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Aerially Deposited Lead and Naturally Occuring Asbestos
Site Investigation Report

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Site Investigation Report

AERIALLY DEPOSITED LEAD AND NATURALLY OCCURRING ASBESTOS SITE INVESTIGATION REPORT

State Route 20 Post Mile 6.6
Nevada County, California

PREPARED FOR:

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ENVIRONMENTAL ENGINEERING OFFICE
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GEOCON PROJECT NO. S9300-06-152
TASK ORDER NO. 152, EA 03-0F0001
CONTRACT NO 03A1368

JANUARY 2011

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S9300-06-152
January 26, 2011

Mr. Rajive Chadha
California Department of Transportation - District 3
Environmental Engineering Office
P.O. Box 911
Marysville, California 95901

Subject: STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA
CONTRACT NO. 03A1368, TASK ORDER NO. 152, EA 03-0F0001
AERIALLY DEPOSITED LEAD AND NATURALLY OCCURRING ASBESTOS SITE INVESTIGATION REPORT

Dear Mr. Chadha:

In accordance with California Department of Transportation (Caltrans) Contract No. 03A1368, Task Order No. 152, and Expense Authorization 03-0F0001, we have performed environmental engineering services at the project site. The site consists of State Route 20 in Nevada County, California, near approximate Post Mile 6.6. The accompanying report summarizes the services performed including the performance of 40 direct-push borings for the collection of soil samples for aerially deposited lead and/or naturally occurring asbestos analyses.

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 you have any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Rebecca S

For: Wm. Michael O'Brien
Sr. Staff Scientist

John E. Juhrend, PE, CEG
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AERIALLY DEPOSITED LEAD AND NATURALLY OCCURRING ASBESTOS SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Aerially Deposited Lead (ADL) and Naturally Occurring Asbestos (NOA) Site Investigation Report was prepared under California Department of Transportation (Caltrans) Contract No. 03A1368, Task Order (TO) No. 152, and Expense Authorization (EA) 03-0F0001.

1.1 Project Description and Proposed Improvements

The project areas consist of the unpaved shoulders of westbound (WB) and eastbound (EB) State Route 20 (SR-20) to either side of the intersection with Penn Valley Drive/Rough and Ready Highway (approximate Post Mile [PM] 6.6) (the Site) in Nevada County, California. The approximate project location is depicted on the attached Vicinity Map, Figure 1. Caltrans proposes roadway improvements including erosion repair near PM 6.6. The project limits and proposed improvements are depicted on the attached Site Plan, Figure 2.

1.2 General Objectives

The purpose of the scope of services outlined in TO No. 152 was to evaluate the Site for potential impacts due to ADL from motor vehicle exhaust in the surface and near-surface soils and the presence of NOA derived from ultramafic rock. The investigative results will be used by Caltrans to inform the construction contractors if ADL- or NOA-impacted soils are present within the project boundaries for construction worker health and safety, soil reuse evaluation and waste management/disposal purposes.

2.0 BACKGROUND

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

2.1 Potential Lead Soil Impacts

Ongoing testing by Caltrans has indicated that ADL exists along major freeway routes due to emissions from vehicles powered by leaded gasoline.

2.2 Hazardous Waste Determination Criteria

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste may have the potential of exceeding the STLC when the

waste's total metal content is greater than or equal to ten times the respective STLC value, since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP). The TTLC value for lead is 1,000 milligrams per kilogram (mg/kg). The STLC and TCLP values for lead are both 5.0 milligrams per liter (mg/l).

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

The Department of Toxic Substances Control (DTSC) regulates and interprets hazardous waste laws in California. DTSC generally considers excavated or transported materials that exhibit "hazardous waste" characteristics to be a "waste" requiring proper management, treatment and disposal. Soil that contains lead above hazardous waste thresholds and is left in-place would not be necessarily classified by DTSC as a "waste." The DTSC has provided site-specific determinations that "movement of wastes within an area of contamination does not constitute "land disposal" and, thus, does not trigger hazardous waste disposal requirements." Therefore, lead-impacted soil that is scarified in-place, moisture-conditioned, and recompacted during roadway improvement activities might not be considered a "waste." DTSC should be consulted to confirm waste classification. It is noted that in addition to DTSC regulations, health and safety requirements and other local agency requirements may also apply to the handling and disposal of lead-impacted soil.

2.3 Naturally Occurring Asbestos

The California Air Resources Board (CARB) has mitigation practices for construction, grading, quarrying and surface mining operations that may disturb natural occurrences of asbestos as outlined in Title 17 California Code of Regulations (CCR), Section 93105. NOA potentially possesses a health hazard when it becomes an airborne particulate. Mitigation practices can reduce the risk of exposure to asbestos-containing dust. The primary mitigation practice used for controlling exposure to potentially asbestos-containing dust is the implementation of engineering controls including wetting the materials being disturbed. If engineering controls do not adequately control exposure to potentially asbestos-containing dust, the use of personal protective equipment including wearing air purifying respirators with High Efficiency Particulate Air (HEPA) filters is required during construction activities. Dust control methods similar to those in Title 17 CCR, Section 93105 are outlined in Title 17 CCR, Section

93106 for airborne asbestos in road surfacing applications. Using surfacing material with 0.25% or more asbestos material is not permitted and wetting of the material or the application of a surface sealant is recommended to minimize disturbance of the asbestos material. Onsite reuse or disposal of NOA-containing materials (≥0.25%) is allowed by 17 CCR 93106 and 17 CCR 93105 if it is buried under at least 3 inches of material that contains less than 0.25% NOA.

3.0 SCOPE OF SERVICES

The scope of services requested by Caltrans in TO No. 152 included the collection of soil samples for analysis to determine lead and asbestos content, and the preparation of this report.

3.1 Pre-field Activities

- Utilized the *Health and Safety Plan* dated January 2007 prepared for an ADL and NOA investigation in Placer County, to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Provided 48-hour notification to Underground Service Alert (USA) prior to job site mobilization.
- Retained the services of Advanced Technologies Laboratories (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL Inc., a Caltrans-approved analytical laboratory, to perform the asbestos analyses of soil samples.
- Reviewed documents pertaining to the geologic setting of the site vicinity.

3.2 Field Activities

On December 15, 2010, we advanced a total of 40 direct-push borings to an approximate sampling depth of 3.0 feet along the EB and WB shoulders of SR-20 to either side of the Penn Valley Drive/Rough and Ready Highway intersection (approximate PM 6.6). Ten borings (EB1 through EB8, EB39 and EB40) were advanced on the southwest (SW) quadrant of the intersection. Ten borings (EB25 through EB34) were advanced on the southeast (SE) quadrant of the intersection. Ten borings (WB9 through WB16, WB35 and WB36) were advanced on the northeast (NE) quadrant of the intersection. Ten borings (WB17 through WB24, WB37 and WB38) were advanced on the northwest (NW) quadrant of the intersection. Soil samples for lead analysis were collected at depth intervals of 0.0 to 1.0 foot, 1.0 to 2.0 feet and 2.0 to 3.0 feet. Soil samples for asbestos analysis were collected at depths of 2.0 to 3.0 feet. Four composite samples were collected from 16 discrete locations.

Following sample collection, the borings were backfilled with the excess soil cuttings. Details of the field activities are presented in the following sections.

The sample locations were selected in the field by the Geocon Field Supervisor and Caltrans Quality Assurance Manager.

4.0 INVESTIGATIVE METHODS

4.1 ADL Soil Sampling Procedures

A total of 120 soil samples were collected from 40 borings excavated at the Site. Soil samples obtained from the borings were collected in cellulose thermoplastic (acetate) liners driven by the direct-push rig. The acetate liners were cut to separate the sample by depth, then the sample from a particular interval was opened and the soil sample was transferred to a Ziploc® re-sealable plastic bag. The soil samples were field homogenized within the sample bags and subsequently labeled, placed in an ice chest, and delivered to ATL for analytical testing under chain-of-custody (COC) documentation.

The locations of the borings were determined using a differential global positioning system (GPS) capable of providing a horizontal position with an error of no more than 3.3 feet. The latitude and longitude of the borings are presented on Table 1. Coordinates for several of the borings were not recorded due to poor satellite coverage. The approximate soil boring locations are depicted on Figure 2.

4.2 NOA Investigation

Prior to the field sampling activities, we reviewed the following documents pertaining to the geologic setting of the Site:

- *2010 Geologic Map of California*, California Department of Conservation, California Geological Survey, Geologic Data Map No. 2, http://www.quake.ca.gov/gmaps/GMC/stategeologicmap.html, November 2010.
- *Geologic Map of the Chico Quadrangle, California*, California Department of Conservation, California Geological Survey, Map No. 7A (Geology), 1992.
- *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*, California Department of Conservation, Division of Mines and Geology, Open-File Report 2000-19, 2000.

Four composite soil samples (EB1-8NOA, WB9-16NOA, WB17-24NOA and EB25-32NOA) collected from 16 discrete locations were placed in labeled Ziploc® re-sealable plastic bags and delivered to EMSL for asbestos analysis under COC protocol.

4.3 Traffic Control

Traffic control during the fieldwork was provided by Geocon and a Caltrans traffic control crew with signage, cones, and flagmen, as well as the Caltrans QA Manager's vehicle and flashing lights.

4.4 Quality Assurance/Quality Control Procedures

QA/QC procedures were performed during the field exploration activities. These procedures included the decontamination of sampling equipment before each sample was collected and providing COC

documentation for each sample submitted to the laboratories. The soil sampling equipment was cleansed between each boring by washing the equipment with an Alconox® solution followed by a double rinse with deionized water. The decontamination water was discharged to the ground surface within the Caltrans right-of-way, away from the roadway and storm drain inlets.

4.5 Laboratory Analyses

4.5.1 ADL Samples

The soil samples collected within the project boundaries were submitted to ATL for the following analyses under expedited 5-day turn-around-time. The laboratory was instructed to homogenize the soil samples prior to analysis in accordance with Contract 03A1368 requirements.

- One hundred twenty soil samples were analyzed for total lead following United States Environmental Protection Agency (EPA) Test Method 6010B.
- Six soil samples with total lead concentrations greater than or equal to 50 mg/kg (ten times the STLC value for lead of 5.0 mg/l) were further analyzed for WET and DI-WET (WET analysis using deionized water) soluble lead by EPA Test Method 6010B.
- Two soil samples with total lead concentrations greater than 100 mg/kg (twenty times the RCRA hazardous waste threshold for lead of 5.0 mg/l) were further analyzed for TCLP soluble lead by EPA Test Methods 1311 and 6010B.
- Six soil samples were analyzed for soil pH by EPA Test Method 9045C.

4.5.2 NOA Samples

Four composite soil samples were submitted to EMSL for asbestos fiber analysis under six- to ten-day turn-around-time. EMSL analyzed the samples for asbestos using polarized light microscopy (PLM) by CARB Method 435 (CARB 435). The CARB 435 preparation includes milling the sample to a -200 mesh size which also homogenizes the sample. The analytical sensitivity of the PLM analysis was 0.25% by area.

4.5.3 Laboratory QA/QC Procedures

QA/QC procedures were performed by ATL as applicable for each method of analysis with specificity for each analyte listed in the test method's QA/QC. QA/QC measures for the various metals analyses 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 report and COC documentation are presented in Appendix A.

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

5.1 Geologic Map Review

The site geology is mapped as gabbroic intrusive rocks of the Pleasant Valley Pluton in an area not likely to contain NOA. However, these rocks may contain mafic and ultramafic minerals which can be altered to NOA minerals.

5.2 Field Observations

The geologic materials observed on and adjacent to the Site are consistent with those described in the reviewed geologic literature. The soils encountered during the advancement of borings were generally composed of fill and weathered bedrock materials. Fill consisted of brown silty sand with gravel. Gravel within the fill material was noted to consist primarily of locally-derived bedrock.

5.3 ADL Soil Analytical Results

Total lead was detected in 82 of the 120 soil samples analyzed at concentrations ranging from 5.1 to 480 mg/kg. Six of the 82 soil samples had total lead concentrations greater than 50 mg/kg (ten times the STLC value for lead of 5.0 mg/l).

WET soluble lead was detected in two of the six soil samples analyzed at concentrations of 1.2 to 11 mg/l. DI-WET lead was not reported at concentrations equal to or greater than the laboratory test method reporting limit (RL) for each of the six soil samples analyzed.

TCLP lead was reported for one of the two soil samples analyzed at a concentration of 0.86 mg/l, less than the TCLP value for lead of 5.0 mg/l.

Soil pH values for the six soil samples ranged from 4.6 to 7.1.

A summary of the ADL soil sample analytical results are presented on Table 1. Copies of the laboratory report and COC documentation are presented in Appendix A.

5.4 NOA Results

We did not observe rocks likely to contain NOA or indications of geologic conditions conducive to the formation of NOA minerals on the Site. Four composite soil samples were analyzed by EMSL for asbestos by the PLM method using the CARB 435 sample preparation method. Each of the four samples was reported as none detected for asbestos. The analytical laboratory reported each of the samples as 100% non-fibrous. A summary of the NOA soil sample analytical results is presented on Table 2.

5.5 Laboratory Quality Assurance/Quality Control (QA/QC)

The ATL laboratory QA/QC reports show acceptable surrogate recoveries and non-detect results for the method blanks. The ATL Case Narrative stated that RPD for duplicate (DUP) is outside criteria for several samples; however, the laboratory control sample (LCS) validated the analytical batch. The report showed acceptable recoveries and relative percent differences for the matrix spikes and matrix spike duplicates. Based on this limited data review, no qualifications of the ATL data are necessary, and the data are of sufficient quality for the purposes of this report.

5.6 Statistical Evaluation for Lead Detected in Soil Samples

Total lead data were separated into four sample populations for statistical evaluations as described below.

- SW Quadrant consists of soil samples collected from borings EB1 through EB8, EB39 and EB40.
- SE Quadrant consists of soil samples collected from borings EB25 through EB34.
- NE Quadrant consists of soil samples collected from borings WB9 through WB16, WB35 and WB36.
- NW Quadrant consists of soil samples collected from borings WB17 through WB24, WB37 and WB38.

Statistical analysis was not performed for the samples collected from the SW, SE and NW Quadrants since the total lead concentrations are less than 50 mg/kg or the WET soluble lead concentrations are less than the STLC value for lead of 5.0 mg/l.

Statistical methods were applied to the total lead data for the NE Quadrant 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; in an EPA *Technology Support Center Issue* document entitled, *The*

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

5.6.1 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 reporting limit (RL), a value equal to one-half of the RL was used in the UCL calculation. The bootstrap results are presented in Appendix B. The calculated UCLs and statistical results for the NE Quadrant are summarized in the table below:

NE Quadrant
Borings WB9 through WB16, WB35 and WB36

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)
0.0 to 1.0	49.6	53.6	37.0	5.3	120
1.0 to 2.0	7.3	8.1	5.2	2.5	21
2.0 to 3.0	110.7	129.1	54.2	2.5	480

5.6.2 Correlation of Total and Soluble Lead

Total and corresponding WET soluble lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET soluble lead concentrations based on the UCLs calculated above in Section 5.5.1.

To estimate the degree of interrelation between total and corresponding WET soluble 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* for the NE Quadrant data were calculated for the (x, y) data points (i.e., soil samples analyzed for both total lead [x] and WET soluble lead [y]) and equaled 0.9622. A *correlation coefficient* greater than or equal to 0.8 is an acceptable indicator that a correlation exists.

For the *correlation coefficient* that indicates a linear relationship between total and WET soluble 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 $y = 0.0216(x)$ for NE Quadrant, where x represents total lead concentrations and y represents predicted WET soluble lead concentrations. This equation was used to estimate the expected WET soluble lead concentrations for the UCLs calculated in Section 5.5.1. Regression analysis results and a scatter plot depicting the (x, y) data points along with the regression line are presented in Appendix B. The 90% and 95% UCL-predicted WET soluble lead concentrations are presented in Section 6.0.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Waste classifications based on the 90% UCL of the lead content for the relevant excavation depths has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is typically 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.

Based on the TCLP soluble lead results of less than 5.0 mg/l, excess soil generated at the Site will not require disposal as a RCRA hazardous waste. If soil within the project limits is scarified in-place, moisture-conditioned, and recompacted during roadway improvement activities, it may not be considered a "waste."

6.1 SW Quadrant – Borings EB1 through EB8, EB39 and EB40

Total lead concentrations ranged from less than the laboratory RL of 5.0 mg/kg to 62 mg/kg with an average total lead concentration of 9.9 mg/kg. Soil excavated to a depth of 3.0 feet or shallower within this area will not require special soil handling and disposal procedures based on lead content and can be reused or disposed of as non-hazardous soil since the reported total lead concentrations are less than 50 mg/kg or the WET soluble lead concentration is less than the STLC value for lead of 5.0 mg/l.

6.2 SE Quadrant – Borings EB25 through EB34

Total lead concentrations ranged from less than the laboratory RL of 5.0 mg/kg to 60 mg/kg with an average total lead concentration of 14.0 mg/kg. Soil excavated to a depth of 3.0 feet or shallower within this area will not require special soil handling and disposal procedures based on lead content and can be reused or disposed of as non-hazardous soil since the reported total lead concentrations are less than 50 mg/kg or the WET soluble lead concentration is less than the STLC value for lead of 5.0 mg/l.

6.3 NE Quadrant – Borings WB9 through WB16, WB35 and WB36

Total lead concentrations ranged from less than the laboratory RL of 5.0 mg/kg to 480 mg/kg with an average total lead concentration of 32.1 mg/kg. The table below summarizes the predicted WET soluble lead concentrations and the waste classification for excavated soil within this area based on the calculated total lead UCLs and the relationship between total and WET soluble lead. Excavation scenarios and the UCL-predicted WET soluble lead calculations are summarized below.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	95% UCL Predicted WET Lead (mg/l)	Waste Classification
0 to 1.0 foot	49.6	1.1	53.6	1.2	Non-hazardous
Underlying soil (1.0 to 3.0 feet)	59.0	1.3	68.6	1.5	Non-hazardous
0 to 2.0 feet	28.5	0.6	30.9	0.7	Non-hazardous
Underlying soil (2.0 to 3.0 feet)	110.7	2.4	129.1	2.8	Non-hazardous
0 to 3.0 feet	55.9	1.2	63.6	1.4	Non-hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal
Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0216x$

Based on the above table, soil excavated to a depth of 3.0 feet or shallower would not be classified as a California hazardous waste since the calculated 90% and 95% total lead UCLs are less than 50 mg/kg or the UCL-predicted WET soluble lead concentrations are less than the STLC value for lead of 5.0 mg/l. Consequently, soil excavated to a depth of 3.0 feet or shallower could be reused or disposed of as non-hazardous soil with respect to lead content.

6.4 NW Quadrant – Borings WB17 through WB24, WB37 and WB38

Total lead concentrations ranged from less than the laboratory RL of 5.0 mg/kg to 55 mg/kg with an average total lead concentration of 9.7 mg/kg. Soil excavated to a depth of 3.0 feet or shallower within this area will not require special soil handling and disposal procedures based on lead content and can be reused or disposed of as non-hazardous soil since the reported total lead concentrations are less than 50 mg/kg or the WET soluble lead concentration is less than the STLC value for lead of 5.0 mg/l.

6.5 Naturally Occurring Asbestos

Soil samples collected from the Site were not reported to contain NOA at or greater than the laboratory reporting limit of 0.25% by the PLM method. Based on the lack of reported NOA in samples collected at the Site as a part of this investigation, engineering controls to minimize the aerial dispersion of asbestos are not required. Since the Site is not known to contain serpentine or ultramafic rocks and NOA was not reported to be present in the samples analyzed, excess materials derived from the Site may be reused onsite or disposed of offsite without restriction.

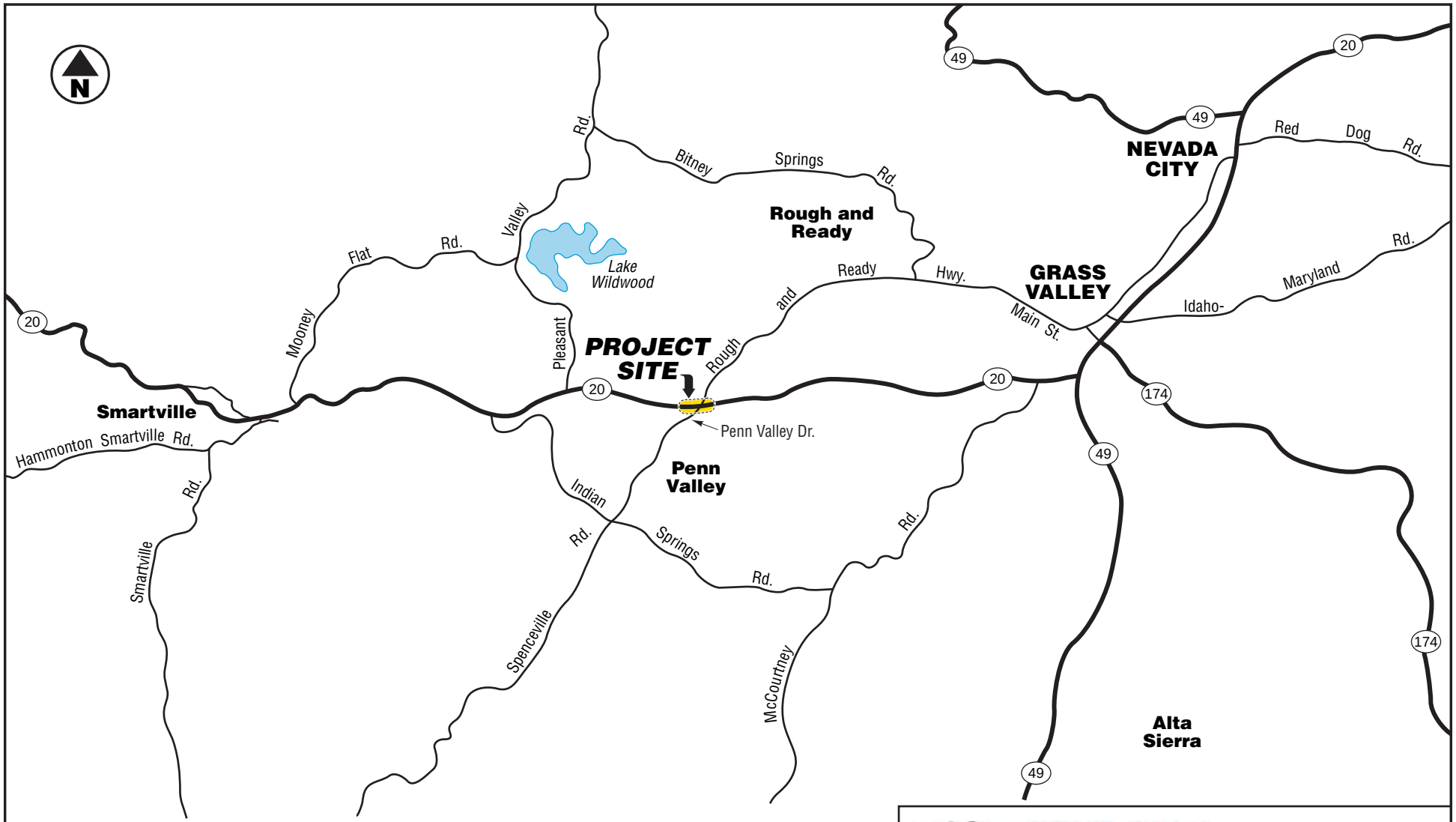
6.6 Worker Protection

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-containing soil at the PM 50.9 project area. 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-containing 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.



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Scale in Miles

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Nevada 20 PM 6.6		
Nevada County, California	**VICINITY MAP**	
GEOCON Proj. No. S9300-06-152		
Task Order No. 152	January 2011	Figure 1

LEGEND:

⊗ Approximate Boring Location

0 200
Scale in Feet

GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

Nevada 20 PM 6.6		
Nevada County, California	**SITE PLAN**	
GEOCON Proj. No. S9300-06-152		
Task Order No. 152	January 2011	Figure 2

TABLE 1
SUMMARY OF SOIL BORING COORDINATES AND LEAD ANALYTICAL RESULTS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

BORING ID	SAMPLE DATE	LATITUDE	LONGITUDE	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	DI-WET LEAD (mg/l)	SOIL pH
STATE ROUTE 20 EASTBOUND - SOUTHWEST QUADRANT							
EB1-0	12/15/2010	NA	NA	21	---	---	---
EB1-1	12/15/2010			<5.0	---	---	---
EB1-2	12/15/2010			<5.0	---	---	---
EB2-0	12/15/2010	39.203224864	-121.173572964	<5.0	---	---	---
EB2-1	12/15/2010			10	---	---	---
EB2-2	12/15/2010			8.3	---	---	---
EB3-0	12/15/2010	39.203214289	-121.173105548	8.0	---	---	---
EB3-1	12/15/2010			<5.0	---	---	---
EB3-2	12/15/2010			5.1	---	---	---
EB4-0	12/15/2010	39.203212686	-121.172671519	5.9	---	---	---
EB4-1	12/15/2010			<5.0	---	---	---
EB4-2	12/15/2010			<5.0	---	---	---
EB5-0	12/15/2010	39.203223975	-121.172259420	13	---	---	---
EB5-1	12/15/2010			<5.0	---	---	---
EB5-2	12/15/2010			5.2	---	---	---
EB6-0	12/15/2010	39.203199135	-121.171798890	5.6	---	---	---
EB6-1	12/15/2010			5.7	---	---	---
EB6-2	12/15/2010			62	<1.0	<0.10	6.6
EB7-0	12/15/2010	39.203195815	-121.171341486	17	---	---	---
EB7-1	12/15/2010			14	---	---	---
EB7-2	12/15/2010			34	---	---	---
EB8-0	12/15/2010	39.203174508	-121.170021231	14	---	---	---
EB8-1	12/15/2010			<5.0	---	---	---
EB8-2	12/15/2010			19	---	---	---
EB39-0	12/15/2010	NA	NA	10	---	---	---
EB39-1	12/15/2010			<5.0	---	---	---
EB39-2	12/15/2010			10	---	---	---
EB40-0	12/15/2010	NA	NA	<5.0	---	---	---
EB40-1	12/15/2010			<5.0	---	---	---
EB40-2	12/15/2010			<5.0	---	---	---
STATE ROUTE 20 EASTBOUND - SOUTHEAST QUADRANT							
EB25-0	12/15/2010	39.203157931	-121.169198769	<5.0	---	---	---
EB25-1	12/15/2010			6.6	---	---	---
EB25-2	12/15/2010			11	---	---	---

TABLE 1
SUMMARY OF SOIL BORING COORDINATES AND LEAD ANALYTICAL RESULTS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

BORING ID	SAMPLE DATE	LATITUDE	LONGITUDE	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	DI-WET LEAD (mg/l)	SOIL pH
EB26-0	12/15/2010	NA	NA	26	---	---	---
EB26-1	12/15/2010			9.1	---	---	---
EB26-2	12/15/2010			6.6	---	---	---
EB27-0	12/15/2010	NA	NA	24	---	---	---
EB27-1	12/15/2010			10	---	---	---
EB27-2	12/15/2010			13	---	---	---
EB28-0	12/15/2010	NA	NA	12	---	---	---
EB28-1	12/15/2010			6.5	---	---	---
EB28-2	12/15/2010			26	---	---	---
EB29-0	12/15/2010	NA	NA	21	---	---	---
EB29-1	12/15/2010			15	---	---	---
EB29-2	12/15/2010			11	---	---	---
EB30-0	12/15/2010	NA	NA	39	---	---	---
EB30-1	12/15/2010			10	---	---	---
EB30-2	12/15/2010			13	---	---	---
EB31-0	12/15/2010	39.203261985	-121.166918199	7.1	---	---	---
EB31-1	12/15/2010			5.4	---	---	---
EB31-2	12/15/2010			13	---	---	---
EB32-0	12/15/2010	39.203291491	-121.166595134	60	<1.0	<0.10	6.7
EB32-1	12/15/2010			7.3	---	---	---
EB32-2	12/15/2010			<5.0	---	---	---
EB33-0	12/15/2010	NA	NA	16	---	---	---
EB33-1	12/15/2010			13	---	---	---
EB33-2	12/15/2010			6.2	---	---	---
EB34-0	12/15/2010	NA	NA	8.3	---	---	---
EB34-1	12/15/2010			12	---	---	---
EB34-2	12/15/2010			6.6	---	---	---
STATE ROUTE 20 WESTBOUND - NORTHEAST QUADRANT							
WB9-0	12/15/2010	39.203682894	-121.165191941	61	<1.0	<0.10	4.6
WB9-1	12/15/2010			21	---	---	---
WB9-2	12/15/2010			<5.0	---	---	---
WB10-0	12/15/2010	39.203604191	-121.165630385	36	---	---	---
WB10-1	12/15/2010			<5.0	---	---	---
WB10-2	12/15/2010			<5.0	---	---	---
WB11-0	12/15/2010	39.203523082	-121.166182983	32	---	---	---
WB11-1	12/15/2010			<5.0	---	---	---
WB11-2	12/15/2010			<5.0	---	---	---

TABLE 1
SUMMARY OF SOIL BORING COORDINATES AND LEAD ANALYTICAL RESULTS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

BORING ID	SAMPLE DATE	LATITUDE	LONGITUDE	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	DI-WET LEAD (mg/l)	SOIL pH
WB12-0	12/15/2010	39.203490358	-121.166554704	30	---	---	---
WB12-1	12/15/2010			5.5	---	---	---
WB12-2	12/15/2010			480	**11** (0.86)	<0.10	5.7
WB13-0	12/15/2010	39.203478025	-121.167005001	16	---	---	---
WB13-1	12/15/2010			<5.0	---	---	---
WB13-2	12/15/2010			<5.0	---	---	---
WB14-0	12/15/2010	39.203459724	-121.167474868	120	<1.0 (<0.05)	<0.10	7.1
WB14-1	12/15/2010			<5.0	---	---	---
WB14-2	12/15/2010			<5.0	---	---	---
WB15-0	12/15/2010	39.203437859	-121.167920540	18	---	---	---
WB15-1	12/15/2010			7.7	---	---	---
WB15-2	12/15/2010			7.1	---	---	---
WB16-0	12/15/2010	39.203427854	-121.168410156	5.3	---	---	---
WB16-1	12/15/2010			<5.0	---	---	---
WB16-2	12/15/2010			<5.0	---	---	---
WB35-0	12/15/2010	NA	NA	16	---	---	---
WB35-1	12/15/2010			<5.0	---	---	---
WB35-2	12/15/2010			37	---	---	---
WB36-0	12/15/2010	NA	NA	36	---	---	---
WB36-1	12/15/2010			<5.0	---	---	---
WB36-2	12/15/2010			<5.0	---	---	---
STATE ROUTE 20 WESTBOUND - NORTHWEST QUADRANT							
WB17-0	12/15/2010	39.203405614	-121.170630133	7.1	---	---	---
WB17-1	12/15/2010			8.1	---	---	---
WB17-2	12/15/2010			9.9	---	---	---
WB18-0	12/15/2010	39.203419899	-121.171108874	<5.0	---	---	---
WB18-1	12/15/2010			<5.0	---	---	---
WB18-2	12/15/2010			13	---	---	---
WB19-0	12/15/2010	NA	NA	5.3	---	---	---
WB19-1	12/15/2010			<5.0	---	---	---
WB19-2	12/15/2010			55	1.2	<0.10	6.7
WB20-0	12/15/2010	39.203392502	-121.172069751	7.4	---	---	---
WB20-1	12/15/2010			<5.0	---	---	---
WB20-2	12/15/2010			<5.0	---	---	---
WB21-0	12/15/2010	39.203373491	-121.172548617	20	---	---	---
WB21-1	12/15/2010			5.7	---	---	---
WB21-2	12/15/2010			11	---	---	---

TABLE 1
SUMMARY OF SOIL BORING COORDINATES AND LEAD ANALYTICAL RESULTS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

BORING ID	SAMPLE DATE	LATITUDE	LONGITUDE	TOTAL LEAD (mg/kg)	WET LEAD (mg/l)	DI-WET LEAD (mg/l)	SOIL pH
WB22-0	12/15/2010	39.203378076	-121.173017794	27	---	---	---
WB22-1	12/15/2010			12	---	---	---
WB22-2	12/15/2010			7.7	---	---	---
WB23-0	12/15/2010	39.203369267	-121.173452260	<5.0	---	---	---
WB23-1	12/15/2010			8.1	---	---	---
WB23-2	12/15/2010			12	---	---	---
WB24-0	12/15/2010	NA	NA	8.6	---	---	---
WB24-1	12/15/2010			<5.0	---	---	---
WB24-2	12/15/2010			<5.0	---	---	---
WB37-0	12/15/2010	NA	NA	<5.0	---	---	---
WB37-1	12/15/2010			5.5	---	---	---
WB37-2	12/15/2010			28	---	---	---
WB38-0	12/15/2010	NA	NA	10	---	---	---
WB38-1	12/15/2010			5.2	---	---	---
WB38-2	12/15/2010			<5.0	---	---	---

Notes: EB1-0

Top of sample depth interval in feet below ground surface

Boring identification

WET = Waste Extraction Test by EPA Test Method 6010B

DI-WET = Waste Extraction Test using deionized water by EPA Test Method 6010B

mg/kg = Milligrams per kilogram

mg/l = Milligrams per liter

< = Less than the laboratory reporting limit

--- = Not analyzed

NA = Global Positioning System data not available

(0.86) = Concentration in parenthesis is Toxicity Characteristic Leaching Procedure soluble lead concentration in mg/l

TABLE 2
SUMMARY OF NOA ANALYTICAL RESULTS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

SAMPLE I.D.	SAMPLE DATE	ANALYTICAL METHOD	ASBESTOS %	ASBESTOS TYPE
EB1-8NOA	12/15/2010	PLM	ND	None Reported
WB9-16NOA	12/15/2010	PLM	ND	None Reported
WB17-24NOA	12/15/2010	PLM	ND	None Reported
EB25-32NOA	12/15/2010	PLM	ND	None Reported

Notes: PLM = Polarized Light Microscopy
NOA = Naturally occurring asbestos
ND = Not detected

APPENDIX A

December 23, 2010

ACCREDITED IN ACCORDANCE WITH

John Juhrend
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

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

RECEIVED
JAN 12 2011
BY: GEOCON

Workorder No.: 115331

RE: Nevada 20 ADL, S9300-06-152

Attention: John Juhrend

Enclosed are the results for sample(s) received on December 17, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: Nevada 20 ADL, S9300-06-152
Lab Order: 115331

CASE NARRATIVE

Analytical Comments for Method 6010

RPD for Duplicate (DUP) is outside criteria for samples 115331-030ADUP, 115331-040ADUP, 115331-050ADUP, 115331-070ADUP, 115331-080ADUP and 115331-110ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-001A	EB1-0	21	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-002A	EB1-1	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-003A	EB1-2	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-004A	EB2-0	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-005A	EB2-1	10	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-006A	EB2-2	8.3	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-007A	EB3-0	8.0	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-008A	EB3-1	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-009A	EB3-2	5.1	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-010A	EB4-0	5.9	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-011A	EB4-1	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-012A	EB4-2	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-013A	EB5-0	13	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-014A	EB5-1	ND	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-015A	EB5-2	5.2	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-016A	EB6-0	5.6	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-017A	EB6-1	5.7	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-018A	EB6-2	62	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-019A	EB7-0	17	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-020A	EB7-1	14	mg/Kg	69121	5.0	1	12/15/2010	12/23/2010
115331-021A	EB7-2	34	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-022A	EB8-0	14	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-023A	EB8-1	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-024A	EB8-2	19	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-025A	WB9-0	61	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-026A	WB9-1	21	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-027A	WB9-2	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-028A	WB10-0	36	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-029A	WB10-1	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-030A	WB10-2	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-031A	WB11-0	32	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-032A	WB11-1	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-033A	WB11-2	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-034A	WB12-0	30	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-035A	WB12-1	5.5	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-036A	WB12-2	480	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-037A	WB13-0	16	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-038A	WB13-1	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-039A	WB13-2	ND	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-040A	WB14-0	120	mg/Kg	69122	5.0	1	12/15/2010	12/23/2010
115331-041A	WB14-1	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-042A	WB14-2	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-043A	WB15-0	18	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-044A	WB15-1	7.7	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-045A	WB15-2	7.1	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-046A	WB16-0	5.3	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-047A	WB16-1	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-048A	WB16-2	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-049A	WB17-0	7.1	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-050A	WB17-1	8.1	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-051A	WB17-2	9.9	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-052A	WB18-0	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-053A	WB18-1	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-054A	WB18-2	13	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-055A	WB19-0	5.3	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-056A	WB19-1	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-057A	WB19-2	55	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-058A	WB20-0	7.4	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-059A	WB20-1	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-060A	WB20-2	ND	mg/Kg	69123	5.0	1	12/15/2010	12/23/2010
115331-061A	WB21-0	20	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-062A	WB21-1	5.7	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-063A	WB21-2	11	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-064A	WB22-0	27	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-065A	WB22-1	12	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-066A	WB22-2	7.7	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-067A	WB23-0	ND	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-068A	WB23-1	8.1	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-069A	WB23-2	12	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-070A	WB24-0	8.6	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-071A	WB24-1	ND	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-072A	WB24-2	ND	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-073A	EB25-0	ND	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-074A	EB25-1	6.6	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-075A	EB25-2	11	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-076A	EB26-0	26	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-077A	EB26-1	9.1	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-078A	EB26-2	6.6	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-079A	EB27-0	24	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-080A	EB27-1	10	mg/Kg	69124	5.0	1	12/15/2010	12/23/2010
115331-081A	EB27-2	13	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-082A	EB28-0	12	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-083A	EB28-1	6.5	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-084A	EB28-2	26	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-085A	EB29-0	21	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-086A	EB29-1	15	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-087A	EB29-2	11	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-088A	EB30-0	39	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-089A	EB30-1	10	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-090A	EB30-2	13	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Advanced Technology Laboratories

Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-091A	EB31-0	7.1	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-092A	EB31-1	5.4	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-093A	EB31-2	13	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-094A	EB32-0	60	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-095A	EB32-1	7.3	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-096A	EB32-2	ND	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-097A	EB33-0	16	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-098A	EB33-1	13	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-099A	EB33-2	6.2	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-100A	EB34-0	8.3	mg/Kg	69125	5.0	1	12/15/2010	12/23/2010
115331-101A	EB34-1	12	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-102A	EB34-2	6.6	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-103A	WB35-0	16	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-104A	WB35-1	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-105A	WB35-2	37	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-106A	WB36-0	36	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-107A	WB36-1	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-108A	WB36-2	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: 12/23/2010

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	115331
Project:	Nevada 20 ADL, S9300-06-152	**Date Received**	12/17/2010 8:28:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
115331-109A	WB37-0	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-110A	WB37-1	5.5	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-111A	WB37-2	28	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-112A	WB38-0	10	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-113A	WB38-1	5.2	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-114A	WB38-2	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-115A	EB39-0	10	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-116A	EB39-1	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-117A	EB39-2	10	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-118A	EB40-0	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-119A	EB40-1	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010
115331-120A	EB40-2	ND	mg/Kg	69126	5.0	1	12/15/2010	12/23/2010

Qualifiers:

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S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Advanced Technology Laboratories

Date: *23-Dec-10*

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69121A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **PBS** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69121** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **LCSS** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	248.625	5.0	250.0	0	99.5	80	120				

Sample ID: **115331-010A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **EB4-0** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.654	5.0						5.853	0	20	

Sample ID: **115331-010A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **EB4-0** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	217.346	5.0	250.0	5.853	84.6	34	126				

Sample ID: **MB-69121B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **PBS** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

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

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CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-020A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **EB7-1** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	12.421	5.0						13.58	8.92	20	

Sample ID: **115331-020A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **EB7-1** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	242.329	5.0	250.0	13.58	91.5	34	126				

Sample ID: **115331-020A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128106**
Client ID: **EB7-1** Batch ID: **69121** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	233.235	5.0	250.0	13.58	87.9	34	126	242.3	3.82	20	

Qualifiers:

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

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CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69122A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **PBS** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69122** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **LCSS** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	248.581	5.0	250.0	0	99.4	80	120				

Sample ID: **115331-030A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **WB10-2** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.812	5.0						3.697	71.5	20	R

Sample ID: **115331-030A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **WB10-2** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	227.368	5.0	250.0	3.697	89.5	34	126				

Sample ID: **MB-69122B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **PBS** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

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

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CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-040A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **WB14-0** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	35.235	5.0						116.3	107	20	R

Sample ID: **115331-040A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **WB14-0** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	301.477	5.0	250.0	116.3	74.1	34	126				

Sample ID: **115331-040A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128107**
Client ID: **WB14-0** Batch ID: **69122** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	295.264	5.0	250.0	116.3	71.6	34	126	301.5	2.08	20	

Qualifiers:

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

Advanced Technology Laboratories
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CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69123A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **PBS** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69123** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **LCSS** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	249.466	5.0	250.0	0	99.8	80	120				

Sample ID: **115331-050A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **WB17-1** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.856	5.0						8.105	29.0	20	R

Sample ID: **115331-050A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **WB17-1** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	250.430	5.0	250.0	8.105	96.9	34	126				

Sample ID: **MB-69123B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **PBS** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-060A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **WB20-2** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.830	5.0						0.7641	0	20	

Sample ID: **115331-060A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **WB20-2** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	243.688	5.0	250.0	0.7641	97.2	34	126				

Sample ID: **115331-060A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128108**
Client ID: **WB20-2** Batch ID: **69123** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	215.859	5.0	250.0	0.7641	86.0	34	126	243.7	12.1	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69124A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **PBS** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69124** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **LCSS** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	282.144	5.0	250.0	0	113	80	120				

Sample ID: **115331-070A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **WB24-0** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	11.818	5.0						8.607	31.4	20	R

Sample ID: **115331-070A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **WB24-0** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	259.806	5.0	250.0	8.607	100	34	126				

Sample ID: **MB-69124B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **PBS** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-080A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **EB27-1** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	12.442	5.0						10.03	21.4	20	R

Sample ID: **115331-080A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **EB27-1** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	242.378	5.0	250.0	10.03	92.9	34	126				

Sample ID: **115331-080A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128109**
Client ID: **EB27-1** Batch ID: **69124** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	235.412	5.0	250.0	10.03	90.2	34	126	242.4	2.92	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69125A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **PBS** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69125** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **LCSS** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	280.224	5.0	250.0	0	112	80	120				

Sample ID: **115331-090A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **EB30-2** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	15.258	5.0						13.18	14.6	20	

Sample ID: **115331-090A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **EB30-2** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	254.210	5.0	250.0	13.18	96.4	34	126				

Sample ID: **MB-69125B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **PBS** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-100A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **EB34-0** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.523	5.0						8.301	9.83	20	

Sample ID: **115331-100A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **EB34-0** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	244.848	5.0	250.0	8.301	94.6	34	126				

Sample ID: **115331-100A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128110**
Client ID: **EB34-0** Batch ID: **69125** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	220.192	5.0	250.0	8.301	84.8	34	126	244.8	10.6	20	

Qualifiers:

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

Advanced Technology Laboratories
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CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-69126A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **PBS** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-69126** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **LCSS** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	291.408	5.0	250.0	0	117	80	120				

Sample ID: **115331-110A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **WB37-1** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.174	5.0						5.505	26.3	20	R

Sample ID: **115331-110A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **WB37-1** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	234.909	5.0	250.0	5.505	91.8	34	126				

Sample ID: **MB-69126B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **PBS** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **115331-120A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **EB40-2** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.484	5.0						2.587	0	20	

Sample ID: **115331-120A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **EB40-2** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	216.599	5.0	250.0	2.587	85.6	34	126				

Sample ID: **115331-120A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **12/22/2010** RunNo: **128111**
Client ID: **EB40-2** Batch ID: **69126** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **12/23/2010** SeqNo: **2073601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	226.397	5.0	250.0	2.587	89.5	34	126	216.6	4.42	20	

Qualifiers:

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

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: 12/17/10

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FedEx ☐ Other: _____

Sample Condition Upon Receipt: 14.4
1. CHILLED Y ☐ N ☐ 4. SEALED Y ☐ N ☑
2. HEADSPACE (VOA) N/A Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☑ N ☐
3. CONTAINER INTACT Y ☑ N ☐ 6. PRESERVED Y ☐ N ☑

Client: Geocon Inc. | Address: 3160 Gold Valley Dr #800 | Tel: 916.852.9118
Attention: J. Juhrend | City: Rancho Cordova | State: CA | Zip Code: 95742 | Fax: 916.852.9132

Project Name: Nevada 20 ADL | Project #: S9300-06-152 | Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	On-Trac	12/15/10	1630
			Mark	12/17/10	8:24

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name | Date
Signature

Send Report To: Attn: See Above | Co: | Addr: | City: | State: | Zip:

Bill To: Attn: See Above | Co: | Addr: | City: | State: | Zip:

Special Instructions/Comments:
Homogenize as per CalTrans Contract # 03A1368
Please send EDF and EXCEL to cook@geoconinc.com

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

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

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	115331-01	EB1-0	12/15/10	810									X			X				E	1	Ziplock		
	-2	EB1-1		811																				
	-3	EB1-2		812																				
	-4	EB2-0		820																				
	-5	EB2-1		821																				
	-6	EB2-2		822																				
	-7	EB3-0		830																				
	-8	EB3-1		831																				
	-9	EB3-2		832																				
	-10	EB4-0		835																				

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

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

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

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

Client: Geocon Inc.
Attention: J. Juhrend
Address: 3160 Gold Valley Dr #800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	On-Trac	12/15/10	1630
				12/17/10	824

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Bill To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Special Instructions/Comments:
Homogenize as per CalTrans Contract # 03A1368
Please send EDF and EXCEL to cook@geoconinc.com

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested — SPECIFY APPROPRIATE MATRIX

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	N5331 -11	EB4-1	12/15/10	836										X		X				E	1	Ziplock		
	-12	EB4-2		837																				
	-13	EB5-0		840																				
	-14	EB5-1		841																				
	-15	EB5-2		842																				
	-16	EB6-0		845																				
	-17	EB6-1		846																				
	-18	EB6-2		847																				
	-19	EB7-0		855																				
	-20	EB7-1		856																				

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

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

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

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ OA OverN ☐ FedEx ☐ Other: _____

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

Client: Geocon Inc.
Attention: J. Juhrend
Address: 3160 Gold Valley Dr #800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	On-Trac	12/15/10	1630
				12/17/10	828

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Bill To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Special Instructions/Comments:
Homogenize as per CalTrans Contract # 03A1368
Please send EDF and EXCEL to cook@geoconinc.com

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

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

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	115331-21	EB7-2	12/15/10	857										X				X			E	1	Ziplock		
	-22	EB8-0		905																					
	-23	EB8-1		906																					
	-24	EB8-2		907																					
	-25	WB9-0		915																					
	-26	WB9-1		916																					
	-27	WB9-2		917																					
	-28	WB10-0		925																					
	-29	WB10-1		926																					
	-30	WB10-2		927																					

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Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives:
H=HCl N=HNO_3 S=H_2SO_4 C=4°C
Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
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FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt:
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3. CONTAINER INTACT Y ☐ N ☐
4. SEALED Y ☐ N ☐
5. # OF SPLS MATCH COC Y ☐ N ☐
6. PRESERVED Y ☐ N ☐

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Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	On-Trac	12/15/10	1630
				12/17/10	824

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Bill To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Special Instructions/Comments:
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	115331-31	WB11-0	12/15/10	935										X				X			E	1	Ziplock	
	-32	WB11-1		936																				
	-33	WB11-2		937																				
	-34	WB12-0		940																				
	-35	WB12-1		941																				
	-36	WB12-2		942																				
	-37	WB13-0		945																				
	-38	WB13-1		946																				
	-39	WB13-2		947																				
	-40	WB14-0		950																				

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Preservatives:
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Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

8/12

CHAIN OF CUSTODY RECORD

Page 8 of 8

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt:
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3. CONTAINER INTACT Y ☐ N ☐
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Attention: J. Juhrend
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Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	Contrac	12/15/10	1630
				12/16/10	828

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

Bill To: Attn: See Above
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City: State: Zip:

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SPECIFY APPROPRIATE MATRIX

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

ITEM	LAB USE ONLY: Lab No.	Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Type	PRESERVATION	REMARKS
	115331-41	WB14-1	12/15/10	951										X		X				E	1	Ziplock		
	-42	WB14-2		952																				
	-43	WB15-0		955																				
	-44	WB15-1		956																				
	-45	WB15-2		957																				
	-46	WB16-0		1005																				
	-47	WB16-1		1006																				
	-48	WB16-2		1007																				
	-49	WB17-0		1015																				
	-50	WB17-1		1016																				

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Preservatives:
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Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

6/12

CHAIN OF CUSTODY RECORD

Page 6 of 6

Advanced Technology Laboratories

3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt:
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2. HEADSPACE (VOA) Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐
4. SEALED Y ☐ N ☐
5. # OF SPLS MATCH COC Y ☐ N ☐
6. PRESERVED Y ☐ N ☐

Client: Geocon Inc.
Attention: J. Juhrend
Address: 3160 Gold Valley Dr #800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
	12/15/10	1630	On Trac	12/15/10	1630
			Margo	12/17/10	826

I hereby authorize ATL to perform the work indicated below.
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To:
Attn: See Above
Co:
Addr:
City: State: Zip:

Bill To:
Attn: See Above
Co:
Addr:
City: State: Zip:

Special Instructions/Comments:
Homogenize as per CalTrans Contract # 03A1368
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SPECIFY APPROPRIATE MATRIX

QA/QC: RTNE ☐ CT ☑ SWRCB ☐ Logcode_____ OTHER _____

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	11533 / -51	WB17-2	12/15/10	1017									X			X				E	1	Ziplock		
	-52	WB18-0		1025																				
	-53	WB18-1		1026																				
	-54	WB18-2		1027																				
	-55	WB19-0		1030																				
	-56	WB19-1		1031																				
	-57	WB19-2		1032																				
	-58	WB20-0		1040																				
	-59	WB20-1		1041																				
	-60	WB20-2		1042																				

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Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt:
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3. CONTAINER INTACT Y ☐ N ☐
4. SEALED Y ☐ N ☐
5. # OF SPLS MATCH COC Y ☐ N ☐
6. PRESERVED Y ☐ N ☐

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Attention: J. Juhrend
Address: 3160 Gold Valley Dr #800
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Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
[signature]	12/15/10	1630	On-Trac	12/15/10	1630
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
			Mary [signature]	12/17/10	824
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To:
Attn: See Above
Co:
Addr:
City: State: Zip:

Bill To:
Attn: See Above
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Addr:
City: State: Zip:

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SPECIFY APPROPRIATE MATRIX

PRESERVATION

QA/QC: RTNE ☐ CT ☑ SWRCB ☐ Logcode_____ OTHER _____

ITEM	LAB USE ONLY: Lab No.	Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Type	REMARKS
	R5331-C1	WB21-0	12/15/10	1045										X		X				E	1	Ziplock	
	-C2	WB21-1		1046																			
	-C3	WB21-2		1047																			
	-C4	WB22-0		1055																			
	-C5	WB22-1		1056																			
	-C6	WB22-2		1057																			
	-C7	WB23-0		1100																			
	-C8	WB23-1		1101																			
	-C9	WB23-2		1102																			
	-70	WB24-0		1105																			

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Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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FOR LABORATORY USE ONLY

P.O. #: _____
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Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

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1. CHILLED Y ☐ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐
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Fax: 916.852.9132

Project Name: Nevada 20 ADL
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Sampler: Mike O'Brien (Signature)

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[signature]	12/15/10	1630	On-Trac	12/15/10	1630
			[signature]	12/17/10	828

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To:
Attn: See Above
Co:
Addr:
City: State: Zip:

Bill To:
Attn: See Above
Co:
Addr:
City: State: Zip:

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ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SPECIFY APPROPRIATE MATRIX: SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	115331-71	WB24-1	12/15/10	1106										X		X				E	1	Ziplock		
	-72	WB24-2		1107																				
	-73	EB25-0		1130																				
	-74	EB25-1		1131																				
	-75	EB25-2		1132																				
	-76	EB26-0		1140																				
	-77	EB26-1		1141																				
	-78	EB26-2		1142																				
	-79	EB27-0		1145																				
	-80	EB27-1		1146																				

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1. CHILLED Y ☐ N ☐ 4. SEALED Y ☐ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐ 6. PRESERVED Y ☐ N ☐

Client: Geocon Inc.
Attention: J. Juhrend
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	12/15/10	1630	On-Trac	12/15/10	1630
				12/17/10	824

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
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Addr: _____
City: State: Zip:

Bill To: Attn: See Above
Co: _____
Addr: _____
City: State: Zip:

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

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	10537 -81	EB27-2	12/15/10	1147									X			X				E	1	Ziplock		
	-82	EB28-0		1155																				
	-83	EB28-1		1156																				
	-84	EB28-2		1157																				
	-85	EB29-0		1200																				
	-86	EB29-1		1201																				
	-87	EB29-2		1202																				
	-88	EB30-0		1210																				
	-89	EB30-1		1211																				
	-90	EB30-2		1212																				

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

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

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

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

Client: Geocon Inc.
Attention: J. Juhrend
Address: 3160 Gold Valley Dr #800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: Nevada 20 ADL
Project #: S9300-06-152
Sampler: Mike O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	12/15/10	1630	Ontrac	12/15/10	1630
			Mary	12/17/10	824

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: J. Juhrend
Print Name Date
Signature

Send Report To: Attn: See Above
Co:
Addr:
City: State: Zip:

Bill To: Attn: See Above
Co:
Addr:
City: State: Zip:

Special Instructions/Comments:
Homogenize as per CalTrans Contract # 03A1368
Please send EDF and EXCEL to cook@geoconinc.com

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal), 8015B (GRO) / 8020 (BTEX), 8015B (DRO), 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000), Total Lead, pH

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

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

ITEM	LAB USE ONLY: Lab No.	Sample Description: Sample ID / Location	Date	Time	Pesticides	PCB	Volatiles	BNA	Total Metal	GRO / 8020 (BTEX)	DRO	BTEX	TITLE 22 / CAM 17 (6010 / 7000)	Total Lead	pH	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	71531-91	EB31-0	12/15/10	1215									X				X			E	1	Ziplock		
	-92	EB31-1		1216																				
	-93	EB31-2		1217																				
	-94	EB32-0		1220																				
	-95	EB32-1		1221																				
	-96	EB32-2		1222																				
	-97	EB33-0		1225																				
	-98	EB33-1		1226																				
	-99	EB33-2		1227																				
	-100	EB34-0		1235																				

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

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

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON CONSULTANTS, INC.
Attn: J. Tabrea[illegible]
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

Project Name: Nevada 20 ADL
Project #: 59300-06-152
Sampler: (Printed Name) M. O'Brien (Signature)

Relinquished by: (Signature and Printed Name) Date: 12/15/10 Time: 1630
Received by: (Signature and Printed Name) On Trac Date: 12/15/10 Time: 1630

Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Maya Date: 12/17/11 Time: 828

Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name _____ Date _____
Signature _____

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments: See Page 1

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

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

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

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

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO)	Total Lead	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	115331 -101	EB34-1	12/15/10	1236								X	X				E	1	Bagge		
	-102	EB34-2		1237																	
	-103	WB35-0		1250																	
	-104	WB35-1		1251																	
	-105	WB35-2		1252																	
	-106	WB36-0		1255																	
	-107	WB36-1		1256																	
	-108	WB36-2		1257																	
	-109	WB37-0		1305																	
	-110	WB37-1		1306																	

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

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON CONSULTANTS, INC.
Attn: J. Jurkend
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

Project Name: Nevada 20 ADL
Project #: 59300-06-152
Sampler: (Printed Name) M. O'Brien (Signature)

Relinquished by: (Signature and Printed Name)	Date: 12/15/10	Time: 1630	Received by: (Signature and Printed Name) On Trac
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name) Mago
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)

Received by: Date: 12/15/10 Time: 1630
Received by: Date: 12/17/11 Time: 824
Received by: Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name _____ Date _____
Signature _____

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
see Page 1

Sample/Records - Archival & Disposal
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SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode _____ OTHER _____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO)	Total Lead	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	115371 -111	WB37-2	12/15/10	1307								X	X				E	1	bag.c		
	-112	WB38-0		1310																	
	-113	WB38-1		1311																	
	-114	WB38-2		1312																	
	-115	EB39-0		1320																	
	-116	EB39-1		1321																	
	-117	EB39-2		1322																	
	-118	EB40-0		1330																	
	-119	EB40-1		1331																	
	-120	EB40-2		1332																	

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

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

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Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

January 05, 2011

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

John Juhrend
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742

TEL: (916) 852-9118
FAX: (916) 852-9132

Workorder No.: 115331

RE: Nevada 20 ADL, S9300-06-152

Attention: John Juhrend

Enclosed are the results for sample(s) received on December 17, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: Nevada 20 ADL, S9300-06-152
Lab Order: 115331

CASE NARRATIVE

Analytical Comments for Method 6010

Dilution was necessary for samples 115331-018A, 115331-025A, 115331-036A, 115331-040A, 115331-057A and 115331-094A, due to sample matrix.

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EB6-2
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-018A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
			WET DI/ EPA 6010B			
RunID: ICP10_110105A	QC Batch: R128467			PrepDate:		Analyst: **SRB**
Lead	ND	0.10		mg/L	1	1/5/2011 10:33 AM
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_110104D	QC Batch: R128439			PrepDate:		Analyst: **SRB**
Lead	ND	1.0		mg/L	20	1/4/2011 03:57 PM
PH						
			EPA 9045C			
RunID: WETCHEM_110104A	QC Batch: R128412			PrepDate:		Analyst: **CBB**
pH	6.6	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	WB9-0
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-025A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
WET DI/ EPA 6010B						
RunID: ICP10_110105A QC Batch: R128467 PrepDate: Analyst: **SRB**						
Lead	ND	0.10		mg/L	1	1/5/2011 10:36 AM
ICP METALS BY STLC						
WET/ EPA 6010B						
RunID: ICP8_110104D QC Batch: R128439 PrepDate: Analyst: **SRB**						
Lead	ND	1.0		mg/L	20	1/4/2011 04:00 PM
PH						
EPA 9045C						
RunID: WETCHEM_110104A QC Batch: R128412 PrepDate: Analyst: **CBB**						
pH	4.6	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	WB12-2
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-036A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
WET DI/ EPA 6010B						
RunID: ICP10_110105A QC Batch: R128467 PrepDate: Analyst: **SRB**						
Lead	ND	0.10		mg/L	1	1/5/2011 10:38 AM
ICP METALS BY STLC						
WET/ EPA 6010B						
RunID: ICP8_110104D QC Batch: R128439 PrepDate: Analyst: **SRB**						
Lead	11	1.0		mg/L	20	1/4/2011 04:04 PM
ICP METALS BY TCLP EXTRACTION						
EPA3010A **EPA 1311/ 6010B**						
RunID: ICP8_110104A QC Batch: 69373 PrepDate: 1/3/2011 Analyst: **SRB**						
Lead	0.86	0.050		mg/L	1	1/4/2011 10:52 AM
PH						
EPA 9045C						
RunID: WETCHEM_110104A QC Batch: R128412 PrepDate: Analyst: **CBB**						
pH	5.7	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	WB14-0
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-040A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
			WET DI/ EPA 6010B			
RunID: ICP10_110105A QC Batch: R128467				PrepDate:		Analyst: **SRB**
Lead	ND	0.10		mg/L	1	1/5/2011 10:40 AM
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_110104D QC Batch: R128439				PrepDate:		Analyst: **SRB**
Lead	ND	1.0		mg/L	20	1/4/2011 04:07 PM
ICP METALS BY TCLP EXTRACTION						
EPA3010A			**EPA 1311/ 6010B**			
RunID: ICP8_110104A QC Batch: 69373				PrepDate:	1/3/2011	Analyst: **SRB**
Lead	ND	0.050		mg/L	1	1/4/2011 10:56 AM
PH						
			EPA 9045C			
RunID: WETCHEM_110104A QC Batch: R128412				PrepDate:		Analyst: **CBB**
pH	7.1	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	WB19-2
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-057A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
WET DI/ EPA 6010B						
RunID: ICP10_110105A QC Batch: R128467 PrepDate: Analyst: **SRB**						
Lead	ND	0.10		mg/L	1	1/5/2011 10:42 AM
ICP METALS BY STLC						
WET/ EPA 6010B						
RunID: ICP8_110104D QC Batch: R128439 PrepDate: Analyst: **SRB**						
Lead	1.2	1.0		mg/L	20	1/4/2011 04:10 PM
PH						
EPA 9045C						
RunID: WETCHEM_110104A QC Batch: R128412 PrepDate: Analyst: **CBB**						
pH	6.7	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Jan-11*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	EB32-0
Lab Order:	115331	**Collection Date:**	12/15/2010
Project:	Nevada 20 ADL, S9300-06-152	**Matrix:**	SOIL
Lab ID:	115331-094A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
			WET DI/ EPA 6010B			
RunID: ICP10_110105A	QC Batch: R128467			PrepDate:		Analyst: **SRB**
Lead	ND	0.10		mg/L	1	1/5/2011 10:45 AM
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_110104D	QC Batch: R128439			PrepDate:		Analyst: **SRB**
Lead	ND	1.0		mg/L	20	1/4/2011 04:21 PM
PH						
			EPA 9045C			
RunID: WETCHEM_110104A	QC Batch: R128412			PrepDate:		Analyst: **CBB**
pH	6.7	0.10		pH Units	1	1/4/2011

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_DI

Sample ID: **MB-69341A** SampType: **MBLK** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **PBW** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.10									

Sample ID: **MB-69341A STLC** SampType: **MBLK** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **PBW** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.10									

Sample ID: **LCS-69341** SampType: **LCS** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **LCSW** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.002	0.10	1.000	0	100	85	115				

Sample ID: **115331-094A-DUP** SampType: **DUP** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **EB32-0** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.10						0	0	20	

Sample ID: **115331-094A-MS** SampType: **MS** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **EB32-0** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.366	0.10	2.500	0	94.6	80	118				

Qualifiers:

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

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_DI

Sample ID: **115331-094A-MSD** SampType: **MSD** TestCode: **6010_DI** Units: **mg/L** Prep Date: RunNo: **128467**
Client ID: **EB32-0** Batch ID: **R128467** TestNo: **WET DI/ EPA** Analysis Date: **1/5/2011** SeqNo: **2080807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.366	0.10	2.500	0	94.6	80	118	2.366	0.0115	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **MB-69342A** SampType: **MBLK** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **PBS** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									

Sample ID: **MB-69342A STLC** SampType: **MBLK** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **PBS** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080290**

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

Sample ID: **LCS-69342** SampType: **LCS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **LCSS** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.982	0.050	1.000	0	98.2	85	115				

Sample ID: **115548-002A-DUP** SampType: **DUP** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **ZZZZZZ** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0						0	0	20	

Sample ID: **115548-002A-MS** SampType: **MS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **ZZZZZZ** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.151	1.0	2.500	0	86.0	80	118				

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **115548-002A-MSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **128439**
Client ID: **ZZZZZZ** Batch ID: **R128439** TestNo: **WET/ EPA 60** Analysis Date: **1/4/2011** SeqNo: **2080297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.124	1.0	2.500	0	84.9	80	118	2.151	1.30	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TC

Sample ID: **MB-69373** SampType: **MBLK** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **PBS** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									

Sample ID: **MB-69314A TCLP** SampType: **MBLK** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **PBS** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									

Sample ID: **LCS-69373** SampType: **LCS** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **LCSS** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.940	0.050	1.000	0	94.0	85	115				

Sample ID: **115344-005A-DUP** SampType: **DUP** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **ZZZZZZ** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.037	0.050						0.03322	0	20	

Sample ID: **115344-005A-MS** SampType: **MS** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **ZZZZZZ** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.404	0.050	2.500	0.03322	94.8	80	118				

Qualifiers:

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

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TC

Sample ID: **115344-005A-MSD** SampType: **MSD** TestCode: **6010_TC** Units: **mg/L** Prep Date: **1/3/2011** RunNo: **128414**
Client ID: **ZZZZZZ** Batch ID: **69373** TestNo: **EPA 1311/ 60 EPA3010A** Analysis Date: **1/4/2011** SeqNo: **2079668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.502	0.050	2.500	0.03322	98.7	80	118	2.404	4.00	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 115331
Project: Nevada 20 ADL, S9300-06-152

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **115331-094ADUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **128412**
Client ID: **EB32-0** Batch ID: **R128412** TestNo: **EPA 9045C** Analysis Date: **1/4/2011** SeqNo: **2079653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.520	0.10						6.670	2.27	20	

Qualifiers:

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

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Diane Galvan

From: silva@geoconinc.com
Sent: Tuesday, December 28, 2010 4:01 PM
To: reblando@geoconinc.com; Diane Galvan; juhrend@geoconinc.com; bieber@geoconinc.com; silva@geoconinc.com
Subject: RE: Results/EDD - Nevada 20 ADL (115331)

Hi Diane - Please also run DI-WET and pH on each of these samples and run them all on 5-day TAT rather than standard.

Thanks,
Rebecca

Original Message:

From: Gemma Reblando reblando@geoconinc.com
Date: Tue, 28 Dec 2010 14:27:01 -0800
To: diane@atlglobal.com, juhrend@geoconinc.com, bieber@geoconinc.com, silva@geoconinc.com
Subject: Results/EDD - Nevada 20 ADL (115331)

Hi Diane - please analyze the following soil samples for WET soluble lead under standard TAT.

115331-018A
115331-025A
115331-036A (plus TCLP lead)
115331-040A (plus TCLP lead)
115331-057A
115331-094A

<http://sites.google.com/site/geoconsig/ /rsrc/1289438278140/sd/sd2/sig.jpg>
Gemma Reblando | Project Geologist
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742 Tel 916.852.9118
begin_of_the_skype_highlighting 916.852.9118 end_of_the_sk ype_highlighting
begin_of_the_skype_highlighting 916.852.9118 end_of_the_sk ype_highlighting
begin_of_the_skype_highlighting 916.852.9118 end_of_the_sk
ype_highlighting Fax 916.852.9132 Cell 916.396.8476
http://www.geoconinc.com <http://www.geoconinc.com/>

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EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Rebecca Silva**
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742

Fax: (916) 852-9132 Phone: (916) 852-9118

Project: **S9300-06-152**
Nevada 20

Customer ID:	GECN80
Customer PO:	S9300-06-152
Received:	12/17/10 10:00 AM
EMSL Order:	091010961
EMSL Proj:	S9300-06-**
Analysis Date:	12/27/2010

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
EB1-8NOA *091010961-0001*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
WB9-16NOA *091010961-0002*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
WB17-24NOA *091010961-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
EB25-32NOA *091010961-0004*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Initial report from 12/28/2010 12:25:14

Analyst(s)

Rui Cindy Geng (4)

Baojia Ke, Laboratory Manager
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM.Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc 2235 Polvorosa Ave , Suite 230, San Leandro CA

THIS IS THE LAST PAGE OF THE REPORT.

091010961

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number *(Lab Use Only)*: 091010961

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

Company: Geocon Consultants Inc.	**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 3160 Gold Valley Dr. #800	
City: Rancho Cordova **State/Province:** CA	**Zip/Postal Code:** 95742 **Country:** USA
Report To (Name): Rebecca Silva	**Fax #:** 916-852-9132
Telephone #: 916-852-9118	**Email Address:** silva@geoconinc.com
Project Name/Number: Nevada 20	59300-06-152
Please Provide Results: ☐ Fax ☒ Email **Purchase Order:**	**U.S. State Samples Taken:** CA

Turnaround Time (TAT) Options* - Please Check

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

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☐ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☒ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** ~~Prepare 4, 4-part composites~~

Client Sample #'s	EB1-8NOA, WB9-16NOA, WB17-24NOA, EB25-32	**Total # of Samples:** 4
Relinquished (Client):	**Date:** 12/16/10	**Time:** 1400
Received (Lab):	**Date:** 12/17/10	**Time:** 1000 UPS

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

091010961

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number *(Lab Use Only)*: 091010961

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

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
EB1-8NOA	Soil		820 12/15/10
VB9-16NOA	Soil		925
WB17-24NOA	Soil		1025
EB25-32NOA	Soil		1140

***Comments/Special Instructions:**

Received at EMSL Analytical, Inc.
San Leandro, CA (888) 455-3675
By
Date 12/17/10 10:00 am pm UPS

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

APPENDIX B

SUMMARY OF STATISTICAL ANALYSIS
EA 03-0F0001
STATE ROUTE 20 POST MILE 6.6
NEVADA COUNTY, CALIFORNIA

NORTHEAST QUADRANT
Borings WB9 through WB16, WB35, WB36

Total Lead UCLs (mg/kg)

Sample Interval (feet)	90% UCL	95% UCL
0.0 to 1.0	49.6	53.6
1.0 to 2.0	7.3	8.1
2.0 to 3.0	110.7	129.1

Excavation Scenarios

	90% UCL		95% UCL	
Excavation Depth	Total Lead (mg/kg)	Soluble (WET) Lead * (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead * (mg/l)
0.0 to 1.0 foot	49.6	1.1	53.6	1.2
Underlying Soil (1.0 to 3.0 feet)	59.0	1.3	68.6	1.5
0.0 to 2.0 feet	28.5	0.6	30.9	0.7
Underlying Soil (2.0 to 3.0 feet)	110.7	2.4	129.1	2.8
0.0 to 3.0 feet	55.9	1.2	63.6	1.4

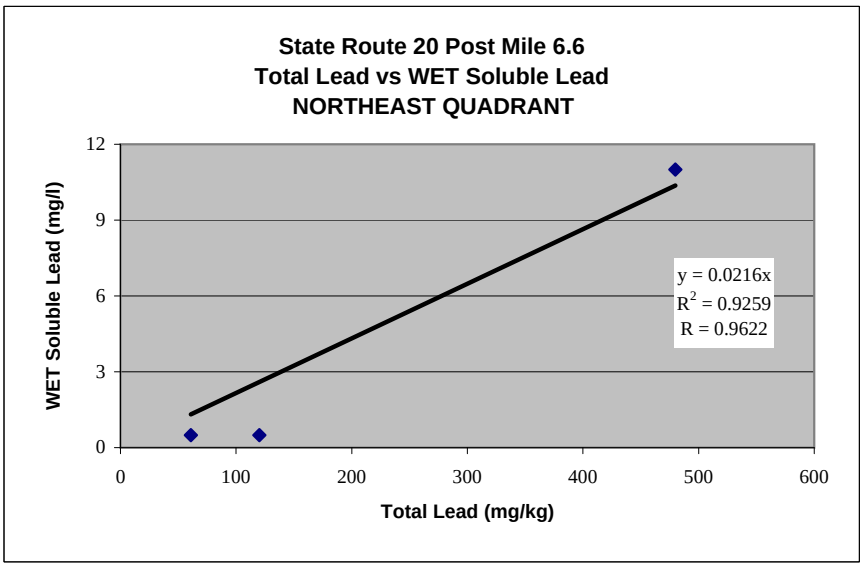
Notes:
UCL = Upper Confidence Level
90% UCL applicable for waste classification and onsite reuse
95% UCL applicable for risk assessment and offsite disposal
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET soluble lead concentrations were predicted using slope of the regression line,
where y = predicted soluble (WET) lead and x = total lead

Regression Line Slope: $y = 0.0216\ x$

STATE ROUTE 20 POST MILE 6.6
S9300-06-152

NORTHEAST QUADRANT
Borings WB9 through WB16, WB35, WB36

Sample ID	Total Lead	WET Lead
WB9-0	61	0.5
WB14-0	120	0.5
WB12-2	480	**11**



DESCRIPTION OF DATA SET

Project Name:	State Route 20 Post Mile 6.6
Project No.:	S9300-06-152
Sample Interval:	0.0 to 1.0 ft
	NORTHEAST QUADRANT
	Borings WB9 through WB16, WB35, WB36

DATA SET STATISTICS

Number of Valid Samples	10
Number of Distinct Samples	8
Minimum	5.3
Maximum	120
Mean	37.03
Median	31
Standard Deviation	32.97959133
Variance	1087.653444
Coefficient of Variation	0.890618183
Skewness	2.040619709
Mean of log data	3.303559279
Standard Deviation of log data	0.847020814
90% Non-parametric UCLs	
Standard Bootstrap UCL	49.60394537
95% Non-parametric UCLs	
Standard Bootstrap UCL	53.60826755

DESCRIPTION OF DATA SET

Project Name:	State Route 20 Post Mile 6.6
Project No.:	S9300-06-152
Sample Interval:	1.0 to 2.0 ft
	NORTHEAST QUADRANT
	Borings WB9 through WB16, WB35, WB36

DATA SET STATISTICS

Number of Valid Samples	10
Number of Distinct Samples	4
Minimum	2.5
Maximum	21
Mean	5.17
Median	2.5
Standard Deviation	5.840481
Variance	34.111222
Coefficient of Variation	1.129687
Skewness	2.683869
Mean of log data	1.320453
Standard Deviation of log data	0.729005
90% Non-parametric UCLs	
Standard Bootstrap UCL	7.344662131
95% Non-parametric UCLs	
Standard Bootstrap UCL	8.123180813

DESCRIPTION OF DATA SET

Project Name:	State Route 20 Post Mile 6.6
Project No.:	S9300-06-152
Sample Interval:	2.0 to 3.0 ft
	NORTHEAST QUADRANT
	Borings WB9 through WB16, WB35, WB36

DATA SET STATISTICS

Number of Valid Samples	10
Number of Distinct Samples	4
Minimum	2.5
Maximum	480
Mean	54.16
Median	2.5
Standard Deviation	150.011149
Variance	22503.344890
Coefficient of Variation	2.769777
Skewness	3.132937
Mean of log data	1.815883
Standard Deviation of log data	1.760654
90% Non-parametric UCLs	
Standard Bootstrap UCL	110.7163588
95% Non-parametric UCLs	
Standard Bootstrap UCL	129.1348452

National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activies: 2009-0009DWQ and 2010-0014DQW.

Linda S. Adams
Secretary for Environmental Protection

State Water Resources Control Board

Division of Water Quality
1001 I Street • Sacramento, California 95814 • (916) 341-5455
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Arnold Schwarzenegger
Governor

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR
STORM WATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE
ACTIVITIES

ORDER NO. 2009-0009-DWQ
NPDES NO**. CAS000002**

This Order was adopted by the State Water Resources Control Board on:	**September 2, 2009**
This Order shall become effective on:	**July 1, 2010**
This Order shall expire on:	**September 2, 2014**

IT IS HEREBY ORDERED, that this Order supersedes Order No. 99-08-DWQ except for enforcement purposes. The Discharger shall comply with the requirements in this Order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder.

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on September 2, 2009.

