramp; from U-23 1574'; Med. 138' STBB; Rt. 74' MBGR	Off-ramp; on-ramp; Rt. TR			Santa Barbara Rd NB/SB on/off, overlay, adjust MBGR	10" HP gas xing; 12" waterline xing;	MBGR work in vicinity of HP gas line.	
U-25	42.49/42.54 42.55/42.59	42.52/42.60		Lighting on NB-on and SB-off-	Rt. 264' MBGR	Rt. 528' MBGR						
U-26	42.82/42.90		PM 42.95 NB cross-slope correction	LOC 8 PM 42.92 NB side, VDS 30 pole with MVDS sensor and NEMA cabinet D=8"	On-ramp	Rt. 528' MBGR			San Diego Rd SB-on R-9 widen left shld 2 feet, relocate MBGR; NB-off R-10 overlay	4" waterline xing; AT&T UG at SB on-ramp; not high risk	Ramp work and MBGR in vicinity of UG utilities.	AT&T UG cable

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-27		43.0/43.34								AT&T UG cable; PG&E 12 kV UG; PG&E 12 kV OH xing	No apparent conflicts with utilities	AT&T UG cable; PG&E 12 KV UG/OH; PG&E riser pole in R/W
U-28	43.49/43.54	43.34/43.68			On-ramp	Rt. 1225' MBGR			West Front Rd. SB-on R-11, widen left shld 2 feet	SCG 2" gas line west side; PG&E 12kV OH xing; 6" waterline xing; 4" HP gas line xing	Shld widening and MBGR in vicinity of UG utility xings; ramp work and MBGR in vicinity of gas line	SCG 2" gas line west side.
U-29	43.58/43.62	43.34/43.68	PM 43.57 NB construct DI's, place pipe, fabric, RSP, overside drain			Off-ramp; from U-28 1225' MBGR				Sewer line xing; 8" waterline xing; PG&E 12 kV OH xing	No apparent conflicts with utilities.	
U-30		43.79/44.00 44.00/44.11		LOC 9 PM 44.00 SB side, VDS 40 pole with CCTV camera, MVDS sensor, NEMA cabinet D=8"	On-ramp; off-ramp; Rt. 85' MBGR	On-ramp; Rt. 85' MBGR			Santa Rosa Rd. NB/SB on/off, overlay, relocate MBGR	PG&E 12kV OH xing; 6" waterline xing; Charter fiber optic OH xing.	Shoulder widening in vicinity of UG utility xings. Not high risk.	
U-31	44.29/44.34	44.25/44.45	PM 44.19 NB Rt outlet, extend culvert, extend OSD, place RSP PM 44.29 SB off-ramp CSP is undersized, place 40 LF APC.							Sewer line xing; 4" waterline xing; 6" gas line xing	Drainage work in vicinity of 6" gas line.	
U-32	44.41/44.45 44.45/44.50	44.45/44.54 44.54/44.56				Rt. 528' MBGR				PG&E 12kV OH 2-xings	No apparent utility conflicts	

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-33	44.75/45.02	44.75/45.02	PM 44.86 SB Rt outlet, remove, replace 4 feet of pipe PM 44.73 SB RSP at outlet PM 44.85 SB Rt Shld new DI in shld.	LOC 10 PM 44.84 NB side, VDS 30 pole with MVDS sensor, NEMA cabinet D=8"	On-ramp; off-ramp; Rt. 175' MBGR; Rt. 74' MBGR	Off-ramp; on-ramp; Rt. TR		PM 44.68 SB Rt Shld. Shield with MBGR	Curbaril Ave. NB/SB on/off, overlay	PG&E 12 kV OH xing; 10" waterline under bridge.	No apparent utility conflicts.	
U-34						Rt. 370' MBGR				10" waterline xing (abn)	No apparent utility conflicts.	
U-35		45.28/45.30	PM 45.42 dropped	LOC 11 PM 45.42 NB off-ramp, VDS 30 pole with MVDS sensor, NEMA cabinet D=8"	Rt. 333' MBGR	Rt. 819' MBGR				4" waterline xing (abn); 10" waterline xing; 10" gas line xing;	No apparent utility conflicts.	10" gas line at R/W line east side
U-36			PM 45.72 dropped		Off-ramp; Rt. 233' MBGR		Atascadero Cr Br. R/L bridge rails. Shld reconstruction at structure			Sewer line, 12" waterline in city st at 101/41; 4" waterline xing (abn)	No apparent utility conflicts.	
U-37				LOC 12 PM 45.81 NB side behind MBGR, VDS 30 pole with MVDS sensor, NEMA cabinet D=8"; LOC 13 PM 45.95 SB side CCTV 25 pole with CCTV camera.	Rt. 85' MBGR; Rt. 190' MBGR; Rt. 317' MBGR; Rt. 222' MBGR; Med. TR; Rt. 249' MBGR	On-ramp; med. TR; Rt. 64' MBGR; Rt. 528' MBGR; Rt. 228' MBGR; Rt. 48' MBGR	Traffic Way UC R/L widen. Shld reconstruction at structure		Traffic Way NB-off R-20, widen 4' shld. 1.0' CI 2 AB Traffic Way SB-on R-21, widen 4' shld.	PG&E 12 kV OH 2-xing; SCG 6" gas xing; AT&T UG cable xing; sewer line xing; AT&T UG cable and waterline in Traffic Way.	MBGR work in vicinity of UG utilities	

Date: April 28, 2009

Utility Sheet No.	Shoulder widening		Drainage	Electrical	MBGR		Structures	Traffic Safety (TrS)	Ramps	Utilities within R/W	Notes	Longitudinal Encroachment
	SB PM	NB PM			SB	NB						
U-38			PM 46.17 NB remove, place 4 feet of pipe, fabric, RSP			Rt. 1004' MBGR; Rt. 476' STBB			Traffic Way SB-off R-23, widen 4' shld.	PG&E OH electric		PG&E OH electric at R/W line east side.

NOTES:

1. TR = Transition Railing
2. Mainline shoulder widening structural section will be 0.5' CI 2 AB. (Sect < 1.0' below existing road surface, exempt per Section 4-4)
3. Ramp widening structural section will be 1.0' CI 2 AB. Structural section would be modified in the field to avoid utility conflicts.
4. MBGR, transition railing, and STBB will be nested to avoid utility conflicts.
5. Locations of lighting foundations will be adjusted in the field to avoid utility conflicts
6. All proposed drainage work is on existing facilities and will be adjusted in the field to avoid utility conflicts.
7. All NEMA cabinets are 24x24xD, where D is the depth of the NEMA cabinet.
8. Existing high risk facilities within construction areas will be positively located during construction.
9. Shoulder reconstruction at structure will be 1.0' HMA Type-A.