AYE: Vice Chair Frances Spivy-Weber
Board Member Arthur G. Baggett, Jr.
Board Member Tam M. Doduc

NAY: Chairman Charles R. Hoppin

ABSENT: None

ABSTAIN: None

Jeanine Townsend

Jeanine Townsend
Clerk to the Board

List of Documents included in this single file saved in pdf format on September 22, 2009:

- Fact Sheet
- Order
- Attachment A – Linear Underground/Overhead Requirements
- Attachment A.1 – LUP Project Type Determination
- Attachment A.2 – LUP Permit Registration Documents
- Attachment B – Permit Registration Documents
- Attachment C – Risk Level 1 Requirements
- Attachment D – Risk Level 2 Requirements
- Attachment E – Risk Level 3 Requirements
- Attachment F – Active Treatment System Requirements
- Appendix 1 – Risk Determination Worksheet and Sediment-related 303d List
- Appendix 2 – Post-Construction Water Balance
- Appendix 2.1 – Post-Construction Water Balance Calculator
- Appendix 3 - Bioassessment Monitoring Guidelines
- Appendix 4 – Adopted/Implemented Sediment and Non-sediment TMDLs
- Appendix 5 – Glossary
- Appendix 6 - Acronym List
- Appendix 7 – State and Regional Water Board Contacts

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Arnold Schwarzenegger
Governor

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I. BACKGROUND

A. History

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that established storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 lowered the permitting threshold from five acres to one acre.

While federal regulations allow two permitting options for storm water discharges (Individual Permits and General Permits), the State Water Board has elected to adopt only one statewide General Permit at this time that will apply to most storm water discharges associated with construction activity.

On August 19, 1999, the State Water Board reissued the General Construction Storm Water Permit (Water Quality Order 99-08-DWQ). On December 8, 1999 the State Water Board amended Order 99-08-DWQ to apply to sites as small as one acre.

The General Permit accompanying this fact sheet regulates storm water runoff from construction sites. Regulating many storm water discharges under one permit will greatly reduce the administrative burden associated with permitting individual storm water discharges. To obtain coverage under this General Permit, dischargers shall electronically file the Permit Registration Documents (PRDs), which includes a Notice of Intent (NOI), Storm Water Pollution Prevention Plan (SWPPP), and other compliance related documents required by this General Permit and mail the appropriate permit fee to the State Water Board. It is expected that as the storm water program develops, the Regional Water Quality Control Boards (Regional Water Boards) may issue General Permits or Individual Permits containing more specific permit provisions. When this occurs, this General Permit will no longer regulate those dischargers.

B. Legal Challenges and Court Decisions

1. Early Court Decisions

Shortly after the passage of the CWA, the USEPA promulgated regulations exempting most storm water discharges from the NPDES permit requirements. (See 40 C.F.R. § 125.4 (1975); see also *Natural Resources Defense Council v. Costle* (D.C. Cir. 1977) 568 F.2d 1369, 1372 (*Costle*); *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1163 (*Defenders of Wildlife*).) When environmental groups challenged this exemption in federal court, the District of Columbia Court of Appeals invalidated the regulation, holding that the USEPA "does not have authority to exempt categories of point sources from the permit requirements of [CWA] § 402." (*Costle*, 568 F.2d at 1377.) The *Costle* court rejected the USEPA's argument that effluent-based storm sewer regulation was administratively infeasible because of the variable nature of storm water pollution and the number of affected storm sewers throughout the country. (*Id.* at 1377-82.) Although the court acknowledged the practical problems relating to storm sewer regulation, the court found the USEPA had the flexibility under the CWA to design regulations that would overcome these problems. (*Id.* at 1379-83.) In particular, the court pointed to general permits and permits based on requiring best management practices (BMPs).

During the next 15 years, the USEPA made numerous attempts to reconcile the statutory requirement of point source regulation with the practical problem of regulating possibly millions of diverse point source discharges of storm water. (See *Defenders of Wildlife*, 191 F.3d at 1163; see also Gallagher, Clean Water Act in Environmental Law Handbook (Sullivan, edit., 2003)
p. 300 (Environmental Law Handbook); Eisen, *Toward a Sustainable Urbanism: Lessons from Federal Regulation of Urban Storm Water Runoff* (1995) 48 Wash. U.J. Urb. & Contemp. L.1, 40-41 [Regulation of Urban Storm Water Runoff].)

In 1987, Congress amended the CWA to require NPDES permits for storm water discharges. (See CWA § 402(p), 33 U.S.C. § 1342(p); *Defenders of Wildlife,* 191 F.3d at 1163; *Natural Resources Defense Council v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1296.) In these amendments, enacted as part of the Water Quality Act of 1987, Congress distinguished between industrial and municipal storm water discharges. With respect to industrial storm water discharges, Congress provided that NPDES permits "shall meet all applicable provisions of this section and section 1311 [requiring the USEPA to establish effluent limitations under specific timetables]." (CWA § 402(p)(3)(A), 33 U.S.C. § 1342(p)(3)(A); see also *Defenders of Wildlife,* 191 F.3d at 1163-64.)

In 1990, USEPA adopted regulations specifying what activities were considered "industrial" and thus required discharges of storm water associated with those activities to obtain coverage under NPDES permits. (55 Fed. Reg. 47,990 (1990); 40 C.F.R. § 122.26(b)(14).) Construction activities, deemed a subset of the industrial activities category, must also be regulated by an NPDES permit. (40 C.F.R. § 122.26(b)(14)(x)). In 1999, USEPA issued regulations for "Phase II" of storm water regulation, which required most small construction sites (1-5 acres) to be regulated under the NPDES program. (64 Fed. Reg. 68,722; 40 C.F.R. § 122.26(b)(15)(i).)

2. Court Decisions on Public Participation

Two recent federal court opinions have vacated USEPA rules that denied meaningful public review of NPDES permit conditions. On January 14, 2003, the Ninth Circuit Court of Appeals held that certain aspects of USEPA's Phase II regulations governing MS4s were invalid primarily because the general permit did not contain express requirements for public participation. (*Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832.) Specifically, the court determined that applications for general permit coverage (including the Notice of Intent (NOI) and Storm Water Management Program (SWMP)) must be made available to the public, the applications must be reviewed and determined to meet the applicable standard by the permitting authority before coverage commences, and there must be a process to accommodate public hearings. (*Id.* at 852-54.) Similarly, on February 28, 2005, the Second Circuit Court of Appeals held that the USEPA's confined animal feeding operation (CAFO) rule violated the CWA because it allowed dischargers to write their own nutrient management plans without public review. (*Waterkeeper Alliance v. USEPA* (2d Cir. 2005) 399 F.3d 486.) Although neither decision involved the issuance of construction storm water permits, the State Water Board's Office of Chief Counsel has recommended that the new General Permit address the courts' rulings where feasible[1].

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[1] In *Texas Independent Producers and Royalty Owners Assn. v. USEPA* (7th Cir. 2005) 410 F.3d 964, the Seventh Circuit Court of Appeals held that the USEPA's construction general permit was not required to provide the public with the opportunity for a public hearing on the Notice of Intent or Storm Water Pollution Prevention Plan. The Seventh Circuit briefly discussed why it agreed with the Ninth Circuit's dissent in *Environmental Defense Center*, but generally did not discuss the substantive holdings in *Environmental Defense Center* and *Waterkeeper Alliance*, because neither court addressed the initial question of whether the plaintiffs had standing to challenge the permits at issue. However, notwithstanding the Seventh Circuit's decision, it is not binding or controlling on the State Water Board because California is located within the Ninth Circuit.

The CWA and the USEPA's regulations provide states with the discretion to formulate permit terms, including specifying best management practices (BMPs), to achieve strict compliance with federal technology-based and water quality-based standards. (*Natural Resources Defense Council v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1308.) Accordingly, this General Permit has developed specific BMPs as well as numeric action levels (NALs) and numeric effluent limitations (NELs) in order to achieve these minimum federal standards. In addition, the General Permit requires a SWPPP and REAP (another dynamic, site-specific plan) to be developed but has removed all language requiring the discharger to implement these plans – instead, the discharger is required to comply with specific requirements. By requiring the dischargers to implement these specific BMPs, NALs, and NELs, this General Permit ensures that the dischargers do not "write their own permits." As a result this General Permit does not require each discharger's SWPPP and REAP to be reviewed and approved by the Regional Water Boards.

This General Permit also requires dischargers to electronically file all permit-related compliance documents. These documents include, but are not limited to, NOIs, SWPPPs, annual reports, Notice of Terminations (NOTs), and numeric action level (NAL) exceedance reports. Electronically submitted compliance information is immediately available to the public, as well as the Regional Water Quality Control Board (Regional Water Board) offices, via the Internet. In addition, this General Permit enables public review and hearings on permit applications when appropriate. Under this General Permit, the public clearly has a meaningful opportunity to participate in the permitting process.

C. Blue Ribbon Panel of Experts and Feasibility of Numeric Effluent Limitations

In 2005 and 2006, the State Water Board convened an expert panel (panel) to address the feasibility of numeric effluent limitations (NELs) in California's storm water permits. Specifically, the panel was asked to address:

"Is it technically feasible to establish numeric effluent limitations, or some other quantifiable limit, for inclusion in storm water permits? How would such limitations or criteria be established, and what information and data would be required?"

"The answers should address industrial general permits, construction general permits, and area-wide municipal permits. The answers should also address both technology-based limitations or criteria and water quality-based limitations or criteria. In evaluating establishment of any objective criteria, the panel should address all of the following:

The ability of the State Water Board to establish appropriate objective limitations or criteria;

How compliance determinations would be made;

The ability of dischargers and inspectors to monitor for compliance; and

The technical and financial ability of dischargers to comply with the limitations or criteria."

Through a series of public participation processes (State Water Board meetings, State Water Board workshops, and the solicitation of written comments), a number of water quality, public process and overall program effectiveness problems were identified. Some of these problems are addressed through this General Permit.

D. Summary of Panel Findings on Construction Activities

The panel's final report can be downloaded and viewed through links at www.waterboards.ca.gov or by clicking here[2].

The panel made the following observations:

"Limited field studies indicate that traditional erosion and sediment controls are highly variable in performance, resulting in highly variable turbidity levels in the site discharge."

"Site-to-site variability in runoff turbidity from undeveloped sites can also be quite large in many areas of California, particularly in more arid regions with less natural vegetative cover and steep slopes."

"Active treatment technologies involving the use of polymers with relatively large storage systems now exist that can provide much more consistent and very low discharge turbidity. However, these technologies have as yet only been applied to larger construction sites, generally five acres or greater. Furthermore, toxicity has been observed at some locations, although at the vast majority of sites, toxicity has not occurred. There is also the potential for an accidental large release of such chemicals with their use."

"To date most of the construction permits have focused on TSS and turbidity, but have not addressed other, potentially significant pollutants such as phosphorus and an assortment of chemicals used at construction sites."

"Currently, there is no required training or certification program for contractors, preparers of soil erosion and sediment control Storm Water Pollution Prevention Plans, or field inspectors."

"The quality of storm water discharges from construction sites that effectively employ BMPs likely varies due to site conditions such as climate, soil, and topography."

"The States of Oregon and Washington have recently adopted similar concepts to the Action Levels described earlier."

In addition, the panel made the following conclusions:

"It is the consensus of the Panel that active treatment technologies make Numeric Limits technically feasible for pollutants commonly associated with storm water discharges from construction sites (e.g. TSS and turbidity) for larger construction sites. Technical practicalities and cost-effectiveness may make these technologies less feasible for smaller sites, including small drainages within a larger site, as these technologies have seen limited use at small construction sites. If chemical addition is not permitted, then Numeric Limits are not likely feasible."

"The Board should consider Numeric Limits or Action Levels for other pollutants of relevance to construction sites, but in particular pH. It is of particular concern where fresh concrete or wash water from cement mixers/equipment is exposed to storm water."

"The Board should consider the phased implementation of Numeric Limits and Action Levels, commensurate with the capacity of the dischargers and support industry to respond."

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[2] http://www.waterboards.ca.gov/stormwtr/docs/numeric/swpanel_final_report.pdf

E. How the Panel's Findings are Used in this General Permit

The State Water Board carefully considered the findings of the panel and related public comments. The State Water Board also reviewed and considered the comments regarding statewide storm water policy and the reissuance of the Industrial General Permit. From the input received the State Water Board identified some permit and program performance gaps that are addressed in this General Permit. The Summary of Significant Changes (below) in this General Permit are a direct result of this process.

F. Summary of Significant Changes in This General Permit

The State Water Board has significant changes to Order 99-08-DWQ. This General Permit differs from Order 99-08-DWQ in the following significant ways:

Rainfall Erosivity Waiver: this General Permit includes the option allowing a small construction site (>1 and <5 acres) to self-certify if the rainfall erosivity value (R value) for their site's given location and time frame compute to be less than or equal to 5.

Technology-Based Numeric Action Levels: this General Permit includes NALs for pH and turbidity.

Technology-Based Numeric Effluent Limitations: this General Permit contains daily average NELs for pH during any construction phase where there is a high risk of pH discharge and daily average NELs turbidity for all discharges in Risk Level 3. The daily average NEL for turbidity is set at 500 NTU to represent the minimum technology that sites need to employ (to meet the traditional Best Available Technology Economically Achievable (BAT)/ Best Conventional Pollutant Control Technology (BCT) standard) and the traditional, numeric receiving water limitations for turbidity.

Risk-Based Permitting Approach: this General Permit establishes three levels of risk possible for a construction site. Risk is calculated in two parts: 1) Project Sediment Risk, and 2) Receiving Water Risk.

Minimum Requirements Specified: this General Permit imposes more minimum BMPs and requirements that were previously only required as elements of the SWPPP or were suggested by guidance.

Project Site Soil Characteristics Monitoring and Reporting: this General Permit provides the option for dischargers to monitor and report the soil characteristics at their project location. The primary purpose of this requirement is to provide better risk determination and eventually better program evaluation.

Effluent Monitoring and Reporting: this General Permit requires effluent monitoring and reporting for pH and turbidity in storm water discharges. The purpose of this monitoring is to determine compliance with the NELs and evaluate whether NALs included in this General Permit are exceeded.

Receiving Water Monitoring and Reporting: this General Permit requires some Risk Level 3 dischargers to monitor receiving waters and conduct bioassessments.

Post-Construction Storm Water Performance Standards: this General Permit specifies runoff reduction requirements for all sites not covered by a Phase I or Phase II MS4 NPDES permit, to avoid, minimize and/or mitigate post-construction storm water runoff impacts.

Rain Event Action Plan: this General Permit requires certain sites to develop and implement a Rain Event Action Plan (REAP) that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.

Annual Reporting: this General Permit requires all projects that are enrolled for more than one continuous three-month period to submit information and annually certify that their site is in compliance

with these requirements. The primary purpose of this requirement is to provide information needed for overall program evaluation and pubic information.

Certification/Training Requirements for Key Project Personnel: this General Permit requires that key personnel (e.g., SWPPP preparers, inspectors, etc.) have specific training or certifications to ensure their level of knowledge and skills are adequate to ensure their ability to design and evaluate project specifications that will comply with General Permit requirements.

Linear Underground/Overhead Projects: this General Permit includes requirements for all Linear Underground/Overhead Projects (LUPs).

II. RATIONALE

A. General Permit Approach

A general permit for construction activities is an appropriate permitting approach for the following reasons:

1. A general permit is an efficient method to establish the essential regulatory requirements for a broad range of construction activities under differing site conditions;

2. A general permit is the most efficient method to handle the large number of construction storm water permit applications;

3. The application process for coverage under a general permit is far less onerous than that for individual permit and hence more cost effective;

4. A general permit is consistent with USEPA's four-tier permitting strategy, the purpose of which is to use the flexibility provided by the CWA in designing a workable and efficient permitting system; and

5. A general permit is designed to provide coverage for a group of related facilities or operations of a specific industry type or group of industries. It is appropriate when the discharge characteristics are sufficiently similar, and a standard set of permit requirements can effectively provide environmental protection and comply with water quality standards for discharges. In most cases, the general permit will provide sufficient and appropriate management requirements to protect the quality of receiving waters from discharges of storm water from construction sites.

There may be instances where a general permit is not appropriate for a specific construction project. A Regional Water Board may require any discharger otherwise covered under the General Permit to apply for and obtain an Individual Permit or apply for coverage under a more specific General Permit. The Regional Water Board must determine that this General Permit does not provide adequate assurance that water quality will be protected, or that there is a site-specific reason why an individual permit should be required.

B. Construction Activities Covered

1. **Construction activity subject to this General Permit:**

Any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre.

Construction activity that results in land surface disturbances of less than one acre if the construction activity is part of a larger common plan of development or sale of one or more acres of disturbed land surface.

Construction activity related to residential, commercial, or industrial development on lands currently used for agriculture including, but not limited to, the construction of buildings related to agriculture that are considered industrial pursuant to USEPA regulations, such as dairy barns or food processing facilities.

Construction activity associated with LUPs including, but not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete

and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.[3]

Storm water discharges from dredge spoil placement that occur outside of U.S. Army Corps of Engineers jurisdiction[4] (upland sites) and that disturb one or more acres of land surface from construction activity are covered by this General Permit. Construction projects that intend to disturb one or more acres of land within the jurisdictional boundaries of a CWA § 404 permit should contact the appropriate Regional Water Board to determine whether this permit applies to the project.

2. Linear Underground/Overhead Projects (LUPs) subject to this General Permit:

Underground/overhead facilities typically constructed as LUPs include, but are not limited to, any conveyance, pipe, or pipeline for the transportation of any gaseous, liquid (including water, wastewater for domestic municipal services), liquescent, or slurry substance; any cable line or wire for the transmission of electrical energy; any cable line or wire for communications (e.g., telephone, telegraph, radio or television messages); and associated ancillary facilities. Construction activities associated with LUPs include, but are not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

Water Quality Order 2003-0007-DWQ regulated construction activities associated with small LUPs that resulted in land disturbances greater than one acre, but less than five acres. These projects were considered non-traditional construction projects. Attachment A of this Order now regulates all construction activities from LUPs resulting in land disturbances greater than one acre.

3. Common Plan of Development or Sale

USEPA regulations include the term “common plan of development or sale” to ensure that acreage within a common project does not artificially escape the permit requirements because construction activities are phased, split among smaller parcels, or completed by different owners/developers. In the absence of an exact definition of “common plan of development or sale,” the State Water Board is required to exercise its regulatory discretion in providing a common sense interpretation of the term as it applies to construction projects and permit coverage. An overbroad interpretation of the term would render meaningless the clear “one acre” federal permitting threshold and would potentially trigger permitting of

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[3] Pursuant to the Ninth Circuit Court of Appeals’ decision in *NRDC v. EPA* (9th Cir. 2008) 526 F.3d 591, and subsequent denial of the USEPA’s petition for reconsideration in November 2008, oil and gas construction activities discharging storm water contaminated only with sediment are no longer exempt from the NPDES program.

[4] A construction site that includes a dredge and/or fill discharge to any water of the United States (e.g., wetland, channel, pond, or marine water) requires a CWA Section 404 permit from the U.S. Army Corps of Engineers and a CWA Section 401 Water Quality Certification from the Regional Water Board or State Water Board.

almost any construction activity that occurs within an area that had previously received area-wide utility or road improvements.

Construction projects generally receive grading and/or building permits (Local Permits) from local authorities prior to initiating construction activity. These Local Permits spell out the scope of the project, the parcels involved, the type of construction approved, etc. Referring to the Local Permit helps define "common plan of development or sale." In cases such as tract home development, a Local Permit will include all phases of the construction project including rough grading, utility and road installation, and vertical construction. All construction activities approved in the Local Permit are part of the common plan and must remain under the General Permit until construction is completed. For custom home construction, Local Permits typically only approve vertical construction as the rough grading, utilities, and road improvements were already independently completed under the a previous Local Permit. In the case of a custom home site, the homeowner must submit plans and obtain a distinct and separate Local Permit from the local authority in order to proceed. It is not the intent of the State Water Board to require permitting for an individual homeowner building a custom home on a private lot of less than one acre if it is subject to a separate Local Permit. Similarly, the installation of a swimming pool, deck, or landscaping that disturbs less than one acre that was not part of any previous Local Permit are not required to be permitted.

The following are several examples of construction activity of less than one acre that would require permit coverage:

a. A landowner receives a building permit(s) to build tract homes on a 100-acre site split into 200 one-third acre parcels, (the remaining acreage consists of streets and parkways) which are sold to individual homeowners as they are completed. The landowner completes and sells all the parcels except for two. Although the remaining two parcels combined are less than one acre, the landowner must continue permit coverage for the two parcels.

b. One of the parcels discussed above is sold to another owner who intends to complete the construction as already approved in the Local Permit. The new landowner must file Permit Registration Documents (PRDs) to complete the construction even if the new landowner is required to obtain a separate Local Permit.

c. Landowner in (1) above purchases 50 additional one half-acre parcels adjacent to the original 200-acre project. The landowner seeks a Local Permit (or amendment to existing Local permit) to build on 20 parcels while leaving the remaining 30 parcels for future development. The landowner must amend PRDs to include the 20 parcels 14 days prior to commencement of construction activity on those parcels.

C. Construction Activities Not Covered

1. Traditional Construction Projects Not Covered

This General Permit does not apply to the following construction activity:

a. Routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

b. Disturbances to land surfaces solely related to agricultural operations such as disking, harrowing, terracing and leveling, and soil preparation.

c. Discharges of storm water from areas on tribal lands; construction on tribal lands is regulated by a federal permit.

d. Discharges of storm water within the Lake Tahoe Hydrologic Unit. The Lahontan Regional Water Board has adopted its own permit to regulate storm water discharges from construction activity in the Lake Tahoe Hydrologic Unit (Regional Water Board 6SLT). Owners of construction projects in this watershed must apply for the Lahontan Regional Water Board permit rather than the statewide Construction General Permit. Construction projects within the Lahontan region must also comply with the Lahontan Region Project Guideline for Erosion Control (R6T-2005-0007 Section), which can be found at **http://www.waterboards.ca.gov/lahontan/Adopted_Orders/2005/r6t_2005_0007.pdf**

e. Construction activity that disturbs less than one acre of land surface, unless part of a larger common plan of development or the sale of one or more acres of disturbed land surface.

f. Construction activity covered by an individual NPDES Permit for storm water discharges.

g. Landfill construction activity that is subject to the Industrial General Permit.

h. Construction activity that discharges to Combined Sewer Systems.

i. Conveyances that discharge storm water runoff combined with municipal sewage.

j. Discharges of storm water identified in CWA § 402(*l*)(2), 33 U.S.C. § 1342(*l*)(2).

2. **Linear Projects Not Covered**

a. LUP construction activity does not include linear routine maintenance projects. Routine maintenance projects are projects associated with operations and maintenance activities that are conducted on existing lines and facilities and within existing right-of-way, easements, franchise agreements, or other legally binding agreements of the discharger. Routine maintenance projects include, but are not limited to projects that are conducted to:

i. Maintain the original purpose of the facility or hydraulic capacity.

ii. Update existing lines[5] and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.

iii. Repairing leaks.

Routine maintenance does not include construction of new[6] lines or facilities resulting from compliance with applicable codes, standards, and regulations.

Routine maintenance projects do not include those areas of maintenance projects that are outside of an existing right-of-way, franchise, easements, or agreements. When a project must secure new areas,

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[5]Update existing lines includes replacing existing lines with new materials or pipes.
[6]New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines.

those areas may be subject to this General Permit based on the area of disturbed land outside the original right-of-way, easement, or agreement.

b. LUP construction activity does not include field activities associated with the planning and design of a project (e.g., activities associated with route selection).

c. Tie-ins conducted immediately adjacent to "energized" or "pressurized" facilities by the discharger are not considered construction activities where all other LUP construction activities associated with the tie-in are covered by an NOI and SWPPP of a third party or municipal agency.

3. **EPA's Small Construction Rainfall Erosivity Waiver**

EPA's Storm Water Phase II Final Rule provides the option for a Small Construction Rainfall Erosivity Waiver. This waiver applies to small construction sites between 1 and 5 acres, and allows permitting authorities to waive those sites that do not have adverse water quality impacts.

Dischargers eligible for this waiver are exempt from Construction General Permit Coverage. In order to obtain the waiver, the discharger must certify to the State Water Board that small construction activity will occur only when the rainfall erosivity factor is less than 5 ("R" in the Revised Universal Soil Loss Equation). The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a practice that provides interim non-vegetative stabilization can be used for the end of the construction period. The operator must agree (as a condition waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the General Permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with a certification statement constitutes acceptance of and commitment to complete the final stabilization process. The discharger must submit a waiver certification to the State Board prior to commencing construction activities.

USEPA funded a cooperative agreement with Texas A&M University to develop an online rainfall erosivity calculator. Dischargers can access the calculator from EPA's website at: www.epa.gov/npdes/stormwater/cgp. Use of the calculator allows the discharger to determine potential eligibility for the rainfall erosivity waiver. It may also be useful in determining the time periods during which construction activity could be waived from permit coverage.

D. Obtaining and Terminating Permit Coverage

The Legally Responsible Person (LRP) must obtain coverage under this General Permit, except in two limited circumstances. First, where the construction of pipelines, utility lines, fiber-optic cables, or other linear underground/overhead projects will occur across several properties, the utility company, municipality, or other public or private company or agency that owns or operates the linear underground/overhead project is responsible for obtaining coverage under the General Permit. Second, where there is a lease of a mineral estate (oil, gas, geothermal, aggregate, precious metals, and/or industrial metals), the lessee is responsible for obtaining coverage under the General Permit. To obtain coverage, the LRP or other entity described above must file Permit Registration Documents (PRDs) prior to the commencement of construction activity. Failure to obtain coverage under this General Permit for storm water discharges to waters of the United States is a violation of the CWA and the California Water Code.

To obtain coverage under this General Permit, LRPs must electronically file the PRDs, which include a Notice of Intent (NOI), Storm Water Pollution Prevention Plan (SWPPP), and other documents required by this General Permit, and mail the appropriate permit fee to the State Water Board. It is expected that as the storm water program develops, the Regional Water Boards may issue General Permits or

Individual Permits that contain more specific permit provisions. When this occurs, this General Permit will no longer regulate those dischargers that obtain coverage under Individual Permits.

Any information provided to the Regional Water Board shall comply with the Homeland Security Act and any other federal law that concerns security in the United States; any information that does not comply should not be submitted.

The application requirements of the General Permit establish a mechanism to clearly identify the responsible parties, locations, and scope of operations of dischargers covered by the General Permit and to document the discharger's knowledge of the General Permit's requirements.

This General Permit provides a grandfathering exception to existing dischargers subject to Water Quality Order No. 99-08-DWQ. Construction projects covered under Water Quality Order No. 99-08-DWQ shall obtain permit coverage at Risk Level 1. LUP projects covered under Water Quality Order No. 2003-0007-DWQ shall obtain permit coverage at LUP Type 1. The Regional Water Boards have the authority to require Risk Determination to be performed on projects currently covered under Water Quality Order No. 99-08-DWQ and 2003-0007-DWQ where they deem necessary.

LRPs must file a Notice of Termination (NOT) with the Regional Water Board when construction is complete and final stabilization has been reached or ownership has been transferred. The discharger must certify that all State and local requirements have been met in accordance with this General Permit. In order for construction to be found complete, the discharger must install post-construction storm water management measures and establish a long-term maintenance plan. This requirement is intended to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect water quality impacts (i.e., pollution and/or hydromodification) upstream and downstream. Specifically, the discharger must demonstrate compliance with the post-construction standards set forth in this General Permit (Section XIII). The discharger is responsible for all compliance issues including all annual fees until the NOT has been filed and approved by the local Regional Water Board.

E. Discharge Prohibitions

This General Permit authorizes the discharge of storm water to surface waters from construction activities that result in the disturbance of one or more acres of land, provided that the discharger satisfies all permit conditions set forth in the Order. This General Permit prohibits the discharge of pollutants other than storm water and non-storm water discharges authorized by this General Permit or another NPDES permit. This General Permit also prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges. In addition, this General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the nine Regional Water Boards. Discharges to Areas of Special Biological Significance (ASBS) are prohibited unless covered by an exception that the State Water Board has approved.

Non-storm water discharges include a wide variety of sources, including improper dumping, spills, or leakage from storage tanks or transfer areas. Non-storm water discharges may contribute significant pollutant loads to receiving waters. Measures to control spills, leakage, and dumping, and to prevent illicit connections during construction must be addressed through structural as well as non-structural BMPs. The State Water Board recognizes, however, that certain non-storm water discharges may be necessary for the completion of construction projects. Authorized non-storm water discharges may include those from de-chlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, uncontaminated ground water dewatering, and other discharges not subject to a separate general NPDES permit adopted by a region. Therefore this General Permit authorizes such discharges provided they meet the following conditions.

These authorized non-storm water discharges must:

1. be infeasible to eliminate;
2. comply with BMPs as described in the SWPPP;
3. filter or treat, using appropriate technology, all dewatering discharges from sedimentation basins;
4. meet the NELs and NALs for pH and turbidity; and
5. not cause or contribute to a violation of water quality standards.

Additionally, authorized non-storm water discharges must not be used to clean up failed or inadequate construction or post-construction BMPs designed to keep materials onsite. Authorized non-storm water dewatering discharges may require a permit because some Regional Water Boards have adopted General Permits for dewatering discharges.

This General Permit prohibits the discharge of storm water that causes or threatens to cause pollution, contamination, or nuisance.

F. Effluent Standards for All Types of Discharges

1. Technology-Based Effluent Limitations

Permits for storm water discharges associated with construction activity must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require controls of pollutant discharges that utilize best available technology economically achievable (BAT) for toxic pollutants and non conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants. Additionally, these provisions require controls of pollutant discharges to reduce pollutants and any more stringent controls necessary to meet water quality standards. The USEPA has already established such limitations, known as effluent limitation guidelines (ELGs), for some industrial categories. This is not the case with construction discharges. In instances where there are no ELGs the permit writer is to use best professional judgment (BPJ) to establish requirements that the discharger must meet using BAT/BCT technology. This General Permit contains both narrative effluent limitations and new numeric effluent limitations for pH and turbidity, set using the best professional judgment (BPJ) equivalent to BAT and BCT (respectively).

BAT/BCT technologies not only include passive systems such as conventional runoff and sediment control, but also treatment systems such as coagulation/flocculation using sand filtration, when appropriate. Such technologies allow for effective treatment of soil particles less 0.02 mm (medium silt) in diameter. The discharger must install structural controls, as necessary, such as erosion and sediment controls that meet BAT and BCT to achieve compliance with water quality standards. The narrative effluent limitations constitute compliance with the requirements of the CWA.

The numeric effluent limitations for pH and turbidity are based upon BPJ, which authorizes the State Water Board to issue a permit containing “such conditions as the Administrator determines are necessary to carry out the provisions of this Chapter” (CWA § 402(a)(1), 33 U.S.C. § 1342(a)(1).) Because the USEPA has not yet issued an effluent limit guideline for storm water, the State Water Board must use BPJ to consider the appropriate technology for the category or class of point sources, based upon all available information and any unique factors relating to the sources. In addition, the permitting authority must consider a number of factors including the cost of achieving effluent reductions in relation to the effluent reduction benefits, the age of the equipment and facilities, the processes employed and any required process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and other such other factors as the State Water Board deems appropriate (CWA 304(b)(1)(B)).

Because the permit is an NPDES permit, there is no legal requirement to address the factors set forth in Water Code sections 13241 and 13263, unless the permit is more stringent than what federal law requires. (See *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 618, 627.) None of the requirements in this permit are more stringent than the minimum federal requirements, which include technology-based requirements achieving BAT/BCT and strict compliance with water quality standards. The inclusion of numeric effluent limitations (NELs) in the permit do not cause the permit to be more stringent than current federal law. NELs and best management practices are simply two different methods of achieving the same federal requirement: strict compliance with state water quality standards. Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. The use of NELs to achieve compliance with water quality standards is not a more stringent requirement than the use of BMPs. (State Water Board Order No. WQ 2006-0012 (*Boeing*).) Accordingly, the State Water Board does not need to take into account the factors in Water Code sections 13241 and 13263.

The State Water Board has concluded that the establishment of BAT/BCT will not create or aggravate other environmental problems through increases in air pollution, solid waste generation, or energy consumption. While there may be a slight increase in non-water quality impacts due to the implementation of additional monitoring or the construction of additional BMPs, these impacts will be negligible in comparison with the construction activities taking place on site and would be justified by the water quality benefits associated with compliance.

Considerations related to the processes employed and the changes necessitated by the adoption of the BAT/BCT effluent limits have been assessed throughout the stakeholder process (e.g., the Blue Ribbon Panel and the March 2007 preliminary draft) and are discussed in detail in Section I.C of this Fact Sheet. The following sections set forth the engineering aspects of the control technologies and the rationale for the determination of the numeric effluents for pH and turbidity.

In consideration of the costs for the establishment of BAT and BCT limits for pH and turbidity, existing requirements for the control of storm water pollution from construction sites have been established by USEPA and the previous Construction General Permit (State Water Board Order No. 99-08-DWQ) issued by the State Water Board. The General Permit establishes one, consistent set of performance standards for all levels and types of discharges (i.e., risk, linear utility, and ATS).The only difference is that for each level or type of discharge there may be more or less specific effluent limitations (e.g., the addition of numeric effluent limitations for turbidity applies to level/type 3 discharges). And the numeric effluent limitations themselves represent a minimum technology standard. In other words, the additional numeric effluent limitations, compared to the existing permit's narrative effluent limitations, do not increase compliance requirements; rather, they simply represent a point where one can quantitatively measure compliance with the lower end of the range of required technologies. Therefore, the compliance costs associated with the BAT/BCT numeric effluent limitations in this permit only differ by the costs required to measure compliance with the NELs when compared to the baseline compliance costs to comply with the limitations already established through EPA regulations and the existing Construction General Permit.

The State Water Board estimates these measurement costs to be approximately $1000 per construction site for the duration of the project. This represents the estimated cost of purchasing (or renting) monitoring equipment, in this case a turbidimeter (~$600) and a pH meter (~$400). In some cases the costs may be higher or lower. Costs could be lower if the discharger chooses to design and implement the project in a manner where effluent monitoring is likely to be avoided (e.g., no exposure during wet weather seasons, no discharge due to containment, etc.). Costs could be more if the project is subject to many effluent monitoring events or if the discharger exceeds NALs and/or NELs, resulting in additional monitoring requirements.

i. *pH NEL*

Given the potential contaminants, the minimum standard method for control of pH in runoff requires the use of preventive measures such as avoiding concrete pours during rainy weather, covering concrete and directing flow away from fresh concrete if a pour occurs during rain, covering scrap drywall and stucco

materials when stored outside and potentially exposed to rain, and other housekeeping measures. If necessary, pH-impaired storm water from construction sites can be treated in a filter or settling pond or basin, with additional natural or chemical treatment required to meet pH limits set forth in this permit. The basin or pond acts as a collection point and holds storm water for a sufficient period for the contaminants to be settled out, either naturally or artificially, and allows any additional treatment to take place. The State Water Board considers these techniques to be equivalent to BCT. In determining the pH concentration limit for discharges, the State Water Board used BPJ to set these limitations.

The chosen limits were established by calculating three standard deviations above and below the mean pH of runoff from highway construction sites[7] in California. Proper implementation of BMPs should result in discharges that are within the range of 6.0 to 9.0 pH Units.

ii. ***Turbidity NEL***

The Turbidity NEL of 500 NTU is a technology-based numeric effluent limitation and was developed using three different analyses aimed at finding the appropriate threshold to set the technology-based limit to ensure environmental protection, effluent quality and cost-effectiveness. The analyses fell into three, main types: (1) an ecoregion-specific dataset developed by Simon et. al. (2004) [8]; (2) Statewide Regional Water Quality Control Board enforcement data; and (3) published, peer-reviewed studies and reports on in-situ performance of best management practices in terms of erosion and sediment control on active construction sites.

A 1:3 relationship between turbidity (expressed as NTU) and suspended sediment concentration (expressed as mg/L) is assumed based on a review of suspended sediment and turbidity data from three gages used in the USGS National Water Quality Assessment Program:

USGS 11074000 SANTA ANA R BL PRADO DAM CA
USGS 11447650 SACRAMENTO R A FREEPORT CA
USGS 11303500 SAN JOAQUIN R NR VERNALIS CA

The turbidity NEL represents a feasible and cost effective performance standard that is demonstrated to be achievable. Although data has been collected to demonstrate that lower effluent levels may be achievable at some sites, staff cannot conclude at this time that a lower NEL is achievable within all the ecoregions of the state. The NEL represents staff determination that the NEL is the most practicable based on available data. The turbidity NEL represents a bridge between the narrative effluent limitations and receiving water limitations. The NEL limit may be considered an interim performance standard as additional data becomes available for evaluation during the next permit cycle. To support this NEL, State Water Board staff analyzed construction site discharge information (monitoring data, estimates) and receiving water monitoring information.

Since the turbidity NEL represents an appropriate threshold level expected at a site, compliance with this value does not necessarily represent compliance with either the narrative effluent limitations (as enforced through the BAT/BCT standard) or the receiving water limitations. In the San Diego region, some inland surface waters have a receiving water objective for turbidity equal to 20 NTU. Obviously a discharge up to, but not exceeding, the turbidity NEL of 500 NTU may still cause or contribute to the exceedance of the 20 NTU standard. Most of the waters of the State are protected by turbidity objectives based on background conditions**.**

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[7] Caltrans Construction Sites Runoff Characterization Study, 2002. Available at: http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-055.pdf.
[8] Simon, A., W.D. Dickerson, and A. Heins. 2004. Suspended-sediment transport rates at the 1.5-year recurrence interval for ecoregions of the United States: transport conditions at the bankfull and effective discharge. Geomorphology 58: pp. 243-262.

Table 1 - Regional Water Board Basin Plans, Water Quality Objectives for Turbidity

REGIONAL WATER BOARD	WQ Objective	Background/Natural Turbidity	Maximum Increase
1 Based	on background	All levels	20%
2 Based	on background	> 50 NTU	10%
3 Based	on background	0-50 JTU 50-100 JTU > 100 JTU	20% 10 NTU 10%
4 Based	on background	0-50 NTU > 50 NTU	20% 10%
5 Based	on background	0-5 NTU 5-50 NTU 50-100 NTU >100 NTU	1 NTU 20% 10 NTU 10%
6 Based	on background	All levels	10%
7 Based	on background	N/A N/A	
8 Based	on background	0-50 NTU 50-100 NTU >100 NTU	20% 10 NTU 10%
9 Inland	Surface Waters, 20 NTU All others, based on background	0-50 NTU 50-100 NTU >100 NTU	20% 10 NTU 10%

Table 2 shows the suspended sediment concentrations at the 1.5 year flow recurrence interval for the 12 ecoregions in California from Simon et. al (2004).

Table 2 - Results of Ecoregion Analysis

Ecoregion	Percent of California Land Area	Median Suspended Sediment Concentration (mg/L)
1 9.1		874
4 0.2		120
5 8.8		35.6
6 20.7		1530
7 7.7		122
8 3.0		47.4
9 9.4		284
13 5.2		143
14 21.7		5150
78 8.1		581
80 2.4		199
81 3.7		503
Area-weighted average		1633

If a 1:3 relationship between turbidity and suspended sediment is assumed, the median turbidity is 544 NTU.

The following table is composed of turbidity readings measured in NTUs from administrative civil liberty (ACL) actions for construction sites from 2003 - 2009. This data was derived from the complete listing of construction-related ACLs for the six year period. All ACLs were reviewed and those that included turbidimeter readings at the point of storm water discharge were selected for this dataset.

Table 3 – ACL Sampling Data taken by Regional Water Board Staff

WDID#	Region	Discharger	Turbidity (NTU)
5S34C331884	5S Bradshaw	Interceptor Section 6B	1800
5S05C325110	5S Bridalwood	Subdivision	1670
5S48C336297	5S Cheyenne	at Browns Valley	1629
5R32C314271	5R Grizzly	Ranch Construction	1400
6A090406008	6T	El Dorado County Department of Transportation, Angora Creek	97.4
5S03C346861	5S	TML Development, LLC	1600
6A31C325917	6T	Northstar Village	See Subdata Set

Subdata Set - Turbidity for point of storm water runoff discharge at Northstar Village

Date	Turbidity (NTU)	Location
10/5/2006	900	Middle Martis Creek
11/2/2006	190	Middle Martis Creek
01/04/2007	36	West Fork, West Martis Creek
02/08/2007	180	Middle Martis Creek
02/09/2007	130	Middle Martis Creek
02/09/2007	290	Middle Martis Creek
02/09/2007	100	West Fork, West Martis Creek
02/10/2007	28	Middle Martis Creek
02/10/2007	23	Middle Martis Creek
02/10/2007	32	Middle Martis Creek
02/10/2007	12	Middle Martis Creek
02/10/2007	60	West Fork, West Martis Creek
02/10/2007	34	West Fork, West Martis Creek

A 95% confidence interval for mean turbidity in an ACL order was constructed. The data set used was a small sample size, so the 500 NTU (the value derived as the NEL for this General Permit) needed to be verified as a possible population mean. In this case, the population refers to a hypothetical population of turbidity measurements of which our sample of 20 represents. A t-distribution was assumed due to the small sample size:

Mean: 512.23 NTU
Standard Deviation: 686.85
Margin of Error: 321.45
Confidence Interval: 190.78 NTU (Low)
833.68 NTU (High)

Based on a constructed 95% confidence interval, an ACL order turbidity measurement will be between 190.78 – 833.68 NTU. 500 NTU falls within this range. Using the same data set, a small-sample hypothesis test was also performed to test if the ACL turbidity data set contains enough information to cast doubt on choosing a 500 NTU as a mean. 500 NTU was again chosen due to its proposed use as an acceptable NEL value. The test was carried out using a 95% confidence interval. Results indicated that the ACL turbidity data set *does not* contain significant sample evidence to reject the claim of 500 NTU as an acceptable mean for the ACL turbidity population.

There are not many published, peer-reviewed studies and reports on in-situ performance of best management practices in terms of erosion and sediment control on active construction sites. The most often cited study is a report titled, "Improving the Cost Effectiveness of Highway Construction Site Erosion and Pollution Control" (Horner, Guedry, and Kortenhof 1990, http://www.wsdot.wa.gov/Research/Reports/200/200.1.htm). In a comment letter summarizing this report sent to the State Water Board, the primary author, Dr. Horner, states:

"The most effective erosion control product was wood fiber mulch applied at two different rates along with a bonding agent and grass seed in sufficient time before the tests to achieve germination. Plots treated in this way reduced influent turbidity by more than 97 percent and discharged effluent exhibiting mean and maximum turbidity values of 21 and 73 NTU, respectively. Some other mulch and blanket materials performed nearly as well. These tests demonstrated the control ability of widely available BMPs over a very broad range of erosion potential."

Other technologies studied in this report produced effluent quality at or near 100 NTU. It is the BPJ of the State Water Board staff that erosion control, while preferred, is not always an option on construction sites and that technology performance in a controlled study showing effluent quality directly leaving a BMP is always easier and cheaper to control than effluent being discharged from the project (edge of property, etc.). As a result, it is the BPJ of the State Water Board staff that it is not cost effective or feasible, at this time, for all risk level and type 3 sites in California to achieve effluent discharges with turbidity values that are less than 100 NTU.

To summarize, the analysis showed that: (1) results of the Simon et. al dataset reveals turbidity values in background receiving water in California's ecoregions range from 16 NTU to 1716 NTU (with a mean of 544 NTU); (2) based on a constructed 95% confidence interval, construction sites will be subject to administrative civil liability (ACL) when their turbidity measurement falls between 190.78 – 833.68 NTU; and (3) sites with highly controlled discharges employing and maintaining good erosion control practices can discharge effluent from the BMP with turbidity values less than 100 NTU. Therefore, the appropriate threshold to set the technology-based limit to ensure environmental protection, effluent quality, and cost-effectiveness ranges from 100 NTU to over 1700 NTU. To keep this parameter and the costs of compliance as low as possible, State Water Board staff has determined, using its BPJ, that it is most cost effective to set the numeric effluent limitation for turbidity at 500 NTU.

a. Compliance Storm Event

In response to public comments on the last draft and the recommendations of the expert panel, this General Permit contains "compliance storm event" exceptions from the technology-based NELs. The rationale is that technology-based requirements are developed assuming a certain design storm (defined as the storm producing a rainfall amount for a specified BMPs capacity). Compliance thresholds are needed for storm events above and beyond the design storms assumed to determine the technology-based NELs. For Risk Level 3 project sites applicable to NELs, this General Permit establishes a compliance storm event as the equivalent rainfall in a 5-year, 24-hour storm. This compliance storm was

chosen due to its relative infrequent occurrence and the fact that the runoff volume associated with it is not as large as a 10-year, 24-hour storm event. The discharger shall determine this value using Western Regional Climate Center Precipitation Frequency Maps[9] for 5-year 24-hour storm events in Northern and Southern California (note that these are expressed in tenths of inches – divide by 10 to get inches).

b. TMDLs and Waste Load Allocations

Dischargers located within the watershed of a CWA § 303(d) impaired water body, for which a TMDL for sediment has been adopted by the Regional Water Board or USEPA, must comply with the approved TMDL if it identifies "construction activity" or land disturbance as a source of sediment. If it does, the TMDL should include a specific waste load allocation for this activity/source. The discharger, in this case, may be required by a separate Regional Water Board order to implement additional BMPs, conduct additional monitoring activities, and/or comply with an applicable waste load allocation and implementation schedule. If a specific waste load allocation has been established that would apply to a specific discharge, the Regional Water Board may adopt an order requiring specific implementation actions necessary to meet that allocation. In the instance where an approved TMDL has specified a general waste load allocation to construction storm water discharges, but no specific requirements for construction sites have been identified in the TMDL, dischargers must consult with the state TMDL authority[10] to confirm that adherence to a SWPPP that meets the requirements of the General Permit will be consistent with the approved TMDL.

2. Determining Compliance with Effluent Standards

a. Technology-Based Numeric Action Levels (NALs)

This General Permit contains technology-based NALs for pH and turbidity, and requirements for effluent monitoring at all Risk level 2 & 3, and LUP Type 2 & 3 sites. Numeric action levels are essentially numeric benchmark values for certain parameters that, if exceeded in effluent sampling, trigger the discharger to take actions. Exceedance of an NAL does not itself constitute a violation of the General Permit. If the discharger fails to take the corrective action required by the General Permit, though, that may consititute a violation.

The primary purpose of NALs is to assist dischargers in evaluating the effectiveness of their on-site measures. Construction sites need to employ many different systems that must work together to achieve compliance with the permit's requirements. The NALs chosen should indicate whether the systems are working as intended.

Another purpose of NALs is to provide information regarding construction activities and water quality impacts. This data will provide the State and Regional Water Boards and the rest of the storm water community with more information about levels and types of pollutants present in runoff and how effective the dischargers BMPs are at reducing pollutants in effluent. The State Water Board also hopes to learn more about the linkage between effluent and receiving water quality. In addition, these requirements will provide information on the mechanics needed to establish compliance monitoring programs at construction sites in future permit deliberations.

i. *pH*

[9] http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif & http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif .
[10] http://www.waterboards.ca.gov/tmdl/tmdl.html.

The chosen limits were established by calculating one standard deviation above and below the mean pH of runoff from highway construction sites[11] in California. Proper implementation of BMPs should result in discharges that are within the range of 6.5 to 8.5 pH Units.

The Caltrans study included 33 highway construction sites throughout California over a period of four years, which included 120 storm events. All of these sites had BMPs in place that would be generally implemented at all types of construction sites in California.

ii. ***Turbidity***

BPJ was used to develop an NAL that can be used as a learning tool to help dischargers improve their site controls, and to provide meaningful information on the effectiveness of storm water controls. A statewide turbidity NAL has been set at 250 NTU.

G. Receiving Water Limitations

Construction-related activities that cause or contribute to an exceedance of water quality standards must be addressed. The dynamic nature of construction activity gives the discharger the ability to quickly identify and monitor the source of the exceedances. This is because when storm water mobilizes sediment, it provides visual cues as to where corrective actions should take place and how effective they are once implemented.

This General Permit requires that storm water discharges and authorized non-storm water discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards. The monitoring requirements in this General Permit for sampling and analysis procedures will help determine whether BMPs installed and maintained are preventing pollutants in discharges from the construction site that may cause or contribute to an exceedance of water quality standards.

Water quality standards consist of designated beneficial uses of surface waters and the adoption of ambient criteria necessary to protect those uses. When adopted by the State Water Board or a Regional Water Board, the ambient criteria are termed “water quality objectives.” If storm water runoff from construction sites contains pollutants, there is a risk that those pollutants could enter surface waters and cause or contribute to an exceedance of water quality standards. For that reason, dischargers should be aware of the applicable water quality standards in their receiving waters. (The best method to ensure compliance with receiving water limitations is to implement BMPs that prevent pollutants from contact with storm water or from leaving the construction site in runoff.)

In California, water quality standards are published in the Basin Plans adopted by each Regional Water Board, the California Toxics Rule (CTR), the National Toxics Rule (NTR), and the Ocean Plan.

Dischargers can determine the applicable water quality standards by contacting Regional Water Board staff or by consulting one of the following sources. The actual Basin Plans that contain the water quality standards can be viewed at the website of the appropriate Regional Water Board. (http://www.waterboards.ca.gov/regions.html), the State Water Board site for statewide plans (http://www.waterboards.ca.gov/plnspols/index.html), or the USEPA regulations for the NTR and CTR (40 C.F.R. §§ 131.36-38). Basin Plans and statewide plans are also available by mail from the appropriate Regional Water Board or the State Water Board. The USEPA regulations are available at http://www.epa.gov/. Additional information concerning water quality standards can be accessed through http://www.waterboards.ca.gov/stormwtr/gen_const.html.

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[11] Caltrans Construction Sites Runoff Characterization Study, 2002. Available at: http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-055.pdf.

H. Training Qualifications and Requirements

The Blue Ribbon Panel (BRP) made the following observation about the lack of industry-specific training requirements:

"Currently, there is no required training or certification program for contractors, preparers of soil erosion and sediment control Storm Water Pollution Prevention Plans, or field inspectors."

Order 99-08-DWQ required that all dischargers train their employees on how to comply with the permit, but it did not specificy a curriculum or certification program. This has resulted in inconsistent implementation by all affected parties - the dischargers, the local governments where the construction activity occurs, and the regulators required to enforce 99-08-DWQ. This General Permit requires Qualified SWPPP Developers and practitioners to obtain appropriate training, and makes this curriculum mandatory two years after adoption, to allow time for course completion. The State and Regional Water Board are working with many stakeholders to develop the curriculum and mechanisms needed to develop and deliver the courses.

To ensure that the preparation, implementation, and oversight of the SWPPP is sufficient for effective pollution prevention, the Qualified SWPPP Developer and Qualified SWPPP Practitioners responsible for creating, revising, overseeing, and implementing the SWPPP must attend a State Water Board-sponsored or approved Qualified SWPPP Developer and Qualified SWPPP Practitioner training course.

I. Sampling, Monitoring, Reporting and Record Keeping

1. Traditional Construction Monitoring Requirements

This General Permit requires visual monitoring at all sites, and effluent water quality at all Risk Level 2 & 3 sites. It requires receiving water monitoring at some Risk Level 3 sites. All sites are required to submit annual reports, which contain various types of information, depending on the site characteristics and events. A summary of the monitoring and reporting requirements is found in Table 4.

Table 4 - Required Monitoring Elements for Risk Levels

	Visual	Non-visible Pollutant	Effluent	Receiving Water
Risk Level 1	three types required for all Risk Levels: non-storm water, pre-rain and post-rain	As needed for all Risk Levels (see below)	where applicable	not required
Risk Level 2			pH, turbidity	not required
Risk Level 3			(if NEL exceeded) pH, turbidity and SSC	(if NEL exceeded) pH, turbidity and SSC. Bioassessment for sites 30 acres or larger.

a. Visual

All dischargers are required to conduct quarterly, non-storm water visual inspections. For these inspections, the discharger must visually observe each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources. For storm-related inspections, dischargers must visually observe storm water discharges at all discharge locations within two business days after a qualifying event. For this requirement, a qualifying rain event is one producing precipitation of ½ inch or more of discharge. Dischargers must conduct a post-storm event inspection to

(1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify any additional BMPs necessary and revise the SWPPP accordingly. Dischargers must maintain on-site records of all visual observations, personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

b. Non-Visible Pollutant Monitoring

This General Permit requires that all dischargers develop a sampling and analysis strategy for monitoring pollutants that are not visually detectable in storm water. Monitoring for non-visible pollutants must be required at any construction site when the exposure of construction materials occurs and where a discharge can cause or contribute to an exceedance of a water quality objective.

Of significant concern for construction discharges are the pollutants found in materials used in large quantities at construction sites throughout California and exposed throughout the rainy season, such as cement, flyash, and other recycled materials or by-products of combustion. The water quality standards that apply to these materials will depend on their composition. Some of the more common storm water pollutants from construction activity are not CTR pollutants. Examples of non-visible pollutants include glyphosate (herbicides), diazinon and chlorpyrifos (pesticides), nutrients (fertilizers), and molybdenum (lubricants). The use of diazinon and chlorpyrifos is a common practice among landscaping professionals and may trigger sampling and analysis requirements if these materials come into contact with storm water. High pH values from cement and gypsum, high pH and SSC from wash waters, and chemical/fecal contamination from portable toilets, also are not CTR pollutants. Although some of these constituents do have numeric water quality objectives in individual Basin Plans, many do not and are subject only to narrative water quality standards (i.e. not causing toxicity). Dischargers are encouraged to discuss these issues with Regional Water Board staff and other storm water quality professionals.

The most effective way to avoid the sampling and analysis requirements, and to ensure permit compliance, is to avoid the exposure of construction materials to precipitation and storm water runoff. Materials that are not exposed do not have the potential to enter storm water runoff, and therefore receiving waters sampling is not required. Preventing contact between storm water and construction materials is one of the most important BMPs at any construction site.

Preventing or eliminating the exposure of pollutants at construction sites is not always possible. Some materials, such as soil amendments, are designed to be used in a manner that will result in exposure to storm water. In these cases, it is important to make sure that these materials are applied according to the manufacturer's instructions and at a time when they are unlikely to be washed away. Other construction materials can be exposed when storage, waste disposal or the application of the material is done in a manner not protective of water quality. For these situations, sampling is required unless there is capture and containment of all storm water that has been exposed. In cases where construction materials may be exposed to storm water, but the storm water is contained and is not allowed to run off the site, sampling will only be required when inspections show that the containment failed or is breached, resulting in potential exposure or discharge to receiving waters.

The discharger must develop a list of potential pollutants based on a review of potential sources, which will include construction materials soil amendments, soil treatments, and historic contamination at the site. The discharger must review existing environmental and real estate documentation to determine the potential for pollutants that could be present on the construction site as a result of past land use activities.

Good sources of information on previously existing pollution and past land uses include:

i. Environmental Assessments;

ii. Initial Studies;

iii. Phase 1 Assessments prepared for property transfers; and

iv. Environmental Impact Reports or Environmental Impact Statements prepared under the requirements of the National Environmental Policy Act or the California Environmental Quality Act.

In some instances, the results of soil chemical analyses may be available and can provide additional information on potential contamination.

The potential pollutant list must include all non-visible pollutants that are known or should be known to occur on the construction site including, but not limited to, materials that:

i. are being used in construction activities;

ii. are stored on the construction site;

iii. were spilled during construction operations and not cleaned up;

iv. were stored (or used) in a manner that created the potential for a release of the materials during past land use activities;

v. were spilled during previous land use activities and not cleaned up; or

vi. were applied to the soil as part of past land use activities.

C. Effluent Monitoring

Federal regulations[12] require effluent monitoring for discharges subject to NALs and NELs. Subsequently, all Risk Level 2 and 3 dischargers must perform sampling and analysis of effluent discharges to characterize discharges associated with construction activity from the entire area disturbed by the project. Dischargers must collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of ½ inch or more at the time of discharge.

Table 5 - Storm Water Effluent Monitoring Requirements by Risk Level

	Frequency	Effluent Monitoring (Section E, below)
Risk Level 1	when applicable	non-visible pollutant parameters (if applicable)
Risk Level 2	Minimum of 3 samples per day during qualifying rain event characterizing discharges associated with construction activity from the entire project disturbed area.	pH, turbidity, and non-visible pollutant parameters (if applicable)
Risk Level 3	Minimum of 3 samples per day during qualifying rain event characterizing discharges associated with construction activity from the entire project disturbed area.	If NEL exceeded: pH, turbidity and suspended sediment concentration (SSC)., Plus non-visible pollutant parameters if applicable

Risk Level 1 dischargers must analyze samples for:

[12] 40 C.F.R. § 122.44.

i. any parameters indicating the presence of pollutants identified in the pollutant source assessment required in Attachment C contained in the General Permit.

Risk Level 2 dischargers must analyze samples for:

i. pH and turbidity;

ii. any parameters indicating the presence of pollutants identified in the pollutant source assessment required in Attachment D contained in the General Permit, and

iii. any additional parameters for which monitoring is required by the Regional Water Board.

Risk Level 3 dischargers must analyze samples for:

i. pH, turbidity and SSC;

ii. any parameters indicating the presence of pollutants identified in the pollutant source assessment required in Attachment E contained in the General Permit, and

iii. any additional parameters for which monitoring is required by the Regional Water Board.

2. **Linear Monitoring and Sampling Requirements**

Attachment A, establishes minimum monitoring and reporting requirements for all LUPs. It establishes different monitoring requirements depending on project complexity and risk to water quality. The monitoring requirements for Type 1 LUPs are less than Type 2 & 3 projects because Type 1 projects have a lower potential to impact water quality.

A discharger shall prepare a monitoring program prior to the start of construction and immediately implement the program at the start of construction for LUPs. The monitoring program must be implemented at the appropriate level to protect water quality at all times throughout the life of the project.

a. **Type 1 LUP Monitoring Requirements**

A discharger must conduct daily visual inspections of Type 1 LUPs during working hours while construction activities are occurring. Inspections are to be conducted by qualified personnel and can be conducted in conjunction with other daily activities. Inspections will be conducted to ensure the BMPs are adequate, maintained, and in place at the end of the construction day. The discharger will revise the SWPPP, as appropriate, based on the results of the daily inspections. Inspections can be discontinued in non-active construction areas where soil disturbing activities have been completed and final stabilization has been achieved (e.g., trench has been paved, substructures have been installed, and successful final vegetative cover or other stabilization criteria have been met).

A discharger shall implement the monitoring program for inspecting Type 1 LUPs. This program requires temporary and permanent stabilization BMPs after active construction is completed. Inspection activities will continue until adequate permanent stabilization has been established and will continue in areas where re-vegetation is chosen until minimum vegetative coverage has been established. Photographs shall be taken during site inspections and submitted to the State Water Board.

b. Type 2 & 3 LUP Monitoring Requirements

A discharger must conduct daily visual inspections of Type 2 & 3 LUPs during working hours while construction activities are occurring. Inspections are to be conducted by qualified personnel and can be in conjunction with other daily activities.

All dischargers of Type 2 & 3 LUPs are required to conduct inspections by qualified personnel of the construction site during normal working hours prior to all anticipated storm events and after actual storm events. During extended storm events, the discharger shall conduct inspections during normal working hours for each 24-hour period. Inspections can be discontinued in non-active construction areas where soil disturbing activities have been completed and final stabilization has been achieved (e.g., trench has been paved, substructures installed, and successful vegetative cover or other stabilization criteria have been met).

The goals of these inspections are (1) to identify areas contributing to a storm water discharge; (2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the General Permit; and (3) to determine whether additional control practices or corrective maintenance activities are needed. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible, depending upon worker safety.

All dischargers shall develop and implement a monitoring program for inspecting Type 2 & 3 LUPs that require temporary and permanent stabilization BMPs after active construction is completed. Inspections will be conducted to ensure the BMPs are adequate and maintained. Inspection activities will continue until adequate permanent stabilization has been established and will continue in areas where revegetation is chosen until minimum vegetative coverage has been established.

A log of inspections conducted before, during, and after the storm events must be maintained in the SWPPP. The log will provide the date and time of the inspection and who conducted the inspection. Photographs must be taken during site inspections and submitted to the State Water Board.

c. Sampling Requirements for all LUP Project Types

LUPs are also subject to sampling and analysis requirements for visible pollutants (i.e., sedimentation/siltation, turbidity) and for non-visible pollutants.

Sampling for visible pollutants is required for Type 2 & 3 LUPs.

Non-visible pollutant monitoring is required for pollutants associated with construction sites and activities that (1) are not visually detectable in storm water discharges, and (2) are known or should be known to occur on the construction site, and (3) could cause or contribute to an exceedance of water quality objectives in the receiving waters. Sample collection for non-visible pollutants must only be required (1) during a storm event when pollutants associated with construction activities may be discharged with storm water runoff due to a spill, or in the event there was a breach, malfunction, failure, and/or leak of any BMP, and (2) when the discharger has failed to adequately clean the area of material and pollutants. Failure to implement appropriate BMPs will trigger the same sampling requirements as those required for a breach, malfunction and/or leak, or when the discharger has failed to implement appropriate BMPs prior to the next storm event.

Additional monitoring parameters may be required by the Regional Water Boards.

It is not anticipated that many LUPs will be required to collect samples for pollutants not visually detected in runoff due to the nature and character of the construction site and activities as previously described in this fact sheet. Most LUPs are constructed in urban areas with public access (e.g., existing roadways, road shoulders, parking areas, etc.). This raises a concern regarding the potential contribution of pollutants from vehicle use and/or from normal activities of the public (e.g., vehicle washing, landscape fertilization, pest spraying, etc.) in runoff from the project site. Since the dischargers are not the land

owners of the project area and are not able to control the presence of these pollutants in the storm water that runs through their projects, it is not the intent of this General Permit to require dischargers to sample for these pollutants. This General Permit does not require the discharger to sample for these types of pollutants except where the discharger has brought materials onsite that contain these pollutants and when a condition (e.g., breach, failure, etc.) described above occurs.

3. Receiving Water Monitoring

In order to ensure that receiving water limitations are met, discharges subject to numeric effluent limitations (i.e., Risk Level 3, LUP Type 3, and ATS with direct discharges into receiving waters) must also monitor the downstream receiving water(s) for turbidity, SSC, and pH (if applicable) when an NEL is exceeded.

a. Bioassessment Monitoring

This General Permit requires a bioassessment of receiving waters for dischargers of Risk Level 3 or LUP Type 3 construction projects equal to or larger than 30 acres with direct discharges into receiving waters. Benthic macroinvertebrate samples will be taken upstream and downstream of the site's discharge point in the receiving water. Bioassessments measure the quality of the stream by analyzing the aquatic life present. Higher levels of appropriate aquatic species tend to indicate a healthy stream; whereas low levels of organisms can indicate stream degradation. Active construction sites have the potential to discharge large amounts of sediment and pollutants into receiving waters. Requiring a bioassessment for large project sites, with the most potential to impact water quality, provides a snapshot of the health of the receiving water prior to initiation of construction activities. This snapshot can be used in comparison to the health of the receiving water after construction has commenced.

Each ecoregion (biologically and geographically related area) in the State has a specific yearly peak time where stream biota is in a stable and abundant state. This time of year is called an Index Period. The bioassessment requirements in this General Permit, requires benthic macroinvertebrate sampling within a sites index period. The State Water Board has developed a map designating index periods for the ecoregions in the State (see State Water Board Website).

This General Permit requires the bioassessment methods to be in accordance with the Surface Water Ambient Monitoring Program (SWAMP) in order to provide data consistency within the state as well as generate useable biological stream data.

Table 6 - Receiving Water Monitoring Requirements

	Receiving Water Monitoring Parameters
Risk Level 1 /LUP Type 1	not required
Risk Level 2 / LUP Type 2	not required
Risk Level 3 / LUP Type 3	If NEL exceeded: pH (if applicable), turbidity, and SSC. Bioassessment for sites 30 acres or larger.

4. Reporting Requirements

a. NEL Violation Report

All Risk Level 3 and LUP Type 3 dischargers must electronically submit all storm event sampling results to the State and Regional Water Boards, via SMARTS, no later than 5 days after the conclusion of the storm event. The purpose of the electronic filing of the NEL Violation Report is to 1) inform stakeholder agencies and organizations and the general public, and 2) notify the State and Regional Water Boards of

the exceedance so that they can determine whether any follow-up (e.g., inspection, enforcement, etc.) is necessary to bring the site into compliance.

In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event, Risk level 3/LUP Type 3 dischargers shall report the on-site rain gauge reading and nearby governmental rain gauge readings for verification. Specifically, the NEL Exceedance Report is required to contain:

- the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit are to be reported as "less than the method detection limit or <MDL");
- the date, place, and time of sampling;
- any visual observation (inspections);
- any measurements, including precipitation; and
- a description of the current BMPs associated with the effluent sample that exceeded the NEL and any proposed corrective actions taken.

b. **NAL Exceedance Report**

All Risk Level 3 and LUP Type 3 dischargers must electronically submit all storm event sampling results to the State and Regional Water Boards, via the electronic data system, no later than 5 days after the conclusion of the storm event. In the event that any effluent sample exceeds an applicable NAL, all Risk Level 2 and LUP Type 2 dischargers must electronically submit all storm event sampling results to the State and Regional Water Boards no later than 10 days after the conclusion of the storm event. The Regional Water Boards have the authority to require the submittal of an NAL Exceedance Report.

Specifically, the NAL Exceedance Report is required to contain:

- the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit are to be reported as "less than the method detection limit or <MDL");
- the date, place, and time of sampling;
- any visual observation (inspections);
- any measurements, including precipitation; and
- a description of the current BMPs associated with the effluent sample that exceeded the NAL and any proposed corrective actions taken.

c. **Annual Report**

All dischargers must prepare and electronically submit an annual report no later than September 1 of each year using the Storm water Multi-Application Reporting and Tracking System (SMARTS). The Annual Report must include a summary and evaluation of all sampling and analysis results, original laboratory reports, chain of custody forms, a summary of all corrective actions taken during the compliance year, and identification of any compliance activities or corrective actions that were not implemented.

5. Record Keeping

According to 40 C.F.R. Parts 122.21(p) and 122.41(j), the discharger is required to retain paper or electronic copies of all records required by this General Permit for a period of at least three years from the date generated or the date submitted to the State Water Board or Regional Water Boards. A discharger must retain records for a period beyond three years as directed by Regional Water Board.

J. Risk Determination

1. Traditional Projects

a. Overall Risk Determination

There are two major requirements related to site planning and risk determination in this General Permit. The project's overall risk is broken up into two elements – (1) project sediment risk (the relative amount of sediment that can be discharged, given the project and location details) and (2) receiving water risk (the risk sediment discharges pose to the receiving waters).

Project Sediment Risk:
Project Sediment Risk is determined by multiplying the R, K, and LS factors from the Revised Universal Soil Loss Equation (RUSLE) to obtain an estimate of project-related bare ground soil loss expressed in tons/acre. The RUSLE equation is as follows:

A = (R)(K)(LS)(C)(P)

Where: A = the rate of sheet and rill erosion
R = rainfall-runoff erosivity factor
K = soil erodibility factor
LS = length-slope factor
C = cover factor (erosion controls)
P = management operations and support practices (sediment controls)

The C and P factors are given values of 1.0 to simulate bare ground conditions.

There is a map option and a manual calculation option for determining soil loss. For the map option, the R factor for the project is calculated using the online calculator at http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm. The product of K and LS are shown on Figure 1. To determine soil loss in tons per acre, the discharger multiplies the R factor times the value for K times LS from the map.

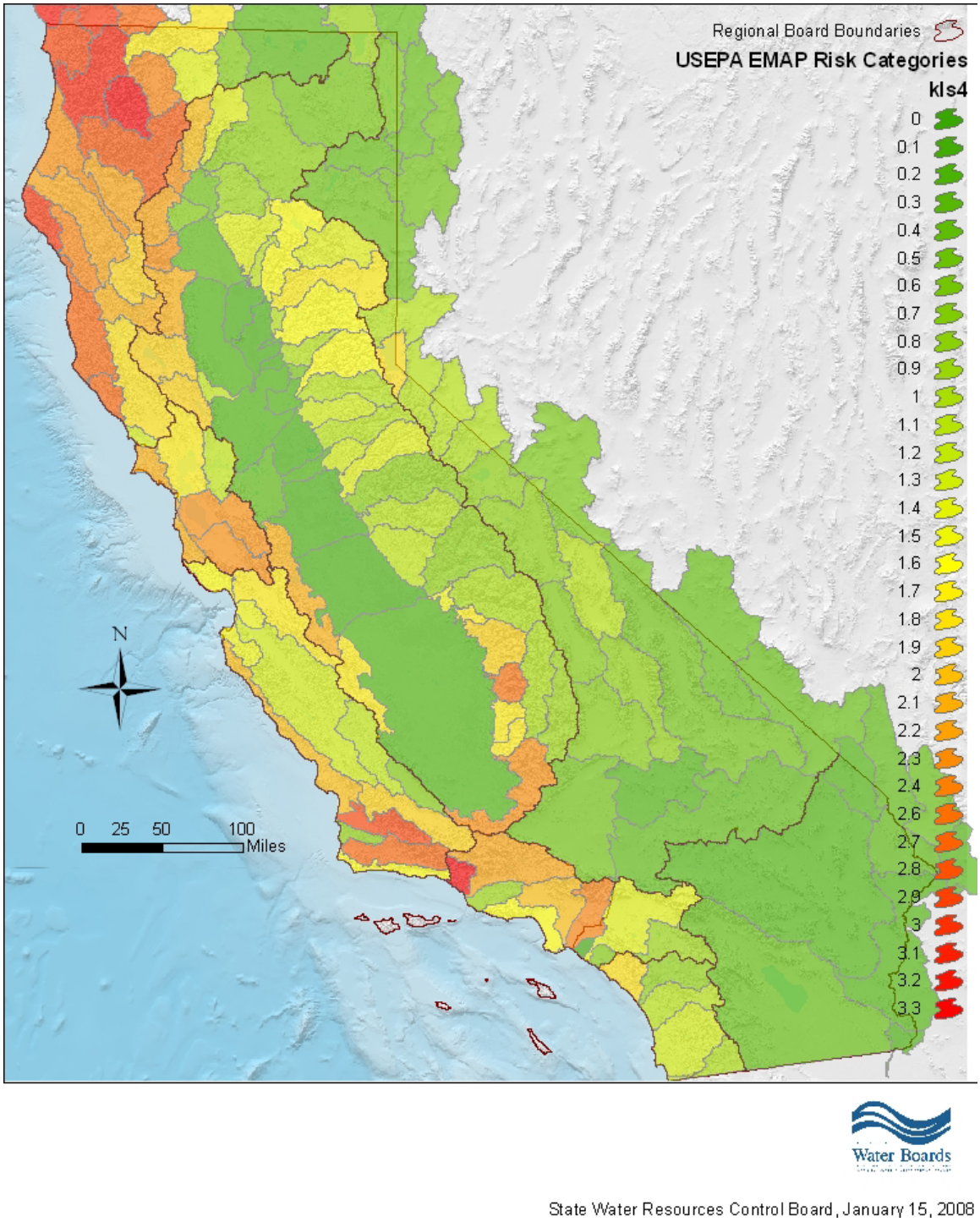

Figure 1 -Statewide Map of K * LS

For the manual calculation option, the R factor for the project is calculated using the online calculator at http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm. The K and LS factors are determined using Appendix 1.

Soil loss of less than 15 tons/acre is considered **low** sediment risk.
Soil loss between 15 and 75 tons/acre is **medium** sediment risk.
Soil loss over 75 tons/acre is considered **high** sediment risk.

The soil loss values and risk categories were obtained from mean and standard deviation RKLS values from the USEPA EMAP program. High risk is the mean RKLS value plus two standard deviations. Low risk is the mean RKLS value minus two standard deviations.

Receiving Water Risk:
Receiving water risk is based on whether a project drains to a sediment-sensitive waterbody. A sediment-sensitive waterbody is either

on the most recent 303d list for waterbodies impaired for sediment;
has a USEPA-approved Total Maximum Daily Load implementation plan for sediment; **or**
has the beneficial uses of COLD, SPAWN, and MIGRATORY.

A project that meets at least one of the three criteria has a high receiving water risk. A list of sediment-sensitive waterbodies will be posted on the State Water Board's website. It is anticipated that an interactive map of sediment sensitive water bodies in California will be available in the future.

The Risk Levels have been altered by eliminating the possibility of a Risk Level 4, and expanding the constraints for Risk Levels 1, 2, and 3. Therefore, projects with high receiving water risk and high sediment risk will be considered a Risk Level 3 risk to water quality.

In response to public comments, the Risk Level requirements have also been changed such that Risk Level 1 projects will be subject to minimum BMP and visual monitoring requirements, Risk Level 2 projects will be subject to NALs and some additional monitoring requirements, and Risk Level 3 projects will be subject to NELs, and more rigorous monitoring requirements such as receiving water monitoring and in some cases bioassessment.

Table 7 - Combined Risk Level Matrix

Combined Risk Level Matrix				
Receiving Water Risk		Sediment Risk		
		Low Medium		High
	Low	Level 1	Level 2	
	High	Level 2		Level 3

b. Effluent Standards

All dischargers are subject to the narrative effluent limitations specified in the General Permit. The narrative effluent limitations require storm water discharges associated with construction activity to meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require controls of pollutant discharges that utilize BAT and BCT to reduce pollutants and any more stringent controls necessary to meet water quality standards.

Risk Level 2, and 3 dischargers are subject to numeric effluent standards comparable to the project's risk to water quality. Risk Level 2 dischargers that pose a medium risk to water quality are subject to technology-based NALs for pH and turbidity. Risk Level 3 dischargers that pose a high risk to water quality are subject to technology-based NALs and technology-based NELs for pH and turbidity.

c. Good Housekeeping

Proper handling and managing of construction materials can help minimize threats to water quality. The discharger must consider good housekeeping measures for: construction materials, waste management, vehicle storage & maintenance, landscape materials, and potential pollutant sources. Examples include; conducting an inventory of products used, implementing proper storage & containment, and properly cleaning all leaks from equipment and vehicles.

d. Non-Storm Water Management

Non-storm water discharges directly connected to receiving waters or the storm drain system have the potential to negatively impact water quality. The discharger must implement measures to control all non-storm water discharges during construction, and from dewatering activities associated with construction. Examples include; properly washing vehicles in contained areas, cleaning streets, and minimizing irrigation runoff.

e. Erosion Control

The best way to minimize the risk of creating erosion and sedimentation problems during construction is to disturb as little of the land surface as possible by fitting the development to the terrain. When development is tailored to the natural contours of the land, little grading is necessary and, consequently, erosion potential is lower.[14] Other effective erosion control measures include: preserving existing vegetation where feasible, limiting disturbance, and stabilizing and re-vegetating disturbed areas as soon as possible after grading or construction activities. Particular attention must be paid to large, mass-graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great and where there is potential for significant sediment discharge from the site to surface waters. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single most important factor in reducing erosion at construction sites. The discharger is required to consider measures such as: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. These erosion control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Erosion control BMPs should be the primary means of preventing storm water contamination, and sediment control techniques should be used to capture any soil that becomes eroded.[13]

Risk Level 3 dischargers pose a higher risk to water quality and are therefore additionally required to ensure that post-construction soil loss is equivalent to or less than the pre-construction levels.

f. Sediment Control

Sediment control BMPs should be the secondary means of preventing storm water contamination. When erosion control techniques are ineffective, sediment control techniques should be used to capture any soil that becomes eroded. The discharger is required to consider perimeter control measures such as: installing silt fences or placing straw wattles below slopes. These sediment control measures are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed.

Because Risk Level 2 and 3 dischargers pose a higher risk to water quality, additional requirements for the application of sediment controls are imposed on these projects. This General Permit also authorizes the Regional Water Boards to require Risk Level 3 dischargers to implement additional site-specific

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[13] U.S. Environmental Protection Agency. 2007. Developing Your Storm Water Pollution Prevention Plan: A Guide for Construction Sites.

sediment control requirements if the implementation of other erosion or sediment controls are not adequately protecting the receiving waters.

g. Run-on and Runoff Control

Inappropriate management of run-on and runoff can result in excessive physical impacts to receiving waters from sediment and increased flows. The discharger is required to manage all run-on and runoff from a project site. Examples include: installing berms and other temporary run-on and runoff diversions.

Risk Level 1 dischargers with lower risks to impact water quality are not subject to the run-on and runoff control requirements unless an evaluation deems them necessary or visual inspections show that such controls are required.

h. Inspection, Maintenance and Repair

All measures must be periodically inspected, maintained and repaired to ensure that receiving water quality is protected. Frequent inspections coupled with thorough documentation and timely repair is necessary to ensure that all measures are functioning as intended.

i. Rain Event Action Plan (REAP)

A Rain Event Action Plan (REAP) is a written document, specific for each rain event. A REAP should be designed that when implemented it protects all exposed portions of the site within 48 hours of any likely precipitation event forecast of 50% or greater probability.

This General Permit requires Risk Level 2 and 3 dischargers to develop and implement a REAP designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50% or greater probability of precipitation in the project area. (The National Oceanic and Atmospheric Administration (NOAA) defines a chance of precipitation as a probability of precipitation of 30% to 50% chance of producing precipitation in the project area.[14] NOAA defines the probability of precipitation (PoP) as the likelihood of occurrence (expressed as a percent) of a measurable amount (0.01 inch or more) of liquid precipitation (or the water equivalent of frozen precipitation) during a specified period of time at any given point in the forecast area.) Forecasts are normally issued for 12-hour time periods. Descriptive terms for uncertainty and aerial coverage are used as follows:

Table 8 -National Oceanic and Atmospheric Administration (NOAA) Definition of Probability of Precipitation (PoP)

PoP	Expressions of Uncertainty	Aerial Coverage
0%	none used	none used
10%	none used	isolated
20%	slight chance	isolated
30-50%	chance	scattered

[14] http://www.crh.noaa.gov/lot/severe/wxterms.php.

60-70%	likely	numerous
80-100%	none used	none used

The discharger must obtain the precipitation forecast information from the National Weather Service Forecast Office (http://www.srh.noaa.gov/).

2. Linear Projects

a. Linear Risk Determination

LUPs vary in complexity and water quality concerns based on the type of project. This General Permit has varying application requirements based on the project's risk to water quality. Factors that lead to the characterization of the project include location, sediment risk, and receiving water risk.

Based on the location and complexity of a project area or project section area, LUPs are separated into project types. As described below, LUPs have been categorized into three project types.

i. *Type 1 LUPs*

Type 1 LUPs are those construction projects where:

(1) 70 percent or more of the construction activity occurs on a paved surface and where areas disturbed during construction will be returned to preconstruction conditions or equivalent protection established at the end of the construction activities for the day, or

(2) greater than 30 percent of construction activities occur within the non-paved shoulders or land immediately adjacent to paved surfaces, or where construction occurs on unpaved improved roads, including their shoulders or land immediately adjacent to them where:

Areas disturbed during construction will be returned to pre-construction conditions or equivalent protection established at the end of the construction activities for the day to minimize the potential for erosion and sediment deposition, and

Areas where established vegetation was disturbed during construction will be stabilized and re-vegetated by the end of project. When required, adequate temporary stabilization Best Management Practices (BMPs) will be installed and maintained until vegetation is established to meet minimum cover requirements established in this General Permit for final stabilization.

Type 1 LUPs typically do not have a high potential to impact storm water quality because (1) these construction activities are not typically conducted during a rain event, (2) these projects are normally constructed over a short period of time[15], minimizing the duration that pollutants could potentially be exposed to rainfall; and (3) disturbed soils such as those from trench excavation are required to be hauled away, backfilled into the trench, and/or covered (e.g., metal plates, pavement, plastic covers over spoil piles) at the end of the construction day.

[15] Short period of time refers to a project duration of weeks to months, but typically less than one year in duration.

Type 1 LUPs are determined during the risk assessment found in Attachment A.1 to be 1) low sediment risk and low receiving water risk; 2) low sediment risk and medium receiving water risk; and 3) medium sediment risk and low receiving water risk.

This General Permit requires the discharger to ensure a SWPPP is developed for these construction activities that is specific to project type, location and characteristics.

ii. ***Type 2 LUPs:***

Type 2 projects are determined to have a combination of High, Medium, and Low project sediment risk along with High, Medium, and Low receiving water risk. Like Type 1 projects, Type 2 projects are typically constructed over a short period of time. However, these projects have a higher potential to impact water quality because they:

(1) typically occur outside the more urban/developed areas;

(2) have larger areas of soil disturbance that are not closed or restored at the end of the day;

(3) may have onsite stockpiles of soil, spoil and other materials;

(4) cross or occur in close proximity to a wide variety of sensitive resources that may include, but are not limited to, steep topography and/or water bodies; and

(5) have larger areas of disturbed soils that may be exposed for a longer time interval before final stabilization, cleanup and/or reclamation occurs.

This General Permit requires the discharger to develop and implement a SWPPP for these construction activities that are specific for project type, location and characteristics.

iii. ***Type 3 LUPs:***

Type 3 projects are determined to have a combination of High and Medium project sediment risk along with High and Medium receiving water risk. Similar to Type 2 projects, Type 3 projects have a higher potential to impact water quality because they:

(1) typically occur outside of the more urban/developed areas;

(2) have larger areas of soil disturbance that are not closed or restored at the end of the day;

(3) may have onsite stockpiles of soil, spoil and other materials;

(4) cross or occur in close proximity to a wide variety of sensitive resources that may include, but are not limited to, steep topography and/or water bodies; and

(5) have larger areas of disturbed soils that may be exposed for a longer time interval before final stabilization, cleanup and/or reclamation occurs.

This General Permit requires the discharger to develop and implement a SWPPP for these construction activities that are specific for project type, location, and characteristics.

b. **Linear Effluent Standards**

All LUPs are subject to the narrative effluent limitations specified in the General Permit.

Type 2 and 3 LUPs are subject to NELs comparable to the project type's risk to water quality. Type 2 projects that pose an intermediate risk to water quality are subject to technology-based NALs for pH and turbidity. Type 3 projects posing a high risk to water quality are subject to technology-based NALs and NELs for pH and turbidity.

c. Linear Good Housekeeping

Improper use and handling of construction materials could potentially cause a threat to water quality. In order to ensure proper site management of these construction materials, all LUP dischargers must comply with a minimum set of Good Housekeeping measures specified in Attachment A of this General Permit.

d. Linear Non-Storm Water Management

In order to ensure control of all non-storm water discharges during construction, all LUP dischargers must comply with the Non-Storm Water Management measures specified in Attachment A of this General Permit.

e. Linear Erosion Control

This General Permit requires all LUP dischargers to implement effective wind erosion control measures, and soil cover for inactive areas. Type 3 LUPs posing a higher risk to water quality are additionally required to ensure the post-construction soil loss is equivalent to or less than the pre-construction levels.

f. Linear Sediment Control

In order to ensure control and containment of all sediment discharges, all LUP dischargers must comply with the general Sediment Control measures specified in Attachment A or this General Permit. Additional requirements for sediment controls are imposed on Type 2 & 3 LUPs due to their higher risk to water quality.

g. Linear Run-on and Runoff Control

Discharges originating outside of a project's perimeter and flowing onto the property can adversely affect the quantity and quality of discharges originating from a project site. In order to ensure proper management of run-on and runoff, all LUPs must comply with the run-on and runoff control measures specified in Attachment A of this General Permit. Due to the lower risk of impacting water quality, Type 1 LUPs are not required to implement run-on and runoff controls unless deemed necessary by the discharger.

h. Linear Inspection, Maintenance and Repair

Proper inspection, maintenance, and repair activities are important to ensure the effectiveness of on-site measures to control water quality. In order to ensure that inspection, maintenance, and repair activities are adequately performed, the all LUP dischargers a re required to comply with the Inspection, Maintenance, and Repair requirements specified in Attachment A of this General Permit.

K. ATS[16] Requirements

There are instances on construction sites where traditional erosion and sediment controls do not effectively control accelerated erosion. Under such circumstances, or under circumstances where storm water discharges leaving the site may cause or contribute to an exceedance of a water quality standard, the use of an Active Treatment System (ATS) may be necessary. Additionally, it may be appropriate to use an ATS when site constraints inhibit the ability to construct a correctly sized sediment basin, when clay and/or highly erosive soils are present, or when the site has very steep or long slope lengths.[17]

Although treatment systems have been in use in some form since the mid-1990s, the ATS industry in California is relatively young, and detailed regulatory standards have not yet been developed. Many developers are using these systems to treat storm water discharges from their construction sites. The new ATS requirements set forth in this General Permit are based on those in place for small wastewater treatment systems, ATS regulations from the Central Valley Regional Water Quality Control Board (September 2005 memorandum "2005/2006 Rainy Season – Monitoring Requirements for Storm Water Treatment Systems that Utilize Chemical Additives to Enhance Sedimentation"), the Construction Storm Water Program at the State of Washington's Department of Ecology, as well as recent advances in technology and knowledge of coagulant performance and aquatic safety.

The effective design of an ATS requires a detailed survey and analysis of site conditions. With proper planning, ATS performance can provide exceptional water quality discharge and prevent significant impacts to surface water quality, even under extreme environmental conditions.

These systems can be very effective in reducing the sediment in storm water runoff, but the systems that use additives/polymers to enhance sedimentation also pose a potential risk to water quality (e.g., operational failure, equipment failure, additive/polymer release, etc.). The State Water Board is concerned about the potential acute and chronic impacts that the polymers and other chemical additives may have on fish and aquatic organisms if released in sufficient quantities or concentrations. In addition to anecdotal evidence of polymer releases causing aquatic toxicity in California, the literature supports this concern.[18] For example, cationic polymers have been shown to bind with the negatively charged gills of fish, resulting in mechanical suffocation.[19] Due to the potential toxicity impacts, which may be caused by the release of additives/polymers into receiving waters, this General Permit establishes residual polymer monitoring and toxicity testing requirements have been established in this General Permit for discharges from construction sites that utilize an ATS in order to protect receiving water quality and beneficial uses.

The primary treatment process in an ATS is coagulation/flocculation. ATS's operate on the principle that the added coagulant is bound to suspended sediment, forming floc, which is gravitationally settled in tanks or a basin, or removed by sand filters. A typical installation utilizes an injection pump upstream from the clarifier tank, basin, or sand filters, which is electronically metered to both flow rate and suspended solids level of the influent, assuring a constant dose. The coagulant mixes and reacts with the influent, forming a dense floc. The floc may be removed by gravitational setting in a clarifier tank or basin, or by filtration. Water from the clarifier tank, basin, or sand filters may be routed through cartridge(s) and/or bag filters for final polishing. Vendor-specific systems use various methods of dose control, sediment/floc removal, filtration, etc., that are detailed in project-specific documentation. The

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[16] An ATS is a treatment system that employs chemical coagulation, chemical flocculation, or electrocoagulation in order to reduce turbidity caused by fine suspended sediment.
[17] Pitt, R., S. Clark, and D. Lake. 2006. Construction Site Erosion and Sediment Controls: Planning, Design, and Performance. DEStech Publications. Lancaster, PA. 370pp.
[18] RomØen, K., B. Thu, and Ø. Evensen. 2002. Immersion delivery of plasmid DNA II. A study of the potentials of a chitosan based delivery system in rainbow trout (*Oncorhynchus mykiss*) fry. *Journal of Controlled Release* **85**: 215-225.
[19] Bullock, G., V. Blazer, S. Tsukuda, and S. Summerfelt. 2000. Toxicity of acidified chitosan for cultured rainbow trout (*Oncorhynchus mykiss*). *Aquaculture* **185**:273-280.

particular coagulant/flocculant to be used for a given project is determined based on the water chemistry of the site because the coagulants are specific in their reactions with various types of sediments. Appropriate selection of dosage must be carefully matched to the characteristics of each site.

ATS's are operated in two differing modes, either Batch or Flow-Through. Batch treatment can be defined as Pump-Treat-Hold-Test-Release. In Batch treatment, water is held in a basin or tank, and is not discharged until treatment is complete. Batch treatment involves holding or recirculating the treated water in a holding basin or tank(s) until treatment is complete or the basin or storage tank(s) is full. In Flow-Through treatment, water is pumped into the ATS directly from the runoff collection system or storm water holding pond, where it is treated and filtered as it flows through the system, and is then directly discharged. "Flow-Through Treatment" is also referred to as "Continuous Treatment."

1. Effluent Standards

This General Permit establishes NELs for discharges from construction sites that utilize an ATS. These systems lend themselves to NELs for turbidity and pH because of their known reliable treatment. Advanced systems have been in use in some form since the mid-1990s. An ATS is considered reliable, can consistently produce a discharge of less than 10 NTU, and has been used successfully at many sites in several states since 1995 to reduce turbidity to very low levels.[20]

This General Permit contains "compliance storm event" exceptions from the technology-based NELs for ATS discharges. The rationale is that technology-based requirements are developed assuming a certain design storm. In the case of ATS the industry-standard design storm is 10-year, 24-hour (as stated in Attachment F of this General Permit), so the compliance storm event has been established as the 10-year 24-hour event as well to provide consistency.

2. Training

Operator training is critical to the safe and efficient operation and maintenance of the ATS, and to ensure that all State Water Board monitoring and sampling requirements are met. The General Permit requires that all ATS operators have training specific to using ATS's liquid coagulants.

L. Post-Construction Requirements

Under past practices, new and redevelopment construction activities have resulted in modified natural watershed and stream processes. This is caused by altering the terrain, modifying the vegetation and soil characteristics, introducing impervious surfaces such as pavement and buildings, increasing drainage density through pipes and channels, and altering the condition of stream channels through straightening, deepening, and armoring. These changes result in a drainage system where sediment transport capacity is increased and sediment supply is decreased. A receiving channel's response is dependent on dominant channel materials and its stage of adjustment.

Construction activity can lead to impairment of beneficial uses in two main ways. First, during the actual construction process, storm water discharges can negatively affect the chemical, biological, and physical properties of downstream receiving waters. Due to the disturbance of the landscape, the most likely pollutant is sediment, however pH and other non-visible pollutants are also of great concern. Second, after most construction activities are completed at a construction site, the finished project may result in significant modification of the site's response to precipitation. New development and redevelopment

[20] Currier, B., G. Minton, R. Pitt, L. Roesner, K. Schiff, M. Stenstrom, E. Strassler, and E. Strecker. 2006. The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities.

projects have almost always resulted in permanent post-construction water quality impacts because more precipitation ends up as runoff and less precipitation is intercepted, evapotranspired, and infiltrated.

General Permit 99-08-DWQ required the SWPPP to include a description of all post-construction BMPs on a site and a maintenance schedule. An effective storm water management strategy must address the full suite of storm events (water quality, channel protection, overbank flood protection, extreme flood protection) (Figure 2).

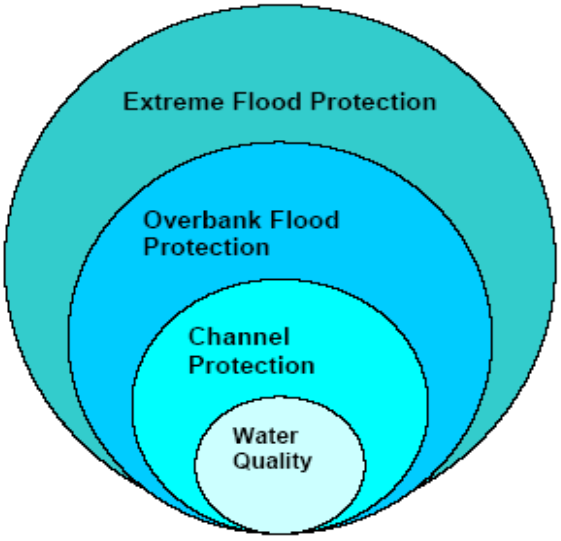


Figure 2 - Suite of Storm Events

The post-construction storm water performance standards in this General Permit specifically address water quality and channel protection events. Overbank flood protection and extreme flood protection events are traditionally dealt with in local drainage and flood protection ordinances. However, measures in this General Permit to address water quality and channel protection also reduce overbank and extreme flooding impacts. This General Permit aims to match post-construction runoff to pre-construction runoff for the 85th percentile storm event, which not only reduces the risk of impact to the receiving water's channel morphology but also provides some protection of water quality.

This General Permit clarifies that its runoff reduction requirements only apply to projects that lie outside of jurisdictions covered by a Standard Urban Storm water Management Plan (SUSMP) (or other more protective) post-construction requirements in either Phase I or Phase II permits.

Figures 3 and 4, below, show the General Permit enrollees (to Order 99-08-DWQ, as of March 10, 2008) overlaid upon a map with SUSMP (or more protective) areas in blue and purple. Areas without blue or purple indicate where the General Permit's runoff reduction requirements would actually apply.

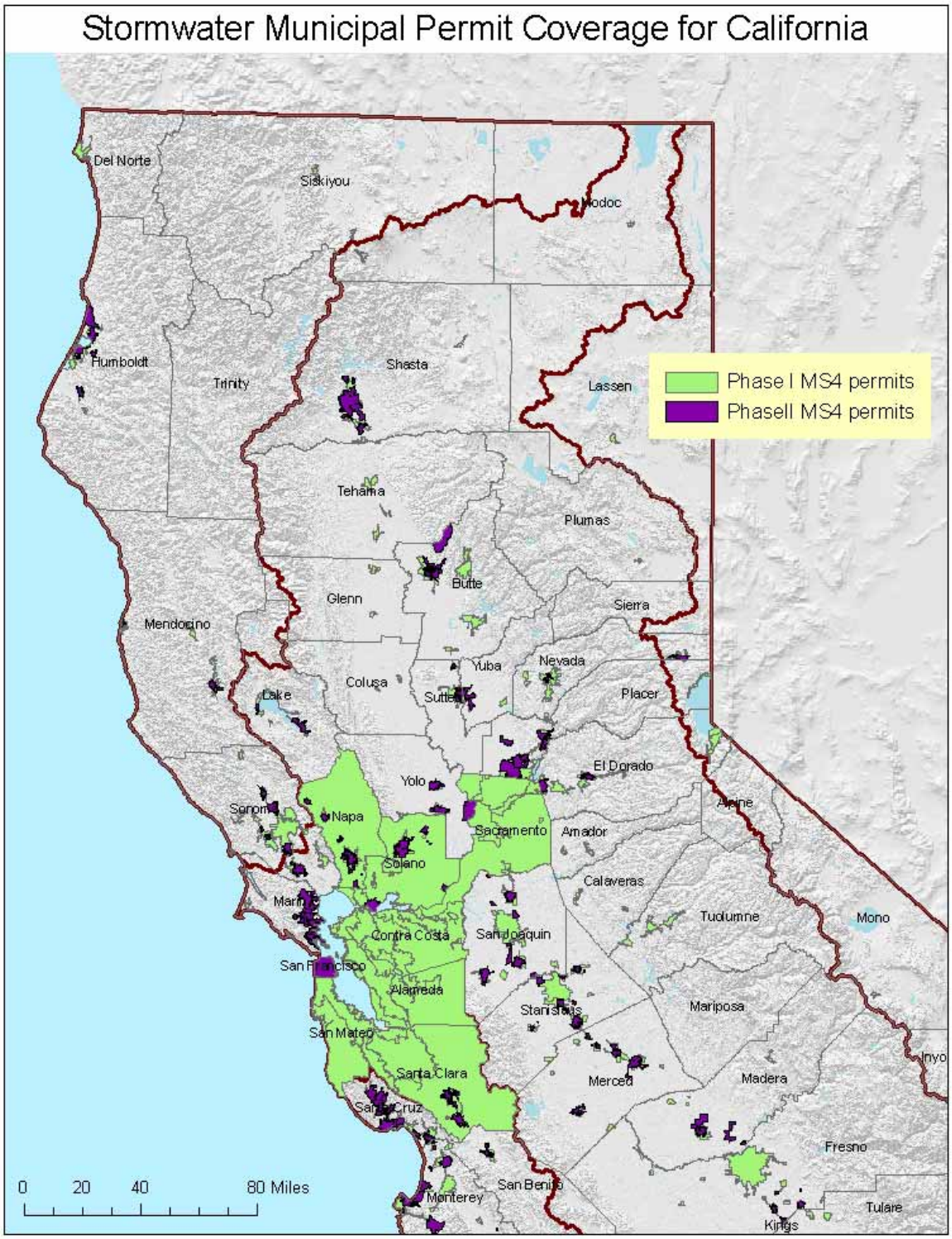
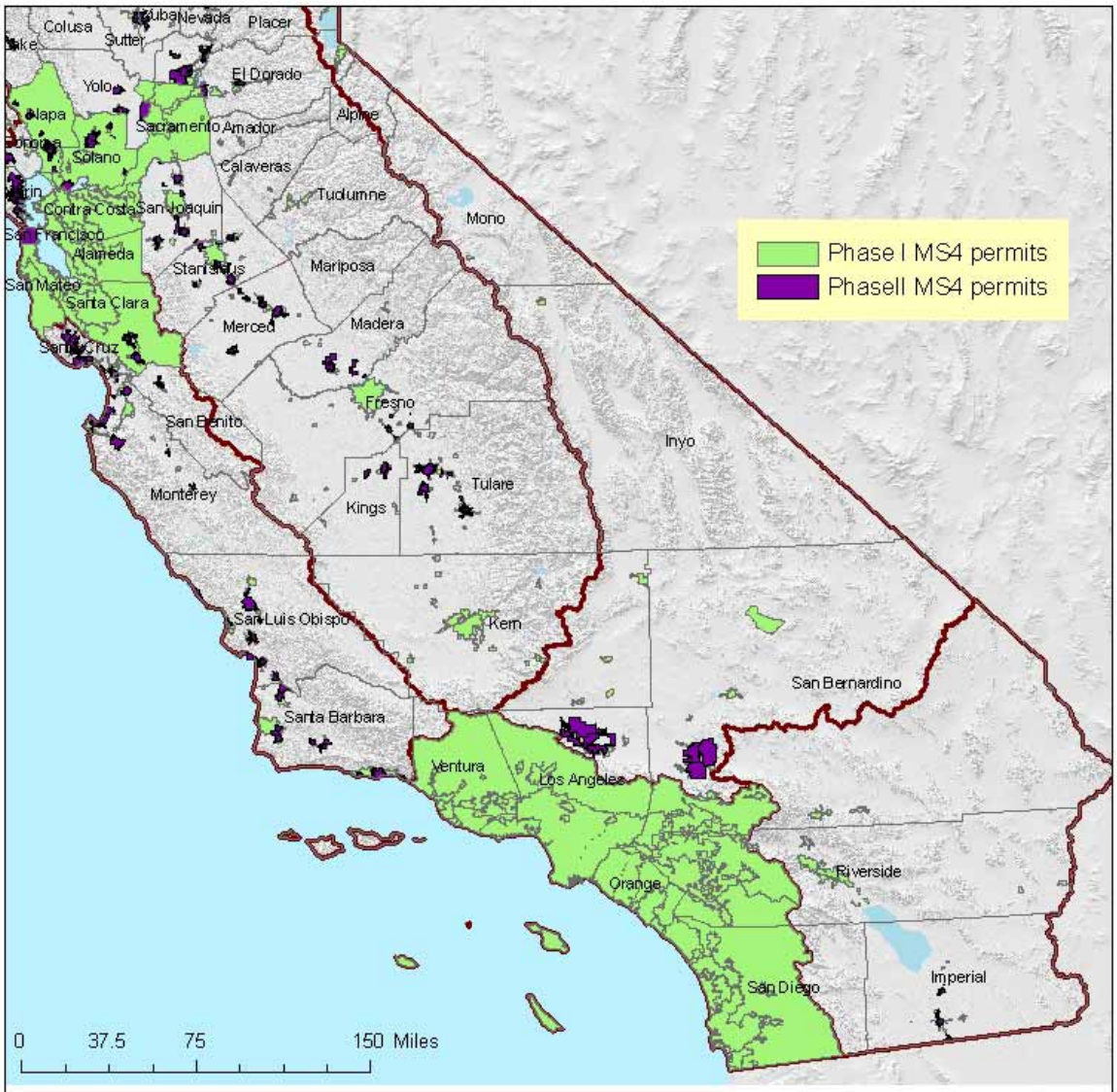


Figure 3 - Northern CA (2009) Counties / Cities With SUSMP-Plus Coverage



Stormwater Municipal Permit Coverage for California

Figure 4 - Southern CA (2009) Counties / Cities With SUSMP-Plus Coverage

Water Quality:
This General Permit requires dischargers to replicate the pre-project runoff water balance (defined as the amount of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event, or the smallest storm event that generates runoff, whichever is larger. Contemporary storm water management generally routes these flows directly to the drainage system, increasing pollutant loads and potentially causing adverse effects on receiving waters. These smaller water quality events happen much more frequently than larger events and generate much higher pollutant loads on an annual basis. There are other adverse hydrological impacts that result from not designing according to the site's pre-construction water balance. In Maryland, Klein[21] noted that baseflow decreases as the extent of urbanization increases. Ferguson and Suckling[22] noted a similar relation in watersheds in Georgia. On Long Island, Spinello and Simmons[23] noted substantial decreases in base flow in intensely urbanized watersheds.

The permit emphasizes runoff reduction through on-site storm water reuse, interception, evapo-transpiration and infiltration through non-structural controls and conservation design measures (e.g., downspout disconnection, soil quality preservation/enhancement, interceptor trees). Employing these measures close to the source of runoff generation is the easiest and most cost-effective way to comply with the pre-construction water balance standard. Using low-tech runoff reduction techniques close to the source is consistent with a number of recommendations in the literature.[24] In many cases, BMPs implemented close to the source of runoff generation cost less than end-of the pipe measures.[25] Dischargers are given the option of using Appendix 2 to calculate the required runoff volume or a watershed process-based, continuous simulation model such as the EPA's Storm Water Management Model (SWMMM) or Hydrologic Simulation Program Fortran (HSPF). Such methods used by the discharger will be reviewed by the Regional Water Board upon NOT application.

Channel Protection:
In order to address channel protection, a basic understanding of fluvial geomorphic concepts is necessary. A dominant paradigm in fluvial geomorphology holds that streams adjust their channel dimensions (width and depth) in response to long-term changes in sediment supply and bankfull discharge (1.5 to 2 year recurrence interval). The bankfull stage corresponds to the discharge at which channel maintenance is the most effective, that is, the discharge at which the moving sediment, forming or removing bars, forming or changing bends and meanders, and generally doing work that results in the average morphologic characteristics of channels.[26] Lane (1955 as cited in Rosgen 1996[27]) showed the generalized relationship between sediment load, sediment size, stream discharge and stream slope in Figure 5. A change in any one of these variables sets up a series of mutual adjustments in the companion variables with a resulting direct change in the physical characteristics of the stream channel.

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[21] Klein 1979 as cited in Delaware Department of Natural Resources (DDNR). 2004. Green Technology: The Delaware Urban Runoff Management Approach. Dover, DE. 117 pp.
[22] Ferguson and Suckling 1990 as cited Delaware Department of Natural Resources (DDNR). 2004. Green Technology: The Delaware Urban Runoff Management Approach. Dover, DE. 117 pp.
[23] Center for Watershed Protection (CWP). 2000. The Practice of Watershed Protection: Techniques for protecting our nation's streams, lakes, rivers, and estuaries. Ellicott City, MD. 741 pp.
[24] Bay Area Storm Water Management Agencies Association (BASMAA). 1997. Start at the Source: Residential Site Planning and Design Guidance Manual for Storm Water Quality Protection. Palo Alto, CA;
McCuen, R.H. 2003 Smart Growth: hydrologic perspective. Journal of Professional Issues in Engineering Education and Practice. Vol (129), pp.151-154;
Moglen, G.E. and S. Kim. 2007. Impervious imperviousness-are threshold based policies a good idea? Journal of the American Planning Association, Vol 73 No. 2. pp 161-171.
[25] Delaware Department of natural Resources (DDNR). 2004. Green technology: The Delaware urban Runoff Management Approcah. Dover, DE. 117 pp.
[26] Dunne, T and L.B. Leopold. 1978. Water in Environmental Planning. San Francisco W.H. Freeman and Company
[27] Rosgen. D.L. 1996. Applied River Morphology. Pagosa Springs. Wildland Hydrology

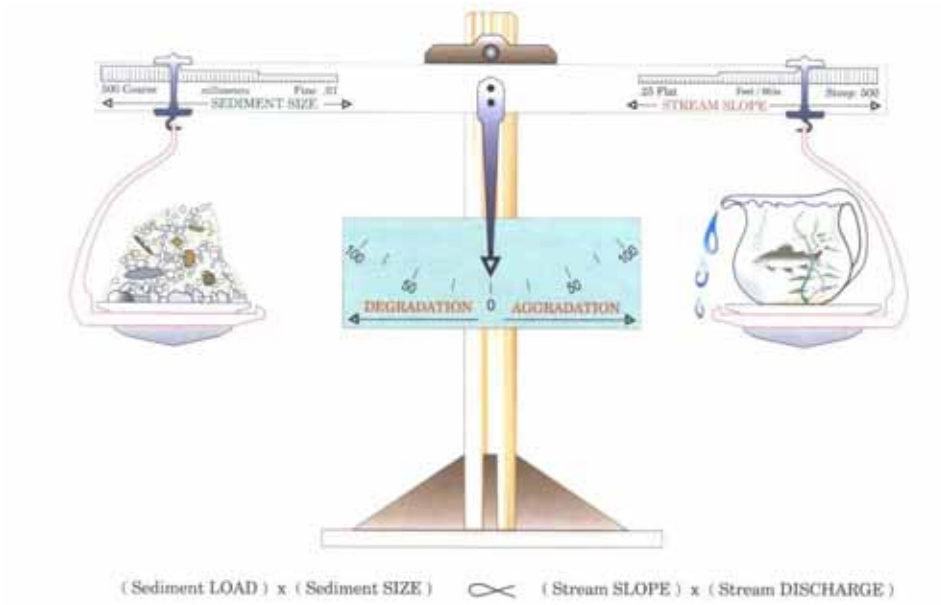

Figure 5 - Schematic of the Lane Relationship

After Lane (1955) as cited in Rosgen (1996)

Stream slope multiplied by stream discharge (the right side of the scale) is essentially an approximation of stream power, a unifying concept in fluvial geomorphology (Bledsoe 1999). Urbanization generally increases stream power and affects the resisting forces in a channel (sediment load and sediment size represented on the left side of the scale).

During construction, sediment loads can increase from 2 to 40,000 times over pre-construction levels.[28] Most of this sediment is delivered to stream channels during large, episodic rain events.[29] This increased sediment load leads to an initial aggradation phase where stream depths may decrease as sediment fills the channel, leading to a decrease in channel capacity and increase in flooding and overbank deposition. A degradation phase initiates after construction is completed.

Schumm et. al (1984) developed a channel evolution model that describes the series of adjustments from initial downcutting, to widening, to establishing new floodplains at lower elevations (Figure 6).

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[28] Goldman S.J., K. Jackson, and T.A. Bursztynsky. 1986. Erosion and Sediment Control Handbook. McGraw Hill. San Francisco.

[29] Wolman 1967 as cited in Paul, M.P. and J.L. Meyer. 2001. Streams in the Urban Landscape. *Annu. Rev.Ecol. Syst.* 32: 333-365.

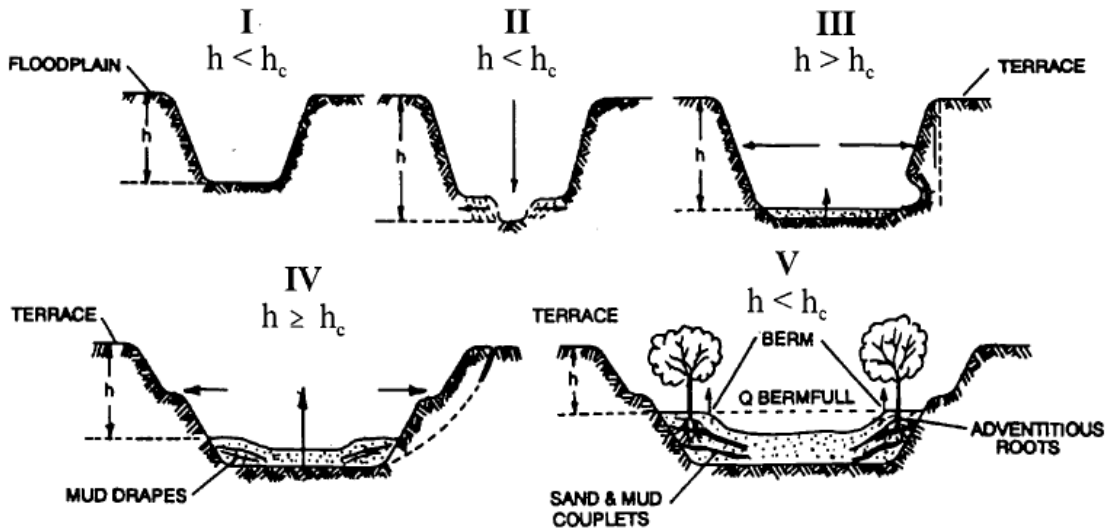

Figure 6 - Channel Changes Associated with Urbanization

After Incised Channel Evolution Sequence in Schumm et. al 1984

Channel incision (Stage II) and widening (Stages III and to a lesser degree, Stage IV) are due to a number of fundamental changes on the landscape. Connected impervious area and compaction of pervious surfaces increase the frequency and volume of bankfull discharges.[30] Increased drainage density (miles of stream length per square mile of watershed) also negatively impacts receiving stream channels.[31] Increased drainage density and hydraulic efficiency leads to an increase in the frequency and volume of bankfull discharges because the time of concentration is shortened. Flows from engineered pipes and channels are also often "sediment starved" and seek to replenish their sediment supply from the channel.

Encroachment of stream channels can also lead to an increase in stream slope, which leads to an increase in stream power. In addition, watershed sediment loads and sediment size (with size generally represented as the median bed and bank particle size, or d_{50}) decrease during urbanization.[32] This means that even if pre- and post-development stream power are the same, more erosion will occur in the post-development stage because the smaller particles are less resistant (provided they are non-cohesive).

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[30] Booth, D. B. and C. R. Jackson. 1997. Urbanization of Aquatic Systems: Degradation Thresholds, Storm Water Detection, and the Limits of Mitigation. Journal of the American Water Resources Association Vol. 33, No.5, pp. 1077-1089.

[31] May, C.W. 1998. Cumulative effects of urbanization on small streams in the Puget Sound Lowland ecoregion. Conference proceedings from Puget Sound Research '98 held March 12, 13 1998 in Seattle, WA;
Santa Clara Valley Urban Runoff Pollution Prevention Program. 2002. Hydromodification Management Plan Literature Review. 80 pp.

[32] Finkenbine, J.K., D.S. Atwater, and D.S. Mavinic. 2000. Stream health after urbanization. *J. Am. Water Resour. Assoc.* 36:1149-60;
Pizzuto, J.E. W.S. Hession, and M. McBride. 2000. Comparing gravel-bed rivers in paired urban and rural catchments of southeastern Pennsylvania. *Geology* 28:79-82.

As shown in Stages II and III, the channel deepens and widens to accommodate the increased stream power [33]and decrease in sediment load and sediment size. Channels may actually narrow as entrained sediment from incision is deposited laterally in the channel. After incised channels begin to migrate laterally (Stage III), bank erosion begins, which leads to general channel widening.[34] At this point, a majority of the sediment that leaves a drainage area comes from within the channel, as opposed to the background and construction related hillslope contribution. Stage IV is characterized by more aggradation and localized bank instability. Stage V represents a new quasi-equilibrium channel morphology in balance with the new flow and sediment supply regime. In other words, stream power is in balance with sediment load and sediment size.

The magnitude of the channel morphology changes discussed above varies along a stream network as well as with the age of development, slope, geology (sand-bedded channels may cycle through the evolution sequence in a matter of decades whereas clay-dominated channels may take much longer), watershed sediment load and size, type of urbanization, and land use history. It is also dependent on a channel's stage in the channel evolution sequence when urbanization occurs. Management strategies must take into account a channel's stage of adjustment and account for future changes in the evolution of channel form (Stein and Zaleski 2005). [35]

Traditional structural water quality BMPs (e.g. detention basins and other devices used to store volumes of runoff) unless they are highly engineered to provide adequate flow duration control, do not adequately protect receiving waters from accelerated channel bed and bank erosion, do not address post-development increases in runoff volume, and do not mitigate the decline in benthic macroinvertebrate communities in the receiving waters[36] suggest that structural BMPs are not as effective in protecting aquatic communities as a continuous riparian buffer of native vegetation. This is supported by the findings of Zucker and White[37], where instream biological metrics were correlated with the extent of forested buffers.

This General Permit requires dischargers to maintain pre-development drainage densities and times of concentration in order to protect channels and encourages dischargers to implement setbacks to reduce channel slope and velocity changes that can lead to aquatic habitat degradation.

There are a number of other approaches for modeling fluvial systems, including statistical and physical models and simpler stream power models.[38] The use of these models in California is described in Stein and Zaleski (2005).[39] Rather than prescribe a specific one-size-fits-all modeling method in this permit, the State Water Board intends to develop a stream power and channel evolution model-based framework to assess channels and develop a hierarchy of suitable analysis methods and management strategies. In time, this framework may become a State Water Board water quality control policy.

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[33] Hammer 1973 as cited in Delaware Department of Natural Resources (DDNR). 2004. Green Technology: The Delaware Urban Runoff Management Approach. Dover, DE. 117 pp;
Booth, D.B. 1990. Stream Channel Incision Following Drainage Basin Urbanization. *Water Resour. Bull.* 26:407-417.
[34] Trimble, S.W. 1997. Contribution of Stream Channel Erosion to Sediment Yield from an Urbanizing Watershed. *Science*: Vol. 278 (21), pp. 1442-1444.
[35] Stein, E.S. and S. Zaleski. 2005.Managing runoff to protect natural stream: the latest developments on investigation and management of hydromodification in California. Southern California Coastal Water Research Project Technical Report 475. 26 pp.
[36] Horner, R.R. 2006. Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices (LID) for the San Diego Region. Available at: http://www.projectcleanwater.org/pdf/permit/case-study_lid.pdf.
[37] Delaware Department of Natural Resources (DDNR). 2004. Green Technology: The Delaware Urban Runoff Management Approach. Dover, DE. 117 pp.
[38] Finlayson, D.P. and D.R. Montgomery. 2003. Modeling large-scale fluvial erosion in geographic information systems. Geomorphology (53), pp. 147-164).
[39] Stein, E.S. and S. Zaleski. 2005.Managing runoff to protect natural stream: the latest developments on investigation and management of hydromodification in California. Southern California Coastal Water Research Project Technical Report 475. 26 pp.

Permit Linkage to Overbank and Extreme Flood Protection
Site design BMPs (e.g. rooftop and impervious disconnection, vegetated swales, setbacks and buffers) filter and settle out pollutants and provide for more infiltration than is possible for traditional centralized structural BMPs placed at the lowest point in a site. They provide source control for runoff and lead to a reduction in pollutant loads. When implemented, they also help reduce the magnitude and volume of larger, less frequent storm events (e.g., 10-yr, 24-hour storm and larger), thereby reducing the need for expensive flood control infrastructure. Nonstructural BMPs can also be a landscape amenity, instead of a large isolated structure requiring substantial area for ancillary access, buffering, screening and maintenance facilities.[25] The multiple benefits of using non-structural benefits will be critically important as the state's population increases and imposes strains upon our existing water resources.

Maintaining predevelopment drainage densities and times of concentration will help reduce post-development peak flows and volumes in areas not covered under a municipal permit. The most effective way to preserve drainage areas and maximize time of concentration is to implement landform grading, incorporate site design BMPs and implement distributed structural BMPs (e.g., bioretention cells, rain gardens, rain cisterns).

M. Storm Water Pollution Prevention Plans

USEPA's Construction General Permit requires that qualified personnel conduct inspections. USEPA defines qualified personnel as "a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity."[40] USEPA also suggests that qualified personnel prepare SWPPPs and points to numerous states that require certified professionals to be on construction sites at all times. States that currently have certification programs are Washington, Georgia, Florida, Delaware, Maryland, and New Jersey. The Permit 99-08-DWQ did not require that qualified personnel prepare SWPPPs or conduct inspections. However, to ensure that water quality is being protected, this General Permit requires that all SWPPPs be written, amended, and certified by a Qualified SWPPP Developer. A Qualified SWPPP Developer must possess one of the eight certifications and or registrations specified in this General Permit and effective two years after the adoption date of this General Permit, must have attended a State Water Board-sponsored or approved Qualified SWPPP Developer training course. Table 9 provides an overview of the criteria used in determining qualified certification titles for a QSD and QSP.

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40 US Environmental Protection Agency. Stormwater Pollution Prevention Plans for Construction Activities. <http://cfpub.epa.gov/npdes/stormwater/swppp.cfm> and <http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf>.

Table 9 - Qualified SWPPP Developer/ Qualified SWPPP Practitioner Certification Criteria

Certification/ Title	Registered By	QSD/QSP	Certification Criteria
Professional Civil Engineer	California	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites
Professional Geologist or Engineering Geologist	California	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites
Landscape Architect	California	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites
Professional Hydrologist	American Institute of Hydrology	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites
Certified Professional in Erosion and Sediment Control™ (CPESC)	Enviro Cert International Inc.	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites 5. Continuing Education
Certified Inspector of Sediment and Erosion Control™ (CISEC)	Certified Inspector of Sediment and Erosion Control, Inc.	QSP	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites 5. Continuing Education
Certified Erosion, Sediment and Storm Water Inspector™ (CESSWI)	Enviro Cert International Inc.	QSP	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites 5. Continuing Education
Certified Professional in Storm Water Quality™ (CPSWQ)	Enviro Cert International Inc.	Both	1. Approval Process 2. Code of Ethics 3. Accountability 4. Pre-requisites 5. Continuing Education

The previous versions of the General Permit required development and implementation of a SWPPP as the primary compliance mechanism. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in storm water and non-storm water discharges. The SWPPP must include BMPs that address source control, BMPs that address pollutant control, and BMPs that address treatment control.

This General Permit shifts some of the measures that were covered by this general requirement to specific permit requirements, each individually enforceable as a permit term. This General Permit emphasizes the use of appropriately selected, correctly installed and maintained pollution reduction BMPs. This approach provides the flexibility necessary to establish BMPs that can effectively address source control of pollutants during changing construction activities. These specific requirements also improve both the clarity and the enforceability of the General Permit so that the dischargers understand, and the public can determine whether the discharges are in compliance with, permit requirements.

The SWPPP must be implemented at the appropriate level to protect water quality at all times throughout the life of the project. The SWPPP must remain on the site during construction activities, commencing with the initial mobilization and ending with the termination of coverage under the General Permit. For LUPs the discharger shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio or telephone. Once construction activities are complete, until stabilization is achieved, the SWPPP shall be available from the SWPPP contact listed in the PRDs

A SWPPP must be appropriate for the type and complexity of a project and will be developed and implemented to address project specific conditions. Some projects may have similarities or complexities, yet each project is unique in its progressive state that requires specific description and selection of BMPs needed to address all possible generated pollutants

N. Regional Water Board Authorities

Because this General Permit will be issued to thousands of construction sites across the State, the Regional Water Boards retain discretionary authority over certain issues that may arise from the discharges in their respective regions. This General Permit does not grant the Regional Water Boards any authority they do not otherwise have; rather, it merely emphasizes that the Regional Water Boards can take specific actions related to this General Permit. For example, the Regional Water Boards will be enforcing this General Permit and may need to adjust some requirements for a discharger based on the discharger's compliance history.

Linda S. Adams
Secretary for Environmental Protection

State Water Resources Control Board

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Arnold Schwarzenegger
Governor

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR
STORM WATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE
ACTIVITIES

ORDER NO. 2009-0009-DWQ
NPDES NO**. CAS000002**

This Order was adopted by the State Water Resources Control Board on:	**September 2, 2009**
This Order shall become effective on:	**July 1, 2010**
This Order shall expire on:	**September 2, 2014**

IT IS HEREBY ORDERED, that this Order supersedes Order No. 99-08-DWQ except for enforcement purposes. The Discharger shall comply with the requirements in this Order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder.

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on September 2, 2009.

AYE: Vice Chair Frances Spivy-Weber
Board Member Arthur G. Baggett, Jr.
Board Member Tam M. Doduc

NAY: Chairman Charles R. Hoppin

ABSENT: None

ABSTAIN: None

Jeanine Townsend

Jeanine Townsend
Clerk to the Board

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STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2009-0009-DWQ
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT NO. CAS000002

WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES

I. FINDINGS

A. General Findings

The State Water Resources Control Board (State Water Board) finds that:

1. The federal Clean Water Act (CWA) prohibits certain discharges of storm water containing pollutants except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit (Title 33 United States Code (U.S.C.) §§ 1311 and 1342(p); also referred to as Clean Water Act (CWA) §§ 301 and 402(p)). The U.S. Environmental Protection Agency (U.S. EPA) promulgates federal regulations to implement the CWA's mandate to control pollutants in storm water runoff discharges. (Title 40 Code of Federal Regulations (C.F.R.) Parts 122, 123, and 124). The federal statutes and regulations require discharges to surface waters comprised of storm water associated with construction activity, including demolition, clearing, grading, and excavation, and other land disturbance activities (except operations that result in disturbance of less than one acre of total land area and which are not part of a larger common plan of development or sale), to obtain coverage under an NPDES permit. The NPDES permit must require implementation of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate pollutants in storm water runoff. The NPDES permit must also include additional requirements necessary to implement applicable water quality standards.

2. This General Permit authorizes discharges of storm water associated with construction activity so long as the dischargers comply with all requirements, provisions, limitations and prohibitions in the permit. In addition, this General Permit regulates the discharges of storm water associated with construction activities from all Linear Underground/Overhead Projects resulting in the disturbance of greater than or equal to one acre (Attachment A).

3. This General Permit regulates discharges of pollutants in storm water associated with construction activity (storm water discharges) to waters of the United States from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface.

4. This General Permit does not preempt or supersede the authority of local storm water management agencies to prohibit, restrict, or control storm water discharges to municipal separate storm sewer systems or other watercourses within their jurisdictions.

5. This action to adopt a general NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), pursuant to Section 13389 of the California Water Code.

6. Pursuant to 40 C.F.R. § 131.12 and State Water Board Resolution No. 68-16,[1] which incorporates the requirements of § 131.12 where applicable, the State Water Board finds that discharges in compliance with this General Permit will not result in the lowering of water quality standards, and are therefore consistent with those provisions. Compliance with this General Permit will result in improvements in water quality.

7. This General Permit serves as an NPDES permit in compliance with CWA § 402 and will take effect on July 1, 2010 by the State Water Board provided the Regional Administrator of the U.S. EPA has no objection. If the U.S. EPA Regional Administrator objects to its issuance, the General Permit will not become effective until such objection is withdrawn.

8. Following adoption and upon the effective date of this General Permit, the Regional Water Quality Control Boards (Regional Water Boards) shall enforce the provisions herein.

9. Regional Water Boards establish water quality standards in Basin Plans. The State Water Board establishes water quality standards in various statewide plans, including the California Ocean Plan. U.S. EPA establishes water quality standards in the National Toxic Rule (NTR) and the California Toxic Rule (CTR).

[1] Resolution No. 68-16 generally requires that existing water quality be maintained unless degradation is justified based on specific findings.

10. This General Permit does not authorize discharges of fill or dredged material regulated by the U.S. Army Corps of Engineers under CWA § 404 and does not constitute a waiver of water quality certification under CWA § 401.

11. The primary storm water pollutant at construction sites is excess sediment. Excess sediment can cloud the water, which reduces the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants such as nutrients, metals, and oils and greases.

12. Construction activities can impact a construction site's runoff sediment supply and transport characteristics. These modifications, which can occur both during and after the construction phase, are a significant cause of degradation of the beneficial uses established for water bodies in California. Dischargers can avoid these effects through better construction site design and activity practices.

13. This General Permit recognizes four distinct phases of construction activities. The phases are Grading and Land Development Phase, Streets and Utilities Phase, Vertical Construction Phase, and Final Landscaping and Site Stabilization Phase. Each phase has activities that can result in different water quality effects from different water quality pollutants. This General Permit also recognizes inactive construction as a category of construction site type.

14. Compliance with any specific limits or requirements contained in this General Permit does not constitute compliance with any other applicable requirements.

15. Following public notice in accordance with State and Federal laws and regulations, the State Water Board heard and considered all comments and testimony in a public hearing on 06/03/2009. The State Water Board has prepared written responses to all significant comments.

16. Construction activities obtaining coverage under the General Permit may have multiple discharges subject to requirements that are specific to general, linear, and/or active treatment system discharge types.

17. The State Water Board may reopen the permit if the U.S. EPA adopts a final effluent limitation guideline for construction activities.

B. Activities Covered Under the General Permit

18. Any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre.

19. Construction activity that results in land surface disturbances of less than one acre if the construction activity is part of a larger common plan of development or the sale of one or more acres of disturbed land surface.

20. Construction activity related to residential, commercial, or industrial development on lands currently used for agriculture including, but not limited to, the construction of buildings related to agriculture that are considered industrial pursuant to U.S. EPA regulations, such as dairy barns or food processing facilities.

21. Construction activity associated with Linear Underground/Overhead Utility Projects (LUPs) including, but not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

22. Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.[2]

23. Storm water discharges from dredge spoil placement that occur outside of U.S. Army Corps of Engineers jurisdiction (upland sites) and that disturb one or more acres of land surface from construction activity are covered by this General Permit. Construction sites that intend to disturb one or more acres of land within the jurisdictional boundaries of a CWA § 404 permit should contact the appropriate Regional Water Board to determine whether this permit applies to the site.

[2] Pursuant to the Ninth Circuit Court of Appeals' decision in *NRDC v. EPA* (9th Cir. 2008) 526 F.3d 591, and subsequent denial of the U.S. EPA's petition for reconsideration in November 2008, oil and gas construction activities discharging storm water contaminated only with sediment are no longer exempt from the NPDES program.

C. Activities Not Covered Under the General Permit

24. Routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

25. Disturbances to land surfaces solely related to agricultural operations such as disking, harrowing, terracing and leveling, and soil preparation.

26. Discharges of storm water from areas on tribal lands; construction on tribal lands is regulated by a federal permit.

27. Construction activity and land disturbance involving discharges of storm water within the Lake Tahoe Hydrologic Unit. The Lahontan Regional Water Board has adopted its own permit to regulate storm water discharges from construction activity in the Lake Tahoe Hydrologic Unit (Regional Water Board 6SLT). Owners of construction sites in this watershed must apply for the Lahontan Regional Water Board permit rather than the statewide Construction General Permit.

28. Construction activity that disturbs less than one acre of land surface, and that is not part of a larger common plan of development or the sale of one or more acres of disturbed land surface.

29. Construction activity covered by an individual NPDES Permit for storm water discharges.

30. Discharges from small (1 to 5 acre) construction activities with an approved Rainfall Erosivity Waiver authorized by U.S. EPA Phase II regulations certifying to the State Board that small construction activity will occur only when the Rainfall Erosivity Factor is less than 5 (“R” in the Revised Universal Soil Loss Equation).

31. Landfill construction activity that is subject to the Industrial General Permit.

32. Construction activity that discharges to Combined Sewer Systems.

33. Conveyances that discharge storm water runoff combined with municipal sewage.

34. Discharges of storm water identified in CWA § 402(*l*)(2), 33 U.S.C. § 1342(*l*)(2).

35. Discharges occurring in basins that are not tributary or hydrologically connected to waters of the United States (for more information contact your Regional Water Board).

D. Obtaining and Modifying General Permit Coverage

36. This General Permit requires all dischargers to electronically file all Permit Registration Documents (PRDs), Notices of Termination (NOT), changes of information, annual reporting, and other compliance documents required by this General Permit through the State Water Board's Storm water Multi-Application and Report Tracking System (SMARTS) website.

37. Any information provided to the Regional Water Board shall comply with the Homeland Security Act and any other federal law that concerns security in the United States; any information that does not comply should not be submitted.

38. This General Permit grants an exception from the Risk Determination requirements for existing sites covered under Water Quality Orders No. 99-08-DWQ, and No. 2003-0007-DWQ. For certain sites, adding additional requirements may not be cost effective. Construction sites covered under Water Quality Order No. 99-08-DWQ shall obtain permit coverage at the Risk Level 1. LUPs covered under Water Quality Order No. 2003-0007-DWQ shall obtain permit coverage as a Type 1 LUP. The Regional Water Boards have the authority to require Risk Determination to be performed on sites currently covered under Water Quality Orders No. 99-08-DWQ and No. 2003-0007-DWQ where they deem it necessary. The State Water Board finds that there are two circumstances when it may be appropriate for the Regional Water Boards to require a discharger that had filed an NOI under State Water Board Order No. 99-08-DWQ to recalculate the site's risk level. These circumstances are: (1) when the discharger has a demonstrated history of noncompliance with State Water Board Order No. 99-08-DWQ or; (2) when the discharger's site poses a significant risk of causing or contributing to an exceedance of a water quality standard without the implementation of the additional Risk Level 2 or 3 requirements.

E. Prohibitions

39. All discharges are prohibited except for the storm water and non-storm water discharges specifically authorized by this General Permit or another NPDES permit. Non-storm water discharges include a wide variety of sources, including improper dumping, spills, or leakage from storage tanks or transfer areas. Non-storm water discharges may

contribute significant pollutant loads to receiving waters. Measures to control spills, leakage, and dumping, and to prevent illicit connections during construction must be addressed through structural as well as non-structural Best Management Practices (BMPs)[3]. The State Water Board recognizes, however, that certain non-storm water discharges may be necessary for the completion of construction.

40. This General Permit prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

41. This General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the State Water Board and the nine Regional Water Boards.

42. Pursuant to the Ocean Plan, discharges to Areas of Special Biological Significance (ASBS) are prohibited unless covered by an exception that the State Water Board has approved.

43. This General Permit prohibits the discharge of any debris[4] from construction sites. Plastic and other trash materials can cause negative impacts to receiving water beneficial uses. The State Water Board encourages the use of more environmentally safe, biodegradable materials on construction sites to minimize the potential risk to water quality.

F. Training

44. In order to improve compliance with and to maintain consistent enforcement of this General Permit, all dischargers are required to appoint two positions - the Qualified SWPPP Developer (QSD) and the Qualified SWPPP Practitioner (QSP) - who must obtain appropriate training. Together with the key stakeholders, the State and Regional Water Boards are leading the development of this curriculum through a collaborative organization called The Construction General Permit (CGP) Training Team.

45. The Professional Engineers Act (Bus. & Prof. Code section 6700, et seq.) requires that all engineering work must be performed by a California licensed engineer.

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[3] BMPs are scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

[4] Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste.

G. Determining and Reducing Risk

46. The risk of accelerated erosion and sedimentation from wind and water depends on a number of factors, including proximity to receiving water bodies, climate, topography, and soil type.

47. This General Permit requires dischargers to assess the risk level of a site based on both sediment transport and receiving water risk. This General Permit contains requirements for Risk Levels 1, 2 and 3, and LUP Risk Type 1, 2, and 3 (Attachment A). Risk levels are established by determining two factors: first, calculating the site's sediment risk; and second, receiving water risk during periods of soil exposure (i.e. grading and site stabilization). Both factors are used to determine the site-specific Risk Level(s). LUPs can be determined to be Type 1 based on the flowchart in Attachment A.1.

48. Although this General Permit does not mandate specific setback distances, dischargers are encouraged to set back their construction activities from streams and wetlands whenever feasible to reduce the risk of impacting water quality (e.g., natural stream stability and habitat function). Because there is a reduced risk to receiving waters when setbacks are used, this General Permit gives credit to setbacks in the risk determination and post-construction storm water performance standards. The risk calculation and runoff reduction mechanisms in this General Permit are expected to facilitate compliance with any Regional Water Board and local agency setback requirements, and to encourage voluntary setbacks wherever practicable.

49. Rain events can occur at any time of the year in California. Therefore, a Rain Event Action Plan (REAP) is necessary for Risk Level 2 and 3 traditional construction projects (LUPs exempt) to ensure that active construction sites have adequate erosion and sediment controls implemented prior to the onset of a storm event, even if construction is planned only during the dry season.

50. Soil particles smaller than 0.02 millimeters (mm) (i.e., finer than medium silt) do not settle easily using conventional measures for sediment control (i.e., sediment basins). Given their long settling time, dislodging these soils results in a significant risk that fine particles will be released into surface waters and cause unacceptable downstream impacts. If operated correctly, an Active Treatment System (ATS[5]) can prevent or reduce the release of fine particles from construction sites.

[5] An ATS is a treatment system that employs chemical coagulation, chemical flocculation, or electro coagulation in order to reduce turbidity caused by fine suspended sediment.

Use of an ATS can effectively reduce a site's risk of impacting receiving waters.

51. Dischargers located in a watershed area where a Total Maximum Daily Load (TMDL) has been adopted or approved by the Regional Water Board or U.S. EPA may be required by a separate Regional Water Board action to implement additional BMPs, conduct additional monitoring activities, and/or comply with an applicable waste load allocation and implementation schedule. Such dischargers may also be required to obtain an individual Regional Water Board permit specific to the area.

H. Effluent Standards

52. The State Water Board convened a blue ribbon panel of storm water experts that submitted a report entitled, “The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities,” dated June 19, 2006. The panel concluded that numeric limits or action levels are technically feasible to control construction storm water discharges, provided that certain conditions are considered. The panel also concluded that numeric effluent limitations (NELs) are feasible for discharges from construction sites that utilize an ATS. The State Water Board has incorporated the expert panel’s suggestions into this General Permit, which includes both numeric action levels (NALs) and NELs for pH and turbidity, and special numeric limits for ATS discharges.

Numeric Effluent Limitations

53. Discharges of storm water from construction activities may become contaminated from alkaline construction materials resulting in high pH (greater than pH 7). Alkaline construction materials include, but are not limited to, hydrated lime, concrete, mortar, cement kiln dust (CKD), Portland cement treated base (CTB), fly ash, recycled concrete, and masonry work. This General Permit includes an NEL for pH (6.0-9.0) that applies only at sites that exhibit a "high risk of high pH discharge." A "high risk of high pH discharge" can occur during the complete utilities phase, the complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations to the background pH of any discharges.

54. For Risk Level 3 discharges, this General Permit establishes technology-based, numeric effluent limitations (NELs) for turbidity of 500 NTU. Exceedances of the turbidity NEL constitutes a violation of this General Permit.

55. This General Permit establishes a 5 year, 24 hour (expressed in inches of rainfall) Compliance Storm Event exemption from the technology-based NELs for Risk Level 3 dischargers.

Determining Compliance with Numeric Limitations

56. This General Permit sets a pH NAL of 6.5 to 8.5, and a turbidity NAL of 250 NTU. The purpose of the NAL and its associated monitoring requirement is to provide operational information regarding the performance of the measures used at the site to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges. The NALs in this General Permit for pH and turbidity are not directly enforceable and do not constitute NELs.

57. This General Permit requires dischargers with NAL exceedances to immediately implement additional BMPs and revise their Storm Water Pollution Prevention Plans (SWPPPs) accordingly to either prevent pollutants and authorized non-storm water discharges from contaminating storm water, or to substantially reduce the pollutants to levels consistently below the NALs. NAL exceedances are reported in the State Water Boards SMARTS system, and the discharger is required to provide an NAL Exceedance Report when requested by a Regional Water Board.

58. If run-on is caused by a forest fire or any other natural disaster, then NELs do not apply.

59. Exceedances of the NELs are a violation of this Permit. This General Permit requires dischargers with NEL exceedances to implement additional monitoring, BMPs, and revise their SWPPPs accordingly. Dischargers are required to notify the State and Regional Water Boards of the violation through the State Water Boards SMARTs system, and provide an NEL Violation Report sharing additional information concerning the NEL exceedance.

I. Receiving Water Limitations

60. This General Permit requires all enrolled dischargers to determine the receiving waters potentially affected by their discharges and to comply with all applicable water quality standards, including any more stringent standards applicable to a water body.

J. Sampling, Monitoring, Reporting and Record Keeping

61. Visual monitoring of storm water and non-storm water discharges is required for all sites subject to this General Permit.

62. Records of all visual monitoring inspections are required to remain on-site during the construction period and for a minimum of three years.

63. For all Risk Level 3 and Risk Level 2 sites, this General Permit requires effluent monitoring for pH and turbidity. Sampling, analysis and monitoring requirements for effluent monitoring for pH and turbidity are contained in this General Permit.

64. Risk Level 3 sites in violation of the Numeric Effluent Limitations contained in this General Permit and with direct discharges to receiving water are required to conduct receiving water monitoring.

65. For Risk Level 3 sites larger than 30 acres and with direct discharges to receiving waters, this General Permit requires bioassessment sampling before and after site completion to determine if significant degradation to the receiving water's biota has occurred. Bioassessment sampling guidelines are contained in this General Permit.

66. A summary and evaluation of the sampling and analysis results will be submitted in the Annual Reports.

67. This General Permit contains sampling, analysis and monitoring requirements for non-visible pollutants at all sites subject to this General Permit.

68. Compliance with the General Permit relies upon dischargers to electronically self-report any discharge violations and to comply with any Regional Water Board enforcement actions.

69. This General Permit requires that all dischargers maintain a paper or electronic copy of all required records for three years from the date generated or date submitted, whichever is last. These records must be available at the construction site until construction is completed. For LUPs, these documents may be retained in a crew member's vehicle and made available upon request.

K. Active Treatment System (ATS) Requirements

70. Active treatment systems add chemicals to facilitate flocculation, coagulation and filtration of suspended sediment particles. The uncontrolled release of these chemicals to the environment can negatively affect the beneficial uses of receiving waters and/or degrade water quality (e.g., acute and chronic toxicity). Additionally, the batch storage and treatment of storm water through an ATS' can potentially

cause physical impacts on receiving waters if storage volume is inadequate or due to sudden releases of the ATS batches and improperly designed outfalls.

71. If designed, operated and maintained properly an ATS can achieve very high removal rates of suspended sediment (measured as turbidity), albeit at sometimes significantly higher costs than traditional erosion/sediment control practices. As a result, this General Permit establishes NELs consistent with the expected level of typical ATS performance.

72. This General Permit requires discharges of storm water associated with construction activity that undergo active treatment to comply with special operational and effluent limitations to ensure that these discharges do not adversely affect the beneficial uses of the receiving waters or cause degradation of their water quality.

73. For ATS discharges, this General Permit establishes technology-based NELs for turbidity.

74. This General Permit establishes a 10 year, 24 hour (expressed in inches of rainfall) Compliance Storm Event exemption from the technology-based numeric effluent limitations for ATS discharges. Exceedances of the ATS turbidity NEL constitutes a violation of this General Permit.

L. Post-Construction Requirements

75. This General Permit includes performance standards for post-construction that are consistent with State Water Board Resolution No. 2005-0006, "Resolution Adopting the Concept of Sustainability as a Core Value for State Water Board Programs and Directing Its Incorporation," and 2008-0030, “Requiring Sustainable Water Resources Management.“ The requirement for all construction sites to match pre-project hydrology will help ensure that the physical and biological integrity of aquatic ecosystems are sustained. This “runoff reduction” approach is analogous in principle to Low Impact Development (LID) and will serve to protect related watersheds and waterbodies from both hydrologic-based and pollution impacts associated with the post-construction landscape.

76. LUP projects are not subject to post-construction requirements due to the nature of their construction to return project sites to pre-construction conditions.

M. Storm Water Pollution Prevention Plan Requirements

77. This General Permit requires the development of a site-specific SWPPP. The SWPPP must include the information needed to demonstrate compliance with all requirements of this General Permit, and must be kept on the construction site and be available for review. The discharger shall ensure that a QSD develops the SWPPP.

78. To ensure proper site oversight, this General Permit requires a Qualified SWPPP Practitioner to oversee implementation of the BMPs required to comply with this General Permit.

N. Regional Water Board Authorities

79. Regional Water Boards are responsible for implementation and enforcement of this General Permit. A general approach to permitting is not always suitable for every construction site and environmental circumstances. Therefore, this General Permit recognizes that Regional Water Boards must have some flexibility and authority to alter, approve, exempt, or rescind permit authority granted under this General Permit in order to protect the beneficial uses of our receiving waters and prevent degradation of water quality.

IT IS HEREBY ORDERED that all dischargers subject to this General Permit shall comply with the following conditions and requirements (including all conditions and requirements as set forth in Attachments A, B, C, D, E and F)[6]:

II. CONDITIONS FOR PERMIT COVERAGE

A. Linear Underground/Overhead Projects (LUPs)

1. Linear Underground/Overhead Projects (LUPs) include, but are not limited to, any conveyance, pipe, or pipeline for the transportation of any gaseous, liquid (including water and wastewater for domestic municipal services), liquescent, or slurry substance; any cable line or wire for the transmission of electrical energy; any cable line or wire for communications (e.g. telephone, telegraph, radio or television messages); and associated ancillary facilities. Construction activities associated with LUPs include, but are not limited to, (a) those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment, and associated ancillary facilities); and include, but are not limited to, (b) underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/ or pavement repair or replacement, and stockpile/borrow locations.

2. The utility company, municipality, or other public or private company or agency that owns or operates the linear underground/overhead project is responsible for obtaining coverage under the General Permit where the construction of pipelines, utility lines, fiber-optic cables, or other linear underground/overhead projects will occur across several properties unless the LUP construction activities are covered under another construction storm water permit.

3. Only LUPs shall comply with the conditions and requirements in Attachment A, A.1 & A.2 of this Order. The balance of this Order is not applicable to LUPs except as indicated in Attachment A.

B. Obtaining Permit Coverage Traditional Construction Sites

[6] These attachments are part of the General Permit itself and are not separate documents that are capable of being updated independently by the State Water Board.

1. The Legally Responsible Person (LRP) (see Special Provisions, Electronic Signature and Certification Requirements, Section IV.I.1) must obtain coverage under this General Permit.

2. To obtain coverage, the LRP must electronically file Permit Registration Documents (PRDs) prior to the commencement of construction activity. Failure to obtain coverage under this General Permit for storm water discharges to waters of the United States is a violation of the CWA and the California Water Code.

3. PRDs shall consist of:

   a. Notice of Intent (NOI)
   b. Risk Assessment (Section VIII)
   c. Site Map
   d. Storm Water Pollution Prevention Plan (Section XIV)
   e. Annual Fee
   f. Signed Certification Statement

   Any information provided to the Regional Water Board shall comply with the Homeland Security Act and any other federal law that concerns security in the United States; any information that does not comply should not be submitted.

   Attachment B contains additional PRD information. Dischargers must electronically file the PRDs, and mail the appropriate annual fee to the State Water Board.

4. This permit is effective on July 1, 2010.

   a. **Dischargers Obtaining Coverage On or After July 1, 2010:** All dischargers requiring coverage on or after July 1, 2010, shall electronically file their PRDs prior to the commencement of construction activities, and mail the appropriate annual fee no later than seven days prior to the commencement of construction activities. Permit coverage shall not commence until the PRDs and the annual fee are received by the State Water Board, and a WDID number is assigned and sent by SMARTS.

   b. **Dischargers Covered Under 99-08-DWQ and 2003-0007-DWQ:** Existing dischargers subject to State Water Board Order No. 99-08-DWQ (existing dischargers) will continue coverage under 99-08-DWQ until July 1, 2010. After July 1, 2010, all NOIs subject to State Water Board Order No. 99-08-DWQ will be terminated. Existing dischargers shall electronically file their PRDs no later than

July 1, 2010. If an existing discharger's site acreage subject to the annual fee has changed, it shall mail a revised annual fee no less than seven days after receiving the revised annual fee notification, **or else lose permit coverage**. All existing dischargers shall be exempt from the risk determination requirements in Section VIII of this General Permit until two years after permit adoption. All existing dischargers are therefore subject to Risk Level 1 requirements regardless of their site's sediment and receiving water risks. However, a Regional Board retains the authority to require an existing discharger to comply with the Section VIII risk determination requirements.

5. The discharger is only considered covered by this General Permit upon receipt of a Waste Discharger Identification (WDID) number assigned and sent by the State Water Board Storm water Multi-Application and Report Tracking System (SMARTS). In order to demonstrate compliance with this General Permit, the discharger must obtain a WDID number and must present documentation of a valid WDID upon demand.

6. During the period this permit is subject to review by the U.S. EPA, the prior permit (State Water Board Order No. 99-08-DWQ) remains in effect. Existing dischargers under the prior permit will continue to have coverage under State Water Board Order No. 99-08-DWQ until this General Permit takes effect on July 1, 2010. Dischargers who complete their projects and electronically file an NOT prior to July 1, 2010, are not required to obtain coverage under this General Permit.

7. Small Construction Rainfall Erosivity Waiver

   EPA's Small Construction Erosivity Waiver applies to sites between one and five acres demonstrating that there are no adverse water quality impacts.

   Dischargers eligible for a Rainfall Erosivity Waiver based on low erosivity potential shall complete the electronic Notice of Intent (NOI) and Sediment Risk form through the State Water Board's SMARTS system, certifying that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five. Where the LRP changes or another LRP is added during construction, the new LRP must also submit a waiver certification through the SMARTS system.

   If a small construction site continues beyond the projected completion date given on the waiver certification, the LRP shall recalculate the rainfall erosivity factor for the new project duration and submit this

information through the SMARTS system. If the new R factor is below five (5), the discharger shall update through SMARTS all applicable information on the waiver certification and retain a copy of the revised waiver onsite. The LRP shall submit the new waiver certification 30 days prior to the projected completion date listed on the original waiver form to assure exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, the LRP shall be required to apply for coverage under this Order.

8. In the case of a public emergency that requires immediate construction activities, a discharger shall submit a brief description of the emergency construction activity within five days of the onset of construction, and then shall submit all PRDs within thirty days.

C. Revising Permit Coverage for Change of Acreage or New Ownership

1. The discharger may reduce or increase the total acreage covered under this General Permit when a portion of the site is complete and/or conditions for termination of coverage have been met (See Section II.D Conditions for Termination of Coverage); when ownership of a portion of the site is sold to a different entity; or when new acreage, subject to this General Permit, is added to the site.

2. Within 30 days of a reduction or increase in total disturbed acreage, the discharger shall electronically file revisions to the PRDs that include:

   a. A revised NOI indicating the new project size;

   b. A revised site map showing the acreage of the site completed, acreage currently under construction, acreage sold/transferred or added, and acreage currently stabilized in accordance with the Conditions for Termination of Coverage in Section II.D below.

   c. SWPPP revisions, as appropriate; and

   d. Certification that any new landowners have been notified of applicable requirements to obtain General Permit coverage. The certification shall include the name, address, telephone number, and e-mail address of the new landowner.

   e. If the project acreage has increased, dischargers shall mail payment of revised annual fees within 14 days of receiving the revised annual fee notification.

3. The discharger shall continue coverage under the General Permit for any parcel that has not achieved "Final Stabilization" as defined in Section II.D.

4. When an LRP owns property with active General Permit coverage, and the LRP sells the property, or a parcel thereof, to another person, that person shall become an LRP with respect to whatever parcel was sold. The existing LRP shall inform the new LRP of the General Permit's requirements. In order for the new LRP to continue the construction activity on its parcel of property, the new LRP, or the new LRP's approved signatory, must submit PRDs in accordance with this General Permit's requirements.

D. Conditions for Termination of Coverage

1. Within 90 days of when construction is complete or ownership has been transferred, the discharger shall electronically file a Notice of Termination (NOT), a final site map, and photos through the State Water Boards SMARTS system. Filing a NOT certifies that all General Permit requirements have been met. The Regional Water Board will consider a construction site complete only when all portions of the site have been transferred to a new owner, or all of the following conditions have been met:

   a. For purposes of "final stabilization," the site will not pose any additional sediment discharge risk than it did prior to the commencement of construction activity;

   b. There is no potential for construction-related storm water pollutants to be discharged into site runoff;

   c. Final stabilization has been reached;

   d. Construction materials and wastes have been disposed of properly;

   e. Compliance with the Post-Construction Standards in Section XIII of this General Permit has been demonstrated;

   f. Post-construction storm water management measures have been installed and a long-term maintenance plan[7] has been established; and

[7] For the purposes of this requirement a long-term maintenance plan will be designed for a minimum of five years, and will describe the procedures to ensure that the post-construction storm water management measures are adequately maintained.

g. All construction-related equipment, materials and any temporary BMPs no longer needed are removed from the site.

2. The discharger shall certify that final stabilization conditions are satisfied in their NOT. Failure to certify shall result in continuation of permit coverage and annual billing.

3. The NOT must demonstrate through photos, RUSLE or RUSLE2, or results of testing and analysis that the site meets all of the conditions above (Section II.D.1) and the final stabilization condition (Section II.D.1.a) is attained by one of the following methods:

   a. "70% final cover method," no computational proof required

      OR:

   b. "RUSLE or RUSLE2 method," computational proof required

      OR:

   c. "Custom method", the discharger shall demonstrate in some other manner than a or b, above, that the site complies with the "final stabilization" requirement in Section II.D.1.a.

III. DISCHARGE PROHIBITIONS

A. Dischargers shall not violate any discharge prohibitions contained in applicable Basin Plans or statewide water quality control plans. Waste discharges to Areas of Special Biological Significance (ASBS) are prohibited by the California Ocean Plan, unless granted an exception issued by the State Water Board.

B. All discharges are prohibited except for the storm water and non-storm water discharges specifically authorized by this General Permit or another NPDES permit.

C. Authorized non-storm water discharges may include those from de-chlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, uncontaminated ground water from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. The discharge of non-storm water is authorized under the following conditions:

1. The discharge does not cause or contribute to a violation of any water quality standard;

2. The discharge does not violate any other provision of this General Permit;

3. The discharge is not prohibited by the applicable Basin Plan;

4. The discharger has included and implemented specific BMPs required by this General Permit to prevent or reduce the contact of the non-storm water discharge with construction materials or equipment.

5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;

6. The discharge is monitored and meets the applicable NALs and NELs; and

7. The discharger reports the sampling information in the Annual Report.

If any of the above conditions are not satisfied, the discharge is not authorized by this General Permit. The discharger shall notify the Regional Water Board of any anticipated non-storm water discharges not already authorized by this General Permit or another NPDES permit, to determine whether a separate NPDES permit is necessary.

D. Debris resulting from construction activities are prohibited from being discharged from construction sites.

E. When soil contamination is found or suspected and a responsible party is not identified, or the responsible party fails to promptly take the appropriate action, the discharger shall have those soils sampled and tested to ensure proper handling and public safety measures are implemented. The discharger shall notify the appropriate local, State, and federal agency(ies) when contaminated soil is found at a construction site, and will notify the appropriate Regional Water Board.

IV. SPECIAL PROVISIONS

A. Duty to Comply

1. The discharger shall comply with all of the conditions of this General Permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for enforcement action and/or removal from General Permit coverage.

2. The discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

B. General Permit Actions

1. This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.

2. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the dischargers so notified.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

D. Duty to Mitigate

The discharger shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit, which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The discharger shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with the conditions of this General Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a discharger when necessary to achieve compliance with the conditions of this General Permit.

F. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of Federal, State, or local laws or regulations.

G. Duty to Maintain Records and Provide Information

1. The discharger shall maintain a paper or electronic copy of all required records, including a copy of this General Permit, for three years from the date generated or date submitted, whichever is last. These records shall be available at the construction site until construction is completed.

2. The discharger shall furnish the Regional Water Board, State Water Board, or U.S. EPA, within a reasonable time, any requested information to determine compliance with this General Permit. The discharger shall also furnish, upon request, copies of records that are required to be kept by this General Permit.

H. Inspection and Entry

The discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, and/or, in the case of construction sites which discharge through a municipal separate storm sewer, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the discharger's premises at reasonable times where a regulated construction activity is being conducted or where records must be kept under the conditions of this General Permit;

2. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;

3. Inspect at reasonable times the complete construction site, including any off-site staging areas or material storage areas, and the erosion/sediment controls; and

4. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

I. Electronic Signature and Certification Requirements

1. All Permit Registration Documents (PRDs) and Notice of Terminations (NOTs) shall be electronically signed, certified, and submitted via SMARTS to the State Water Board. Either the Legally Responsible Person (LRP) or a person legally authorized to sign and certify PRDs and NOTs on behalf of the LRP (the LRP's Approved Signatory) must submit all information electronically via SMARTS.

   a. The LRP's Approved Signatory must be one of the following:

      i. For a corporation: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

      ii. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

      iii. For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA);

      iv. For the military: Any military officer who has been designated.

      v. For a public university: An authorized university official

b. Changes to Authorization. If an approved signatory's authorization is no longer accurate, a new authorization satisfying the requirements of paragraph (a) of this section must be submitted via SMARTS prior to or together with any reports, information or applications to be signed by an approved signatory.

2. All Annual Reports, or other information required by the General Permit (other than PRDs and NOTs) or requested by the Regional Water Board, State Water Board, U.S. EPA, or local storm water management agency shall be certified and submitted by the LRP or the LRP's approved signatory as described above.

J. Certification

Any person signing documents under Section IV.I above, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

K. Anticipated Noncompliance

The discharger shall give advance notice to the Regional Water Board and local storm water management agency of any planned changes in the construction activity, which may result in noncompliance with General Permit requirements.

L. Bypass

Bypass[8] is prohibited. The Regional Water Board may take enforcement action against the discharger for bypass unless:

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage;[9]

[8] The intentional diversion of waste streams from any portion of a treatment facility

[9] Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

2. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that could occur during normal periods of equipment downtime or preventative maintenance;

3. The discharger submitted a notice at least ten days in advance of the need for a bypass to the Regional Water Board; or

4. The discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such a case, the above bypass conditions are not applicable. The discharger shall submit notice of an unanticipated bypass as required.

M. Upset

1. A discharger that wishes to establish the affirmative defense of an upset[10] in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the discharger can identify the cause(s) of the upset

   b. The treatment facility was being properly operated by the time of the upset

   c. The discharger submitted notice of the upset as required; and

   d. The discharger complied with any remedial measures required

2. No determination made before an action of noncompliance occurs, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

3. In any enforcement proceeding, the discharger seeking to establish the occurrence of an upset has the burden of proof

[10] An exceptional incident in which there is unintentional and temporary noncompliance the technology based numeric effluent limitations because of factors beyond the reasonable control of the discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

N. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years or by both.

O. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the discharger is or may be subject to under Section 311 of the CWA.

P. Severability

The provisions of this General Permit are severable; and, if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

Q. Reopener Clause

This General Permit may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations (CFR) 122.62, 122.63, 122.64, and 124.5.

R. Penalties for Violations of Permit Conditions

1. Section 309 of the CWA provides significant penalties for any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such section in a permit issued under Section 402. Any person who violates any permit condition of this General Permit is subject to a civil penalty not to exceed $37,500[11] per calendar day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

[11] May be further adjusted in accordance with the Federal Civil Penalties Inflation Adjustment Act.

2. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which in some cases are greater than those under the CWA.

S. Transfers

This General Permit is not transferable.

T. Continuation of Expired Permit

This General Permit continues in force and effect until a new General Permit is issued or the SWRCB rescinds this General Permit. Only those dischargers authorized to discharge under the expiring General Permit are covered by the continued General Permit.

V. EFFLUENT STANDARDS

A. Narrative Effluent Limitations

1. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

2. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

B. Numeric Effluent Limitations (NELs)

Table 1- Numeric Effluent Limitations, Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level	Numeric Effluent Limitation
pH	Field test with calibrated portable instrument	Risk Level 2	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5	N/A
		Risk Level 3			lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Risk Level 2	1	NTU	250 NTU	N/A
		Risk Level 3			250 NTU	500 NTU

1. Numeric Effluent Limitations (NELs):

   a. **Storm Event, Daily Average pH Limits –** For Risk Level 3 dischargers, the pH of storm water and non-storm water discharges

shall be within the ranges specified in Table 1 during any site phase where there is a "high risk of pH discharge."[12]

b. **Storm Event Daily Average Turbidity Limit –** For Risk Level 3 dischargers, the turbidity of storm water and non-storm water discharges shall not exceed 500 NTU.

2. If daily average sampling results are outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file monitoring results in violation within 5 business days of obtaining the results.

3. **Compliance Storm Event**:

   Discharges of storm water from Risk Level 3 sites shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for Risk Level 3 discharges is the 5 year, 24 hour storm (expressed in tenths of an inch of rainfall), as determined by using these maps:

   http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif
   http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif

   Compliance storm event verification shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.

4. Dischargers shall not be required to comply with NELs if the site receives run-on from a forest fire or any other natural disaster.

C. Numeric Action Levels (NALs)

1. For Risk Level 2 and 3 dischargers, the lower storm event average NAL for pH is 6.5 pH units and the upper storm event average NAL for pH is 8.5 pH units. The discharger shall take actions as described below if the discharge is outside of this range of pH values.

[12] A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.

2. For Risk Level 2 and 3 dischargers, the NAL storm event daily average for turbidity is 250 NTU. The discharger shall take actions as described below if the discharge is outside of this range of turbidity values.

3. Whenever the results from a storm event daily average indicate that the discharge is below the lower NAL for pH, exceeds the upper NAL for pH, or exceeds the turbidity NAL (as listed in Table 1), the discharger shall conduct a construction site and run-on evaluation to determine whether pollutant source(s) associated with the site's construction activity may have caused or contributed to the NAL exceedance and shall immediately implement corrective actions if they are needed.

4. The site evaluation shall be documented in the SWPPP and specifically address whether the source(s) of the pollutants causing the exceedance of the NAL:

    a. Are related to the construction activities and whether additional BMPs are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) determine what corrective action(s) were taken or will be taken and with a description of the schedule for completion.

        AND/OR:

    b. Are related to the run-on associated with the construction site location and whether additional BMPs measures are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) what corrective action(s) were taken or will be taken with a description of the schedule for completion.

VI. RECEIVING WATER LIMITATIONS

A. The discharger shall ensure that storm water discharges and authorized non-storm water discharges to any surface or ground water will not adversely affect human health or the environment.

B. The discharger shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

C. The discharger shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards (collectively, WQS) contained in a Statewide Water Quality Control Plan, the California Toxics Rule, the National Toxics Rule, or the applicable Regional Water Board's Water Quality Control Plan (Basin Plan).

D. Dischargers located within the watershed of a CWA § 303(d) impaired water body, for which a TMDL has been approved by the U.S. EPA, shall comply with the approved TMDL if it identifies "construction activity" or land disturbance as a source of the pollution.

VII. TRAINING QUALIFICATIONS AND CERTIFICATION REQUIREMENTS

A. General

The discharger shall ensure that all persons responsible for implementing requirements of this General Permit shall be appropriately trained in accordance with this Section. Training should be both formal and informal, occur on an ongoing basis, and should include training offered by recognized governmental agencies or professional organizations. Those responsible for preparing and amending SWPPPs shall comply with the requirements in this Section VII.

The discharger shall provide documentation of all training for persons responsible for implementing the requirements of this General Permit in the Annual Reports.

B. SWPPP Certification Requirements

1. **Qualified SWPPP Developer:** The discharger shall ensure that SWPPPs are written, amended and certified by a Qualified SWPPP Developer (QSD). A QSD shall have one of the following registrations or certifications, and appropriate experience, as required for:

   a. A California registered professional civil engineer;

   b. A California registered professional geologist or engineering geologist;

   c. A California registered landscape architect;

   d. A professional hydrologist registered through the American Institute of Hydrology;

   e. A Certified Professional in Erosion and Sediment Control (CPESC) ™ registered through Enviro Cert International, Inc.;

   f. A Certified Professional in Storm Water Quality (CPSWQ) ™ registered through Enviro Cert International, Inc.; or

   g. A professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET);

Effective two years after the adoption date of this General Permit, a QSD shall have attended a State Water Board-sponsored or approved QSD training course.

2. The discharger shall list the name and telephone number of the currently designated Qualified SWPPP Developer(s) in the SWPPP.

3. **Qualified SWPPP Practitioner:** The discharger shall ensure that all BMPs required by this General Permit are implemented by a Qualified SWPPP Practitioner (QSP). A QSP is a person responsible for non-storm water and storm water visual observations, sampling and analysis. Effective two years from the date of adoption of this General Permit, a QSP shall be either a QSD or have one of the following certifications:

   a. A certified erosion, sediment and storm water inspector registered through Enviro Cert International, Inc.; or

   b. A certified inspector of sediment and erosion control registered through Certified Inspector of Sediment and Erosion Control, Inc.

   Effective two years after the adoption date of this General Permit, a QSP shall have attended a State Water Board-sponsored or approved QSP training course.

4. The LRP shall list in the SWPPP, the name of any Approved Signatory, and provide a copy of the written agreement or other mechanism that provides this authority from the LRP in the SWPPP.

5. The discharger shall include, in the SWPPP, a list of names of all contractors, subcontractors, and individuals who will be directed by the Qualified SWPPP Practitioner. This list shall include telephone numbers and work addresses. Specific areas of responsibility of each subcontractor and emergency contact numbers shall also be included.

6. The discharger shall ensure that the SWPPP and each amendment will be signed by the Qualified SWPPP Developer. The discharger shall include a listing of the date of initial preparation and the date of each amendment in the SWPPP.

VIII. RISK DETERMINATION

The discharger shall calculate the site's sediment risk and receiving water risk during periods of soil exposure (i.e. grading and site stabilization) and use the calculated risks to determine a Risk Level(s) using the methodology in

Appendix 1. For any site that spans two or more planning watersheds,[13] the discharger shall calculate a separate Risk Level for each planning watershed. The discharger shall notify the State Water Board of the site's Risk Level determination(s) and shall include this determination as a part of submitting the PRDs. If a discharger ends up with more than one Risk Level determination, the Regional Water Board may choose to break the project into separate levels of implementation.

IX. RISK LEVEL 1 REQUIREMENTS

Risk Level 1 Dischargers shall comply with the requirements included in Attachment C of this General Permit.

X. RISK LEVEL 2 REQUIREMENTS

Risk Level 2 Dischargers shall comply with the requirements included in Attachment D of this General Permit.

XI. RISK LEVEL 3 REQUIREMENTS

Risk Level 3 Dischargers shall comply with the requirements included in Attachment E of this General Permit.

XII. ACTIVE TREATMENT SYSTEMS (ATS)

Dischargers choosing to implement an ATS on their site shall comply with all of the requirements in Attachment F of this General Permit.

[13] Planning watershed: defined by the Calwater Watershed documents as a watershed that ranges in size from approximately 3,000 to 10,000 acres http://cain.ice.ucdavis.edu/calwater/calwfaq.html, http://gis.ca.gov/catalog/BrowseRecord.epl?id=22175 .

XIII. POST-CONSTRUCTION STANDARDS

A. All dischargers shall comply with the following runoff reduction requirements unless they are located within an area subject to post-construction standards of an active Phase I or II municipal separate storm sewer system (MS4) permit that has an approved Storm Water Management Plan.

1. This provision shall take effect three years from the adoption date of this permit, or later at the discretion of the Executive Officer of the Regional Board.

2. The discharger shall demonstrate compliance with the requirements of this section by submitting with their NOI a map and worksheets in accordance with the instructions in Appendix 2. The discharger shall use non-structural controls unless the discharger demonstrates that non-structural controls are infeasible or that structural controls will produce greater reduction in water quality impacts.

3. The discharger shall, through the use of non-structural and structural measures as described in Appendix 2, replicate the pre-project water balance (for this permit, defined as the volume of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event (or the smallest storm event that generates runoff, whichever is larger). Dischargers shall inform Regional Water Board staff at least 30 days prior to the use of any structural control measure used to comply with this requirement. Volume that cannot be addressed using non-structural practices shall be captured in structural practices and approved by the Regional Water Board. When seeking Regional Board approval for the use of structural practices, dischargers shall document the infeasibility of using non-structural practices on the project site, or document that there will be fewer water quality impacts through the use of structural practices.

4. For sites whose disturbed area exceeds two acres, the discharger shall preserve the pre-construction drainage density (miles of stream length per square mile of drainage area) for all drainage areas within the area serving a first order stream[14] or larger stream and ensure that post-project time of runoff concentration is equal or greater than pre-project time of concentration.

[14] A first order stream is defined as a stream with no tributaries.

B. All dischargers shall implement BMPs to reduce pollutants in storm water discharges that are reasonably foreseeable after all construction phases have been completed at the site (Post-construction BMPs).

XIV. SWPPP REQUIREMENTS

A. The discharger shall ensure that the Storm Water Pollution Prevention Plans (SWPPPs) for all traditional project sites are developed and amended or revised by a QSD. The SWPPP shall be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;

2. Where not otherwise required to be under a Regional Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;

3. Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the BAT/BCT standard;

4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and

5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

B. To demonstrate compliance with requirements of this General Permit, the QSD shall include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.

C. The discharger shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

XV. REGIONAL WATER BOARD AUTHORITIES

A. In the case where the Regional Water Board does not agree with the discharger's self-reported risk level (e.g., they determine themselves to be a Level 1 Risk when they are actually a Level 2 Risk site), Regional Water Boards may either direct the discharger to reevaluate the Risk Level(s) for their site or terminate coverage under this General Permit.

B. Regional Water Boards may terminate coverage under this General Permit for dischargers who fail to comply with its requirements or where they determine that an individual NPDES permit is appropriate.

C. Regional Water Boards may require dischargers to submit a Report of Waste Discharge / NPDES permit application for Regional Water Board consideration of individual requirements.

D. Regional Water Boards may require additional Monitoring and Reporting Program Requirements, including sampling and analysis of discharges to sediment-impaired water bodies.

E. Regional Water Boards may require dischargers to retain records for more than the three years required by this General Permit.

XVI. ANNUAL REPORTING REQUIREMENTS

A. All dischargers shall prepare and electronically submit an Annual Report no later than September 1 of each year.

B. The discharger shall certify each Annual Report in accordance with the Special Provisions.

C. The discharger shall retain an electronic or paper copy of each Annual Report for a minimum of three years after the date the annual report is filed.

D. The discharger shall include storm water monitoring information in the Annual Report consisting of:

1. a summary and evaluation of all sampling and analysis results, including copies of laboratory reports;

2. the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit");

3. a summary of all corrective actions taken during the compliance year;

4. identification of any compliance activities or corrective actions that were not implemented;

5. a summary of all violations of the General Permit;

6. the names of individual(s) who performed the facility inspections, sampling, visual observation (inspections), and/or measurements;

7. the date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation (rain gauge); and

8. the visual observation and sample collection exception records and reports specified in Attachments C, D, and E.

E. The discharger shall provide training information in the Annual Report consisting of:

1. documentation of all training for individuals responsible for all activities associated with compliance with this General Permit;

2. documentation of all training for individuals responsible for BMP installation, inspection, maintenance, and repair; and

3. documentation of all training for individuals responsible for overseeing, revising, and amending the SWPPP.

ATTACHMENT A
Linear Underground/ Overhead Requirements

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All Linear Underground/Overhead project dischargers who submit permit registration documents (PRDs) indicating their intention to be regulated under the provisions of this General Permit shall comply with the following:

A. DEFINITION OF LINEAR UNDERGROUND/OVERHEAD PROJECTS

1. Linear Underground/Overhead Projects (LUPs) include, but are not limited to, any conveyance, pipe, or pipeline for the transportation of any gaseous, liquid (including water and wastewater for domestic municipal services), liquiescent, or slurry substance; any cable line or wire for the transmission of electrical energy; any cable line or wire for communications (e.g., telephone, telegraph, radio, or television messages); and associated ancillary facilities. Construction activities associated with LUPs include, but are not limited to, (a) those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment, and associated ancillary facilities); and include, but are not limited to, (b) underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/ or pavement repair or replacement, and stockpile/borrow locations.

2. LUP evaluation shall consist of two tasks:

a. Confirm that the project or project section(s) qualifies as an LUP. The State Water Board website contains a project determination guidance flowchart. http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

b. Identify which Type(s) (1, 2 or 3 described in Section I below) are applicable to the project or project sections based on project sediment and receiving water risk. (See Attachment A.1)

3. A Legally Responsible Person (LRP) for a Linear Underground/Overhead project is required to obtain CGP coverage under one or more permit registration document (PRD) electronic submittals to the State Water Board's Storm Water Multi-Application and Report Tracking (SMARTs) system. Attachment A.1 contains a flow chart to be used when determining if a linear project qualifies for coverage and to determine LUP Types. Since a LUP may be constructed within both developed and undeveloped locations and portions of LUPs may be constructed by different contractors, LUPs may be broken into logical permit sections. Sections may be determined based on portions of a project conducted by one contractor. Other situations may also occur, such as the time period in which the sections of a project will be constructed (e.g. project phases), for which separate permit coverage is possible. For projects that are broken into separate sections, a description of how each section relates to the overall project and the definition of the boundaries between sections shall be clearly stated.

4. Where construction activities transverse or enter into different Regional Water Board jurisdictions, LRPs shall obtain permit coverage for each Regional Water Board area involved prior to the commencement of construction activities.

5. Small Construction Rainfall Erosivity Waiver

EPA's Small Construction Erosivity Waiver applies to sites between one and five acres demonstrating that there are no adverse water quality impacts.

Dischargers eligible for a Rainfall Erosivity Waiver based on low erosivity potential shall complete the electronic Notice of Intent (NOI) and Sediment Risk form through the State Water Board's SMARTS system, certifying that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five. Where the LRP changes or another LRP is added during construction, the new LRP must also submit a waiver certification through the SMARTS system.

If a small linear construction site continues beyond the projected completion date given on the waiver certification, the LRP shall recalculate the rainfall erosivity factor for the new project duration and submit this information through the SMARTS system. If the new R factor is below five (5), the discharger shall update through SMARTS all applicable information on the waiver certification and retain a copy of the revised waiver onsite. The LRP shall submit the new waiver certification 30 days prior to the projected completion date listed on the original waiver form to assure exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, the LRP shall be required to apply for coverage under this Order.

B. LINEAR PROJECT PERMIT REGISTRATION DOCUMENTS (PRDs)

Any information provided to the Regional Water Board shall comply with the Homeland Security Act and any other federal law that concerns security in the United States; any information that does not comply should not be submitted. PRDs shall consist of the following:

1. Notice of Intent (NOI)

Prior to construction activities, the LRP of a proposed linear underground/overhead project shall utilize the processes and methods provided in Attachment A.2, Permit Registration Documents (PRDs) – General Instructions for Linear Underground/Overhead Projects to comply with the Construction General Permit.

2. Site Maps

LRPs submitting PRDs shall include at least 3 maps. The first map will be a zoomed[1] 1000-1500 ft vicinity map that shows the starting point of the project. The second will be a zoomed map of 1000-1500 ft showing the ending location of the project. The third will be a larger view vicinity map, 1000 ft to 2000 ft, displaying the entire project location depending on the project size, and indicating the LUP type (1, 2 or 3) areas within the total project footprint.

3. Drawings

LRPs submitting PRDs shall include a construction drawing(s) or other appropriate drawing(s) or map(s) that shows the locations of storm drain

[1] An image with a close-up/enhanced detailed view of site features that show minute details such as streets and neighboring structures.
Or: An image with a close-up/enhanced detailed view of the site's surrounding infrastructure.
Or: An image with a close up detailed view of the project and its surroundings.

inlets and waterbodies[2] that may receive discharges from the construction activities and that shows the locations of BMPs to be installed for all those BMPs that can be illustrated on the revisable drawing(s) or map(s). If storm drain inlets, waterbodies, and/or BMPs cannot be adequately shown on the drawing(s) or map(s) they should be described in detail within the SWPPP.

4. Storm Water Pollution Prevention Plan (SWPPP)

LUP dischargers shall comply with the SWPPP Preparation, Implementation, and Oversight requirements in Section K of this Attachment.

5. Contact information

LUP dischargers shall include contact information for all contractors (or subcontractors) responsible for each area of an LUP project. This should include the names, telephone numbers, and addresses of contact personnel. Specific areas of responsibility of each contact, and emergency contact numbers should also be included.

6. In the case of a public emergency that requires immediate construction activities, a discharger shall submit a brief description of the emergency construction activity within five days of the onset of construction, and then shall submit all PRDs within thirty days.

C. LINEAR PROJECT TERMINATION OF COVERAGE REQUIREMENTS

The LRP may terminate coverage of an LUP when construction activities are completed by submitting an electronic notice of termination (NOT) through the State Water Board's SMARTS system. Termination requirements are different depending on the complexity of the LUP. An LUP is considered complete when: (a) there is no potential for construction-related storm water pollution; (b) all elements of the SWPPP have been completed; (c) construction materials and waste have been disposed of properly; (d) the site is in compliance with all local storm water management requirements; and (e) the LRP submits a notice of termination (NOT) and has received approval for termination from the appropriate Regional Water Board office.

1. LUP Stabilization Requirements

The LUP discharger shall ensure that all disturbed areas of the construction site are stabilized prior to termination of coverage under this General Permit. Final stabilization for the purposes of submitting an NOT

[2] Includes basin(s) that the MS4 storm sewer systems may drain to for Hydromodification or Hydrological Conditional of Concerns under the MS4 permits.

is satisfied when all soil disturbing activities are completed and one of the following criteria is met:

a. In disturbed areas that were vegetated prior to construction activities of the LUP, the area disturbed must be re-established to a uniform vegetative cover equivalent to 70 percent coverage of the preconstruction vegetative conditions. Where preconstruction vegetation covers less than 100 percent of the surface, such as in arid areas, the 70 percent coverage criteria is adjusted as follows: if the preconstruction vegetation covers 50 percent of the ground surface, 70 percent of 50 percent (.70 X .50=.35) would require 35 percent total uniform surface coverage; or

b. Where no vegetation is present prior to construction, the site is returned to its original line and grade and/or compacted to achieve stabilization; or

c. Equiva lent stabilization measures have been employed. These measures include, but are not limited to, the use of such BMPs as blankets, reinforced channel liners, soil cement, fiber matrices, geotextiles, or other erosion resistant soil coverings or treatments.

2. LUP Termination of Coverage Requirements

The LRP shall file an NOT through the State Water Board's SMARTS system. By submitting an NOT, the LRP is certifying that construction activities for an LUP are complete and that the project is in full compliance with requirements of this General Permit and that it is now compliant with soil stabilization requirements where appropriate. Upon approval by the appropriate Regional Water Board office, permit coverage will be terminated.

3. Revising Coverage for Change of Acreage

When the LRP of a portion of an LUP construction project changes, or when a phase within a multi-phase project is completed, the LRP may reduce the total acreage covered by this General Permit. In reducing the acreage covered by this General Permit, the LRP shall electronically file revisions to the PRDs that include:

a. a revised NOI indicating the new project size;

b. a revised site map showing the acreage of the project completed, acreage currently under construction, acreage sold, transferred or added, and acreage currently stabilized.

c. SWPPP revisions, as appropriate; and

d. certification that any new LRPs have been notified of applicable requirements to obtain General Permit coverage. The certification shall include the name, address, telephone number, and e-mail address (if known) of the new LRP.

If the project acreage has increased, dischargers shall mail payment of revised annual fees within 14 days of receiving the revised annual fee notification.

D. DISCHARGE PROHIBITIONS

1. LUP dischargers shall not violate any discharge prohibitions contained in applicable Basin Plans or statewide water quality control plans. Waste discharges to Areas of Special Biological Significance (ASBS) are prohibited by the California Ocean Plan, unless granted an exception issued by the State Water Board.

2. LUP dischargers are prohibited from discharging non-storm water that is not otherwise authorized by this General Permit. Non-storm water discharges authorized by this General Permit[3] may include, fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, street cleaning, dewatering,[4] uncontaminated groundwater from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. Such discharges are allowed by this General Permit provided they are not relied upon to clean up failed or inadequate construction or post-construction BMPs designed to keep materials on site. These authorized non-storm water discharges:

[3] Dischargers must identify all authorized non-storm water discharges in the LUP's SWPPP and identify BMPs that will be implemented to either eliminate or reduce pollutants in non-storm water discharges. Regional Water Boards may direct the discharger to discontinue discharging such non-storm water discharges if determined that such discharges discharge significant pollutants or threaten water quality.
[4] Dewatering activities may be prohibited or need coverage under a separate permit issued by the Regional Water Boards. Dischargers shall check with the appropriate Regional Water Boards for any required permit or basin plan conditions prior to initial dewatering activities to land, storm drains, or waterbodies.

a. Shall not cause or contribute to a violation of any water quality standard;

b. Shall not violate any other provision of this General Permit;

c. Shall not violate any applicable Basin Plan;

d. Shall comply with BMPs as described in the SWPPP;

e. Shall not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;

f. Shall be monitored and meets the applicable NALs and NELs; and

g. Shall be reported by the discharger in the Annual Report.

If any of the above conditions are not satisfied, the discharge is not authorized by this General Permit. The discharger shall notify the Regional Water Board of any anticipated non-storm water discharges not authorized by this General Permit to determine the need for a separate NPDES permit.

Additionally, some LUP dischargers may be required to obtain a separate permit if the applicable Regional Water Board has adopted a General Permit for dewatering discharges. Wherever feasible, alternatives, that do not result in the discharge of non-storm water, shall be implemented in accordance with this Attachment's Section K.2 - SWPPP Implementation Schedule.

3. LUP dischargers shall ensure that trench spoils or any other soils disturbed during construction activities that are contaminated[5] are not discharged with storm water or non-storm water discharges into any storm drain or water body except pursuant to an NPDES permit.

When soil contamination is found or suspected and a responsible party is not identified, or the responsible party fails to promptly take the appropriate action, the LUP discharger shall have those soils sampled and tested to ensure that proper handling and public safety measures are

[5] Contaminated soil contains pollutants in concentrations that exceed the appropriate thresholds that various regulatory agencies set for those substances. Preliminary testing of potentially contaminated soils will be based on odor, soil discoloration, or prior history of the site's chemical use and storage and other similar factors. When soil contamination is found or suspected and a responsible party is not identified, or the responsible party fails to promptly take the appropriate action, the discharger shall have those soils sampled and tested to ensure proper handling and public safety measures are implemented. The legally responsible person will notify the appropriate local, State, or federal agency(ies) when contaminated soil is found at a construction site, and will notify the Regional Water Board by submitting an NOT at the completion of the project.

implemented. The LUP discharger shall notify the appropriate local, State, and federal agency(ies) when contaminated soil is found at a construction site, and will notify the appropriate Regional Water Board.

4. Discharging any pollutant-laden water that will cause or contribute to an exceedance of the applicable Regional Water Board's Basin Plan from a dewatering site or sediment basin into any receiving water or storm drain is prohibited.

5. Debris[6] resulting from construction activities are prohibited from being discharged from construction project sites.

E. SPECIAL PROVISIONS

1. Duty to Comply

a. The LUP discharger must comply with all of the conditions of this General Permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for enforcement action and/or removal from General Permit coverage.

b. The LUP discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

2. General Permit Actions

a. This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.

[6] Litter, rubble, discarded refuse, and remains of something destroyed.

b. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the dischargers so notified.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an LUP discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The LUP discharger shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit, which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The LUP discharger shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with the conditions of this General Permit and with the requirements of the Storm Water Pollution Prevention Plan (SWPPP). Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a discharger when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of Federal, State, or local laws or regulations.

7. Duty to Maintain Records and Provide Information

a. The LUP discharger shall maintain a paper or electronic copy of all required records, including a copy of this General Permit, for three years from the date generated or date submitted, whichever is last. These records shall be kept at the construction site or in a crew

member's vehicle until construction is completed, and shall be made available upon request.

b. The LUP discharger shall furnish the Regional Water Board, State Water Board, or USEPA, within a reasonable time, any requested information to determine compliance with this General Permit. The LUP discharger shall also furnish, upon request, copies of records that are required to be kept by this General Permit.

8. Inspection and Entry

The LUP discharger shall allow the Regional Water Board, State Water Board, USEPA, and/or, in the case of construction sites which discharge through a municipal separate storm sewer, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the discharger's premises at reasonable times where a regulated construction activity is being conducted or where records must be kept under the conditions of this General Permit;

b. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;

c. Inspect at reasonable times the complete construction site, including any off-site staging areas or material storage areas, and the erosion/sediment controls; and

d. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

9. Electronic Signature and Certification Requirements

a. All Permit Registration Documents (PRDs) and Notices of Termination (NOTs) shall be electronically signed, certified, and submitted via SMARTS to the State Water Board. Either the Legally Responsible Person (LRP) or a person legally authorized to sign and certify PRDs and NOTs on behalf of the LRP (the LRP's Approved Signatory) must submit all information electronically via SMARTS. For Linear Underground/Overhead projects, the Legally Responsible Person is the person in charge of the utility company, municipality, or other public or private company or agency that owns or operates the LUP. The LRP's Approved Signatory must be one of the following:

i For a corporation: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(2) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

ii For a partnership or sole proprietorship: a general partner or the proprietor, respectively; or

iii For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).

b. Changes to Authorization. If an approved signatory's authorization is no longer accurate, a new authorization satisfying the requirements of paragraph (a) of this section must be submitted via SMARTS prior to or together with any reports, information or applications to be signed by an approved signatory.

c. All SWPPP revisions, annual reports, or other information required by the General Permit (other than PRDs and NOTs) or requested by the Regional Water Board, State Water Board, USEPA, or local storm water management agency shall be certified and submitted by the LRP or the LRP's approved signatory as described above.

10. Certification

Any person signing documents under Section E.9 above, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. Anticipated Noncompliance

The LUP discharger shall give advance notice to the Regional Water Board and local storm water management agency of any planned changes in the construction activity, which may result in noncompliance with General Permit requirements.

12. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years or by both.

13. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the LUP discharger is or may be subject to under Section 311 of the CWA.

14. Severability

The provisions of this General Permit are severable; and, if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

15. Reopener Clause

This General Permit may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of USEPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations (CFR) 122.62, 122.63, 122.64, and 124.5.

16. Penalties for Violations of Permit Conditions

a. Section 309 of the CWA provides significant penalties for any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such section in a permit issued under Section 402. Any person who violates any permit condition of this General Permit is

subject to a civil penalty not to exceed $37,500[7] per calendar day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which in some cases are greater than those under the CWA.

17. Transfers

This General Permit is not transferable. A new LRP of an ongoing construction activity must submit PRDs in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit. An LRP who is a property owner with active General Permit coverage who sells a fraction or all the land shall inform the new property owner(s) of the requirements of this General Permit.

18. Continuation of Expired Permit

This General Permit continues in force and effect until a new General Permit is issued or the SWRCB rescinds this General Permit. Only those dischargers authorized to discharge under the expiring General Permit are covered by the continued General Permit.

F. EFFLUENT STANDARDS

1. Narrative Effluent Limitations

a. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges regulated by this General Permit do not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

b. LUP dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of structural or non-structural controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

[7] May be further adjusted in accordance with the Federal Civil Penalties Inflation Adjustment Act

2. Numeric Effluent Limitations (NELs)

Table 1. Numeric Effluent Limitations, Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level	Numeric Effluent Limitation
pH	Field test with calibrated portable instrument	LUP Type 2	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5	N/A
		LUP Type 3			lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	LUP Type 2	1 NTU		250 NTU	N/A
		LUP Type 3			250 NTU	500 NTU

a. Numeric Effluent Limitations (NELs):

i **Storm Event, Daily Average pH Limits –** For LUP Type 3 dischargers, the daily average pH of storm water and non-storm water discharges shall be within the ranges specified in Table 1 during any project phase where there is a "high risk of pH discharge."[8]

ii **Storm Event Daily Average Turbidity Limit –** For LUP Type 3 dischargers, the daily average turbidity of storm water and non-storm water discharges shall not exceed 500 NTU.

[8] A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.

b. If a daily average sample result is outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file the results in violation within 5 business days of obtaining the results.

c. Compliance Storm Event:

Discharges of storm water from LUP Type 3 sites shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for LUP Type 3 discharges is the 5-year, 24-hour storm (expressed in tenths of an inch of rainfall), as determined by using these maps:

http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif
http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif

Compliance storm event verification shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.

d. Dischargers shall not be required to comply with NELs if the site receives run-on from a forest fire or any other natural disaster.

3. Numeric Action Levels (NALs)

a. For LUP Type 2 and 3 dischargers, the lower storm event daily average NAL for pH is 6.5 pH units and the upper storm event daily average NAL for pH is 8.5 pH units. The LUP discharger shall take actions as described below if the storm event daily average discharge is outside of this range of pH values.

b. For LUP Type 2 and 3 dischargers, the storm event daily average NAL for turbidity is 250 NTU. The discharger shall take actions as described below if the storm event daily average discharge is outside of this range of turbidity values.

c. Whenever daily average analytical effluent monitoring results indicate that the discharge is below the lower NAL for pH, exceeds the upper NAL for pH, or exceeds the turbidity NAL (as listed in Table 1), the LUP discharger shall conduct a construction site and run-on evaluation to determine whether pollutant source(s) associated with the site's construction activity may have caused or contributed to the NAL

exceedance and shall immediately implement corrective actions if they are needed.

d. The site evaluation will be documented in the SWPPP and specifically address whether the source(s) of the pollutants causing the exceedance of the NAL:

i Are related to the construction activities and whether additional BMPs or SWPPP implementation measures are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) determine what corrective action(s) were taken or will be taken and with a description of the schedule for completion.

AND/OR:

ii Are related to the run-on associated with the construction site location and whether additional BMPs or SWPPP implementation measures are required to (1) meet BAT/BCT requirements; (2) reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives; and (3) decide what corrective action(s) were taken or will be taken, including a description of the schedule for completion.

G. RECEIVING WATER LIMITATIONS

1. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges to any surface or ground water will not adversely affect human health or the environment.

2. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

3. LUP dischargers shall ensure that storm water discharges and authorized non-storm water discharges will not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards (collectively, WQS) contained in a Statewide Water Quality Control Plan, the California Toxics Rule, the National Toxics Rule, or the applicable Regional Water Board's Water Quality Control Plan (Basin Plan).

H. TRAINING QUALIFICATIONS

1. General

All persons responsible for implementing requirements of this General Permit shall be appropriately trained. Training should be both formal and informal, occur on an ongoing basis, and should include training offered by recognized governmental agencies or professional organizations. Persons responsible for preparing, amending and certifying SWPPPs shall comply with the requirements in this Section H.

2. SWPPP Certification Requirements

a. **Qualified SWPPP Developer:** The LUP discharger shall ensure that all SWPPPs be written, amended and certified by a Qualified SWPPP Developer (QSD). A QSD shall have one of the following registrations or certifications, and appropriate experience, as required for:

i A California registered professional civil engineer;

ii A California registered professional geologist or engineering geologist;

iii A California registered landscape architect;

iv A professional hydrologist registered through the American Institute of Hydrology;

v A certified professional in erosion and sediment control (CPESC) ™ registered through Enviro Cert International, Inc;

vi A certified professional in storm water quality (CPSWQ)™ registered through Enviro Cert International, Inc.; or

vii A certified professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET).

Effective two years after the adoption date of this General Permit, a QSD shall have attended a State Water Board-sponsored or approved QSD training course.

b. The LUP discharger shall ensure that the SWPPP is written and amended, as needed, to address the specific circumstances for each construction site covered by this General Permit prior to commencement of construction activity for any stage.

c. The LUP discharger shall list the name and telephone number of the currently designated Qualified SWPPP Developer(s) in the SWPPP.

d. **Qualified SWPPP Practitioner:** The LUP discharger shall ensure that all elements of any SWPPP for each project will be implemented by a Qualified SWPPP Practitioner (QSP). A QSP is a person responsible for non-storm water and storm water visual observations, sampling and analysis, and for ensuring full compliance with the permit and implementation of all elements of the SWPPP. Effective two years from the date of adoption of this General Permit, a QSP shall be either a QSD or have one of the following certifications:

   i A certified erosion, sediment and storm water inspector registered through Certified Professional in Erosion and Sediment Control, Inc.; or

   ii A certified inspector of sediment and erosion control registered through Certified Inspector of Sediment and Erosion Control, Inc.

   Effective two years after the adoption date of this General Permit, a QSP shall have attended a State Water Board-sponsored or approved QSP training course.

e. The LUP discharger shall ensure that the SWPPP include a list of names of all contractors, subcontractors, and individuals who will be directed by the Qualified SWPPP Practitioner, and who is ultimately responsible for implementation of the SWPPP. This list shall include telephone numbers and work addresses. Specific areas of responsibility of each subcontractor and emergency contact numbers shall also be included.

f. The LUP discharger shall ensure that the SWPPP and each amendment be signed by the Qualified SWPPP Developer. The LUP discharger shall include a listing of the date of initial preparation and the dates of each amendment in the SWPPP.

I. TYPES OF LINEAR PROJECTS

This attachment establishes three types (Type 1, 2 & 3) of complexity for areas within an LUP or project section based on threat to water quality. Project area Types are determined through Attachment A.1.

The Type 1 requirements below establish the baseline requirements for all LUPs subject to this General Permit. Additional requirements for Type 2 and Type 3 LUPs are labeled.

1. Type 1 LUPs*:*

LUP dischargers with areas of a LUP designated as Type 1 shall comply with the requirements in this Attachment. Type 1 LUPs are:

a. Those construction areas where 70 percent or more of the construction activity occurs on a paved surface and where areas disturbed during construction will be returned to preconstruction conditions or equivalent protection established at the end of the construction activities for the day; or

b. Where greater than 30 percent of construction activities occur within the non-paved shoulders or land immediately adjacent to paved surfaces, or where construction occurs on unpaved improved roads, including their shoulders or land immediately adjacent to them where:

   i Areas disturbed during construction will be returned to preconstruction conditions or equivalent protection is established at the end of the construction activities for the day to minimize the potential for erosion and sediment deposition, and

   ii Areas where established vegetation was disturbed during construction will be stabilized and re-vegetated by the end of project. When required, adequate temporary stabilization BMPs will be installed and maintained until vegetation is established to meet minimum cover requirements established in this General Permit for final stabilization.

c. Where the risk determination is as follows:

   i Low sediment risk, low receiving water risk, or

   ii Low sediment risk, medium receiving water risk, or

   iii Medium sediment risk, low receiving water risk

2. Type 2 LUPs:

Type 2 LUPs are determined by the Combined Risk Matrix in Attachment A.1. Type 2 LUPs have the specified combination of risk:

d. High sediment risk, low receiving water risk, or

e. Medium sediment risk, medium receiving water risk, or

f. Low sediment risk, high receiving water risk

Receiving water risk is either considered "Low" for those areas of the project that are not in close proximity to a sensitive receiving watershed, "Medium" for those areas of the project within a sensitive receiving watershed yet outside of the flood plain of a sensitive receiving water body, and "High" where the soil disturbance is within close proximity to a sensitive receiving water body. Project sediment risk is calculated based on the Risk Factor Worksheet in Attachment C of this General Permit.

3. Type 3 LUPs:

Type 3 LUPs are determined by the Combined Risk Matrix in Attachment A.1. Type 3 LUPs have the specified combination of risk:

a. High sediment risk, high receiving water risk, or

b. High sediment risk, medium receiving water risk, or

c. Medium sediment risk, high receiving water risk

Receiving water risk is either considered "Medium" for those areas of the project within a sensitive receiving watershed yet outside of the flood plain of a sensitive receiving water body, or "High" where the soil disturbance is within close proximity to a sensitive receiving water body. Project sediment risk is calculated based on the Risk Factor Worksheet in Attachment C.

J. LUP TYPE-SPECIFIC REQUIREMENTS

1. Effluent Standards

a. Narrative – LUP dischargers shall comply with the narrative effluent standards below.

i Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

ii LUP dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

b. Numeric – LUP Type 1 dischargers are not subject to a numeric effluent standard

c. Numeric –LUP Type 2 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU.

d. Numeric – LUP Type 3 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU. In addition, LUP Type 3 dischargers are subject to a pH NEL of 6.0-9.0 and a turbidity NEL of 500 NTU.

2. Good Site Management "Housekeeping"

a. LUP dischargers shall implement good site management (i.e., "housekeeping") measures for <u>construction materials</u> that could potentially be a threat to water quality if discharged. At a minimum, the good housekeeping measures shall consist of the following:

i Identify the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

ii Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

iii Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

iv Minimize exposure of construction materials to precipitation (not applicable to materials designed to be outdoors and exposed to the environment).

v Implement BMPs to control the off-site tracking of loose construction and landscape materials.

b. LUP dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

i Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

ii Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

iii Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

iv Cover waste disposal containers at the end of every business day and during a rain event.

v Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

vi Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

vii Implement procedures that effectively address hazardous and non-hazardous spills.

viii Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

(1) Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

(2) Appropriate spill response personnel are assigned and trained.

ix Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

c. LUP dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   i Prevent oil, grease, or fuel from leaking into the ground, storm drains or surface waters.

   ii Implement appropriate BMPs whenever equipment or vehicles are fueled, maintained or stored.

   iii Clean leaks immediately and disposing of leaked materials properly.

d. LUP dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   i Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   ii Contain fertilizers and other landscape materials when they are not actively being used.

   iii Discontinue the application of any erodible landscape material at least 2 days before a forecasted rain event[9] or during periods of precipitation.

   iv Applying erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   v Stacking erodible landscape material on pallets and covering or storing such materials when not being used or applied.

e. LUP dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, LUP dischargers shall do the following:

[9] 50% or greater chance of producing precipitation.

i Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

ii Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

iii Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

iv Ensure retention of sampling, visual observation, and inspection records.

v Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

f. LUP dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations.

3. Non-Storm Water Management

a. LUP dischargers shall implement measures to control all non-storm water discharges during construction.

b. LUP dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

c. LUP dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

4. Erosion Control

a. LUP dischargers shall implement effective wind erosion control.

b. LUP dischargers shall provide effective soil cover for inactive[10] areas and all finished slopes, and utility backfill.

[10] Areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days

c. LUP dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

5. Sediment Controls

a. LUP dischargers shall establish and maintain effective perimeter controls as needed, and implement effective BMPs for all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

b. On sites where sediment basins are to be used, LUP dischargers shall, at minimum, design sediment basins according to the guidance provided in CASQA's Construction BMP Handbook.

c. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall apply linear sediment controls along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths[11] in accordance with Table 2 below.

Table 2 – Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-25% 20	feet
25-50% 15	feet
Over 50%	10 feet

d. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall ensure that construction activity traffic to and from the project is limited to entrances and exits that employ effective controls to prevent off-site tracking of sediment.

e. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall ensure that all storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits (e.g. tire washoff locations) are maintained and protected from activities that reduce their effectiveness.

f. **Additional LUP Type 2 & 3 Requirement:** LUP Type 2 & 3 dischargers shall inspect all immediate access roads. At a minimum daily and prior to any rain event, the discharger shall remove any

[11] Sheet flow length is the length that shallow, low velocity flow travels across a site.

sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping).

g. **Additional LUP Type 3 Requirement:** The Regional Water Board may require LUP Type 3 dischargers to implement additional site-specific sediment control requirements if the implementation of the other requirements in this section are not adequately protecting the receiving waters.

6. Run-on and Run-off Controls

a. LUP dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site-shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this Attachment.

b. Run-on and runoff controls are not required for Type 1 LUPs unless the evaluation of quantity and quality of run-on and runoff deems them necessary or visual inspections show that the site requires such controls.

7. Inspection, Maintenance and Repair

a. All inspection, maintenance repair and sampling activities at the discharger's LUP location shall be performed or supervised by a QSP representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

b. LUP dischargers shall conduct visual inspections and observations daily during working hours (not recorded). At least once each 24-hour period during extended storm events, **LUP Type 2 & 3 dischargers** shall conduct visual inspections to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

c. Upon identifying failures or other shortcomings, as directed by the QSP, LUP dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

d. For each pre- and post-rain event inspection required, LUP dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format that includes the information described below.

e. The LUP discharger shall ensure that the checklist remains on-site or with the SWPPP. At a minimum, an inspection checklist should include:

   i Inspection date and date the inspection report was written.

   ii Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

   iii Site information, including stage of construction, activities completed, and approximate area of the site exposed.

   iv A description of any BMPs evaluated and any deficiencies noted.

   v If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

   vi Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

   vii Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

   viii Photographs taken during the inspection, if any.

   ix Inspector's name, title, and signature.

K. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS

1. Objectives

SWPPPs for all LUPs shall be developed and amended or revised by a QSD. The SWPPP shall be designed to address the following objectives:

a. All pollutants and their sources, including sources of sediment, associated with construction activities associated with LUP activity are controlled;

b. All non-storm water discharges are identified and either eliminated, controlled, or treated;

c. BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from LUPs during construction; and

d. Stabilization BMPs installed to reduce or eliminate pollutants after construction is completed are effective and maintained.

2. SWPPP Implementation Schedule

a. LUPs for which PRDs have been submitted to the State Water Board shall develop a site/project location SWPPP prior to the start of land-disturbing activity in accordance with this Section and shall implement the SWPPP concurrently with commencement of soil-disturbing activities.

b. For an ongoing LUP involving a change in the LRP, the new LRP shall review the existing SWPPP and amend it, if necessary, or develop a new SWPPP within 15 calendar days to conform to the requirements set forth in this General Permit.

3. Availability

The SWPPP shall be available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

L. REGIONAL WATER BOARD AUTHORITIES

1. Regional Water Boards shall administer the provisions of this General Permit. Administration of this General Permit may include, but is not limited to, requesting the submittal of SWPPPs, reviewing SWPPPs, reviewing monitoring and sampling and analysis reports, conducting compliance inspections, gathering site information by any medium including sampling, photo and video documentation, and taking enforcement actions.

2. Regional Water Boards may terminate coverage under this General Permit for dischargers who fail to comply with its requirements or where they determine that an individual NPDES permit is appropriate.

3. Regional Water Boards may issue separate permits for discharges of storm water associated with construction activity to individual dischargers, categories of dischargers, or dischargers in a geographic area. Upon issuance of such permits by a Regional Water Board, dischargers subject to those permits shall no longer be regulated by this General Permit.

4. Regional Water Boards may direct the discharger to reevaluate the LUP Type(s) for the project (or elements/areas of the project) and impose the appropriate level of requirements.

5. Regional Water Boards may terminate coverage under this General Permit for dischargers who negligently or with willful intent incorrectly determine or report their LUP Type (e.g., they determine themselves to be a LUP Type 1 when they are actually a Type 2).

6. Regional Water Boards may review PRDs and reject or accept applications for permit coverage or may require dischargers to submit a Report of Waste Discharge / NPDES permit application for Regional Water Board consideration of individual requirements.

7. Regional Water Boards may impose additional requirements on dischargers to satisfy TMDL implementation requirements or to satisfy provisions in their Basin Plans.

8. Regional Water Boards may require additional Monitoring and Reporting Program Requirements, including sampling and analysis of discharges to sediment-impaired water bodies.

9. Regional Water Boards may require dischargers to retain records for more than the three years required by this General Permit.

10. Based on an LUP's threat to water quality and complexity, the Regional Water Board may determine on a case-by-case basis that an LUP, or a portion of an LUP, is not eligible for the linear project requirements contained in this Attachment, and require that the discharger comply with all standard requirements in this General Permit.

11. The Regional Water Board may require additional monitoring and reporting program requirements including sampling and analysis of discharges to CWA § 303(d)-listed water bodies. Additional requirements imposed by the Regional Water Board shall be consistent with the overall monitoring effort in the receiving waters.

M. MONITORING AND REPORTING REQUIREMENTS

Table 3. LUP Summary of Monitoring Requirements

LUP Type	Visual Inspections				Sample Collection		
	Daily Site BMP	Pre-storm Event / Baseline	Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water	Non-Visible (when applicable)
1	X						x
2	X	X	X	X	X		x
3	X	X	X	X	X	X	x

1. Objectives

LUP dischargers shall prepare a monitoring and reporting program (M&RP) prior to the start of construction and immediately implement the program at the start of construction for LUPs. The monitoring program must be implemented at the appropriate level to protect water quality at all times throughout the life of the project. The M&RP must be a part of the SWPPP, included as an appendix or separate SWPPP chapter.

2. M&RP Implementation Schedule

a. LUP dischargers shall implement the requirements of this Section at the time of commencement of construction activity. LUP dischargers are responsible for implementing these requirements until construction activity is complete and the site is stabilized.

b. LUP dischargers shall revise the M&RP when:

i Site conditions or construction activities change such that a change in monitoring is required to comply with the requirements and intent of this General Permit.

ii The Regional Water Board requires the discharger to revise its M&RP based on its review of the document. Revisions may include, but not be limited to, conducting additional site inspections, submitting reports, and certifications. Revisions shall be submitted via postal mail or electronic e-mail.

iii The Regional Water Board may require additional monitoring and reporting program requirements including sampling and analysis of discharges to CWA § 303(d)-listed water bodies. Additional requirements imposed by the Regional Water Board shall be consistent with the overall monitoring effort in the receiving waters.

3. LUP Type 1 Monitoring and Reporting Requirements

a. LUP Type 1 Inspection Requirements

i LUP Type 1 dischargers shall ensure that all inspections are conducted by trained personnel. The name(s) and contact number(s) of the assigned inspection personnel should be listed in the SWPPP.

ii LUP Type 1 dischargers shall ensure that all visual inspections are conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring.

iii LUP Type 1 dischargers shall ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.

iv LUP Type 1 dischargers shall conduct daily visual inspections to verify that:

(1) Appropriate BMPs for storm water and non-storm water are being implemented in areas where active construction is occurring (including staging areas);

(2) Project excavations are closed, with properly protected spoils, and that road surfaces are cleaned of excavated material and construction materials such as chemicals by either removing or storing the material in protective storage containers at the end of every construction day;

(3) Land areas disturbed during construction are returned to pre-construction conditions or an equivalent protection is used at the end of each workday to eliminate or minimize erosion and the possible discharge of sediment or other pollutants during a rain event.

v Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved (e.g., paving is completed, substructures

are installed, vegetation meets minimum cover requirements for final stabilization, or other stabilization requirements are met).

vi Inspection programs are required for LUP Type 1 projects where temporary and permanent stabilization BMPs are installed and are to be monitored after active construction is completed. Inspection activities shall continue until adequate permanent stabilization is established and, in areas where re-vegetation is chosen, until minimum vegetative coverage is established in accordance with Section C.1 of this Attachment.

b. LUP Type 1 Monitoring Requirements for Non-Visible Pollutants

LUP Type 1 dischargers shall implement sampling and analysis requirements to monitor non-visible pollutants associated with (1) construction sites; (2) activities producing pollutants that are not visually detectable in storm water discharges; and (3) activities which could cause or contribute to an exceedance of water quality objectives in the receiving waters.

i Sampling and analysis for non-visible pollutants is only required where the LUP Type 1 discharger believes pollutants associated with construction activities have the potential to be discharged with storm water runoff due to a spill or in the event there was a breach, malfunction, failure and/or leak of any BMP. Also, failure to implement BMPs may require sample collection.

(1) Visual observations made during the monitoring program described above will help the LUP Type 1 discharger determine when to collect samples.

(2) The LUP Type 1 discharger is not required to sample if one of the conditions described above (e.g., breach or spill) occurs and the site is cleaned of material and pollutants and/or BMPs are implemented prior to the next storm event.

ii LUP Type 1 dischargers shall collect samples down-gradient from all discharge locations where the visual observations were made triggering the monitoring, and which can be safely accessed. For sites where sampling and analysis is required, personnel trained in water quality sampling procedures shall collect storm water samples.

iii If sampling for non-visible pollutant parameters is required, LUP Type 1 dischargers shall ensure that samples be analyzed for parameters indicating the presence of pollutants identified in the pollutant source assessment required in Section J.2.a.i.

iv LUP Type 1 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

v LUP Type 1 dischargers shall ensure that a sufficiently large sample of storm water that has not come into contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample[12]) will be collected for comparison with the discharge sample. Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff.

vi LUP Type 1 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, specific conductance, dissolved oxygen, conductivity, salinity, and Total Dissolved Solids (TDS).

vii For laboratory analyses, all sampling, sample preservation, and other analyses must be conducted according to test procedures pursuant to 40 C.F.R. Part 136. LUP Type 1 dischargers shall ensure that field samples are collected and analyzed according to manufacturer specifications of the sampling devices employed. Portable meters shall be calibrated according to manufacturer's specification.

viii LUP Type 1 dischargers shall ensure that all field and/or analytical data are kept in the SWPPP document.

c. <u>LUP Type 1 Visual Observation Exceptions</u>

i LUP Type 1 dischargers shall be prepared to collect samples and conduct visual observation (inspections) to meet the minimum visual observation requirements of this Attachment. The Type 1 LUP discharger is not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

(1) During dangerous weather conditions such as flooding and electrical storms;

(2) Outside of scheduled site business hours.

(3) When access to the site is unsafe due to storm events.

[12] Sample collected at a location unaffected by contruction activities.

ii If the LUP Type 1 discharger does not collect the required samples or visual observation (inspections) due to these exceptions, an explanation why the sampling or visual observation (inspections) were not conducted shall be included in both the SWPPP and the Annual Report.

d. Particle Size Analysis for Risk Justification

LUP Type 1 dischargers utilizing justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

4. LUP Type 2 & 3 Monitoring and Reporting Requirements

a. LUP Type 2 & 3 Inspection Requirements

i LUP Type 2 & 3 dischargers shall ensure that all inspections are conducted by trained personnel. The name(s) and contact number(s) of the assigned inspection personnel should be listed in the SWPPP.

ii LUP Type 2 & 3 dischargers shall ensure that all visual inspections are conducted daily during working hours and in conjunction with other daily activities in areas where active construction is occurring.

iii LUP Type 2 & 3 dischargers shall ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three rain events.

iv LUP Type 2 & 3 dischargers shall conduct daily visual inspections to verify that appropriate BMPs for storm water and non-storm water are being implemented and in place in areas where active construction is occurring (including staging areas).

v LUP Type 2 & 3 dischargers shall conduct inspections of the construction site prior to anticipated storm events, during extended storm events, and after actual storm events to identify areas contributing to a discharge of storm water associated with construction activity. Pre-storm inspections are to ensure that BMPs are properly installed and maintained; post-storm inspections are to assure that BMPs have functioned adequately. During

extended storm events, inspections shall be required during normal working hours for each 24-hour period.

vi Inspections may be discontinued in non-active construction areas where soil-disturbing activities are completed and final soil stabilization is achieved (e.g., paving is completed, substructures are installed, vegetation meets minimum cover requirements for final stabilization, or other stabilization requirements are met).

vii LUP Type 2 & 3 dischargers shall implement a monitoring program for inspecting projects that require temporary and permanent stabilization BMPs after active construction is complete. Inspections shall ensure that the BMPs are adequate and maintained. Inspection activities shall continue until adequate permanent stabilization is established and, in vegetated areas, until minimum vegetative coverage is established in accordance with Section C.1 of this Attachment.

viii If possible, LUP Type 2 & 3 dischargers shall install a rain gauge on-site at an accessible and secure location with readings made during all storm event inspections. When readings are unavailable, data from the closest rain gauge with publically available data may be used.

ix LUP Type 2 & 3 dischargers shall Include and maintain a log of the inspections conducted in the SWPPP. The log will provide the date and time of the inspection and who conducted the inspection.

b. <u>LUP Type 2 & 3 Storm Water Effluent Monitoring Requirements</u>

Table 4. LUP Type 2 & 3 Effluent Monitoring Requirements

LUP Type	Frequency	Effluent Monitoring
2	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	Turbidity, pH, and non-visible pollutant parameters (if applicable)
3	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	turbidity, pH, suspended sediment concentrations (SSC)[13] (only if turbidity NEL exceeded), plus non-visible pollutant parameters (if applicable)

i LUP Type 2 & 3 dischargers shall collect storm water grab samples from sampling locations characterizing discharges associated with

[13] Suspended Sediment Concentration monitoring is required for any Type 3 area that exceeds its turbidity NEL.

activity from the LUP active areas of construction. At a minimum, 3 samples shall be collected per day of discharge.

ii LUP Type 2 & 3 dischargers shall collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of ½ inch or more at the time of discharge.

iii LUP Type 2 & 3 dischargers shall ensure that storm water grab sample(s) obtained be representative of the flow and characteristics of the discharge.

iv LUP Type 2 & 3 dischargers shall analyze their effluent samples for:

(1) pH and turbidity
(2) Any additional parameter for which monitoring is required by the Regional Water Board.

v LUP Type 3 dischargers that have violated the turbidity daily average NEL shall analyze subsequent effluent samples for turbidity and SSC.

c. <u>LUP Type 2 & 3 Storm Water Effluent Sampling Locations</u>

i LUP Type 2 & 3 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire disturbed project or area.

ii LUP Type 2 & 3 dischargers may monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to exceedance of NALs or NELs (applicable to Type 3).

iii LUP Type 2 & 3 dischargers shall select analytical test methods from the list provided in Table 5 below.

iv LUP Type 2 & 3 dischargers shall ensure that all storm water sample collection preservation and handling shall be conducted in accordance with the “Storm Water Sample Collection and Handling Instructions” below.

d. <u>LUP Type 3 Receiving Water Monitoring Requirements</u>

i In the event that an LUP Type 3 discharger violates an applicable NEL contained in this General Permit and has a direct discharge to receiving waters, the LUP discharger shall subsequently sample Receiving Waters (RWs) for turbidity, pH (if applicable) and SSC.

ii LUP Type 3 dischargers that meet the project criteria in Appendix 3 of this General Permit and have more than 30 acres of soil disturbance in the project area or project section area designated as Type 3, shall comply with the Bioassessment requirements prior to commencement of construction activity.

iii LUP Type 3 dischargers shall obtain RW samples in accordance with the requirements of the Receiving Water Sampling Locations section (Section M.4.d of this Attachment).

e. LUP Type 3 Receiving Water Sampling Locations

i **Upstream/up-gradient RW samples**: LUP Type 3 dischargers shall obtain any required upstream/up-gradient receiving water samples from a representative and accessible location as close as possible to and upstream from the effluent discharge point.

ii **Downstream/down-gradient RW samples**: LUP Type 3 dischargers shall obtain any required downstream/down-gradient receiving water samples from a representative and accessible location as close as possible to and downstream from the effluent discharge point.

iii If two or more discharge locations discharge to the same receiving water, LUP Type 3 dischargers may sample the receiving water at a single upstream and downstream location.

f. LUP Type 2 & 3 Monitoring Requirements for Non-Visible Pollutants

LUP Type 2 & 3 dischargers shall implement sampling and analysis requirements to monitor non-visible pollutants associated with (1) construction sites; (2) activities producing pollutants that are not visually detectable in storm water discharges; and (3) activities which could cause or contribute to an exceedance of water quality objectives in the receiving waters.

i Sampling and analysis for non-visible pollutants is only required where LUP Type 2 & 3 dischargers believe pollutants associated with construction activities have the potential to be discharged with storm water runoff due to a spill or in the event there was a breach, malfunction, failure and/or leak of any BMP. Also, failure to implement BMPs may require sample collection.

(1) Visual observations made during the monitoring program described above will help LUP Type 2 & 3 dischargers determine when to collect samples.

(2) LUP Type 2 & 3 dischargers are not required to sample if one of the conditions described above (e.g., breach or spill) occurs and the site is cleaned of material and pollutants and/or BMPs are implemented prior to the next storm event.

ii LUP Type 2 & 3 dischargers shall collect samples down-gradient from the discharge locations where the visual observations were made triggering the monitoring and which can be safely accessed. For sites where sampling and analysis is required, personnel trained in water quality sampling procedures shall collect storm water samples.

iii If sampling for non-visible pollutant parameters is required, LUP Type 2 & 3 dischargers shall ensure that samples be analyzed for parameters indicating the presence of pollutants identified in the pollutant source assessment required in Section J.2.a.i.

iv LUP Type 2 & 3 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

v LUP Type 2 & 3 dischargers shall ensure that a sufficiently large sample of storm water that has not come into contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample[14]) will be collected for comparison with the discharge sample. Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff.

vi LUP Type 2 & 3 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, specific conductance, dissolved oxygen, conductivity, salinity, and Total Dissolved Solids (TDS).

vii For laboratory analyses, all sampling, sample preservation, and other analyses must be conducted according to test procedures pursuant to 40 C.F.R. Part 136. LUP Type 2 & 3 dischargers shall ensure that field samples are collected and analyzed according to manufacturer specifications of the sampling devices employed. Portable meters shall be calibrated according to manufacturer's specification.

viii LUP Type 2 & 3 dischargers shall ensure that all field and/or analytical data are kept in the SWPPP document.

[14] Sample collected at a location unaffected by construction activities

g. LUP Type 2 & 3 Visual Observation and Sample Collection Exceptions

i LUP Type 2 & 3 dischargers shall be prepared to collect samples and conduct visual observation (inspections) to meet the minimum visual observation requirements of this Attachment. Type 2 & 3 LUP dischargers are not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

(1) During dangerous weather conditions such as flooding and electrical storms;

(2) Outside of scheduled site business hours.

(3) When access to the site is unsafe due to storm events.

ii If the LUP Type 2 or 3 discharger does not collect the required samples or visual observation (inspections) due to these exceptions, an explanation why the sampling or visual observation (inspections) were not conducted shall be included in both the SWPPP and the Annual Report.

h. LUP Type 2 & 3 Storm Water Sample Collection and Handling Instructions

LUP Type 2 & 3 dischargers shall refer to Table 5 below for test Methods, detection Limits, and reporting Units. During storm water sample collection and handling, the LUP Type 2 & 3 discharger shall:

i Identify the parameters required for testing and the number of storm water discharge points that will be sampled. Request the laboratory to provide the appropriate number of sample containers, types of containers, sample container labels, blank chain of custody forms, and sample preservation instructions.

ii Determine how to ship the samples to the laboratory. The testing laboratory should receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory). The options are to either deliver the samples to the laboratory, arrange to have the laboratory pick them up, or ship them overnight to the laboratory.

iii Use only the sample containers provided by the laboratory to collect and store samples. Use of any other type of containers could contaminate your samples.

iv Prevent sample contamination, by not touching, or putting anything into the sample containers before collecting storm water samples.

v Not overfilling sample containers. Overfilling can change the analytical results.

vi Tightly screw the cap of each sample container without stripping the threads of the cap.

vii Complete and attach a label to each sample container. The label shall identify the date and time of sample collection, the person taking the sample, and the sample collection location or discharge point. The label should also identify any sample containers that have been preserved.

viii Carefully pack sample containers into an ice chest or refrigerator to prevent breakage and maintain temperature during shipment. Remember to place frozen ice packs into the shipping container. Samples should be kept as close to 4° C (39° F) as possible until arriving at the laboratory. Do not freeze samples.

ix Complete a Chain of Custody form for each set of samples. The Chain of Custody form shall include the discharger's name, address, and phone number, identification of each sample container and sample collection point, person collecting the samples, the date and time each sample container was filled, and the analysis that is required for each sample container.

x Upon shipping/delivering the sample containers, obtain both the signatures of the persons relinquishing and receiving the sample containers.

xi Designate and train personnel to collect, maintain, and ship samples in accordance with the above sample protocols and good laboratory practices.

xii Refer to the Surface Water Ambient Monitoring Program's (SWAMP) Quality Assurance Management Plan (QAMP) for more information on sampling collection and analysis. See http://www.waterboards.ca.gov/water_issues/programs/swamp/[15] QAMP Link: http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml

[15] Additional information regarding QAMP can be found at http://mpsl.mlml.calstate.edu/swqacompare.htm.

Table 5. Test Methods, Detection Limits, Reporting Units and Applicable NALs/NELs

Parameter	Test Method	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Levels	Numeric Effluent Limitation (LUP Type 3)
pH	Field test with calibrated portable instrument	Type 2 & 3	0.2	pH units	Lower = 6.5 upper = 8.5	Lower = 6.0 upper = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Type 2 & 3	1	NTU	250 NTU	500 NTU
SSC	ASTM Method D 3977-97[16]	Type 3 if NEL is exceeded	5 Mg/L		N/A	N/A
Bioassessment	(STE) Level I of (SAFIT),[17] fixed-count of 600 org/sample	Type 3 LUPs > 30 acres	N/A N/A		N/A	N/A

i. <u>LUP Type 2 & 3 Monitoring Methods</u>

i The LUP Type 2 or 3 discharger's project M&RP shall include a description of the following items:

(1) Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.

(2) Sampling locations, and sample collection and handling procedures. This shall include detailed procedures for sample collection, storage, preservation, and shipping to the testing lab to assure that consistent quality control and quality assurance is maintained. Dischargers shall attach to the monitoring program a copy of the Chain of Custody form used when handling and shipping samples.

[16] ASTM, 1999, Standard Test Method for Determining Sediment Concentration in Water Samples: American Society of Testing and Materials, D 3977-97, Vol. 11.02, pp. 389-394

[17] The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

(3) Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section M.4.f above.

ii LUP Type 2 & 3 dischargers shall ensure that all sampling and sample preservation be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses shall be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of field analysis conducted by the discharger for turbidity and pH, all analyses shall be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services (SSC exception). The LUP discharger shall conduct its own field analysis of pH and may conduct its own field analysis of turbidity if the discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis.

j. <u>LUP Type 2 & 3 Analytical Methods</u>

LUP Type 2 & 3 dischargers shall refer to Table 5 above for test Methods, detection Limits, and reporting Units.

i **pH**: LUP Type 2 & 3 dischargers shall perform pH analysis on-site with a calibrated pH meter or pH test kit. The LUP discharger shall record pH monitoring results on paper and retain these records in accordance with Section M.4.o, below.

ii **Turbidity**: LUP Type 2 & 3 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1. The results shall be recorded in the site log book in Nephelometric Turbidity Units (NTU).

iii **Suspended sediment concentration (SSC)**: LUP Type 3 dischargers exceeding their NEL, shall perform SSC analysis using ASTM Method D3977-97.

iv **Bioassessment**: LUP Type 3 dischargers shall perform bioassessment sampling and analysis according to Appendix 3 of this General Permit.

k. Watershed Monitoring Option

If an LUP Type 2 or 3 discharger is part of a qualified regional watershed-based monitoring program the LUP Type 2 or 3 discharger may be eligible for relief from the monitoring requirements in this Attachment. The Regional Water Board may approve proposals to substitute an acceptable watershed-based monitoring program if it determines that the watershed-based monitoring program will provide information to determine each discharger's compliance with the requirements of this General Permit.

l. Particle Size Analysis for Risk Justification

LUP Type 2 & 3 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

m. NAL Exceedance Report

i In the event that any effluent sample exceeds an applicable NAL, the Regional Water Boards may require LUP Type 2 & 3 dischargers to submit NAL Exceedance Reports.

ii LUP Type 2 & 3 dischargers shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity.

iii LUP Type 2 & 3 dischargers shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three years after the date the exceedance report is filed.

iv LUP Type 2 & 3 dischargers shall include in the NAL Exceedance Report:

(1) the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit"); and
(2) the date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.

(3) Description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

n. NEL Violation Report

i All LUP Type 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 5 days after the conclusion of the storm event.

ii In the event that a LUP Type 3 discharger has violated an applicable NEL, the discharger shall submit an NEL Violation Report to the State Water Board no later than 24 hours after the NEL exceedance has been identified.

iii The LUP Type 3 discharger shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity.

iv The LUP Type 3 discharger shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the violation report is filed.

v The LUP Type 3 discharger shall include in the NEL Violation Report:

(1) the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit"); and
(2) the date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.
(3) Description of the current on-site BMPs, and the proposed corrective actions taken to manage the NEL exceedance.

vi Compliance Storm Exemption:
In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event (see Section F.2.c of this Attachment), the LUP Type 3 discharger shall report the on-site rain gauge and nearby governmental rain gauge readings for verification.

o. Monitoring Records

LUP Type 2 & 3 dischargers shall ensure that records of all storm water monitoring information and copies of all reports (including Annual Reports) required by this General Permit be retained for a period of at least three years. LUP Type 2 & 3 dischargers may retain records off-

site and make them available upon request. These records shall include:

i The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation (rain gauge);

ii The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements;

iii The date and approximate time of analyses;

iv The individual(s) who performed the analyses;

v A summary of all analytical results from the last three years, the method detection limits and reporting units, the analytical techniques or methods used, and all chain of custody forms;

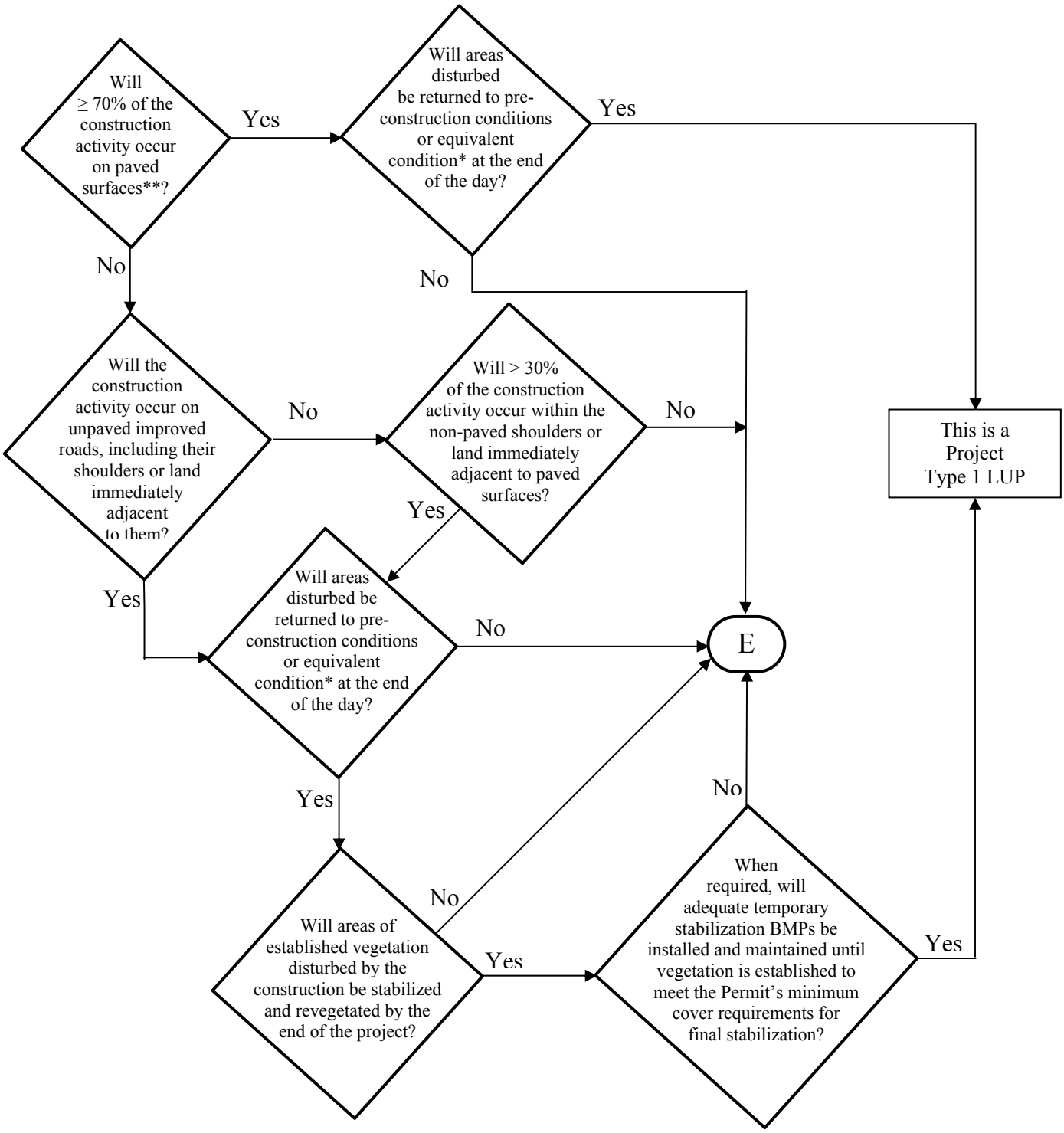
vi Quality assurance/quality control records and results;

vii Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Section M.4.a above);

viii Visual observation and sample collection exception records (see Section M.4.g above); and

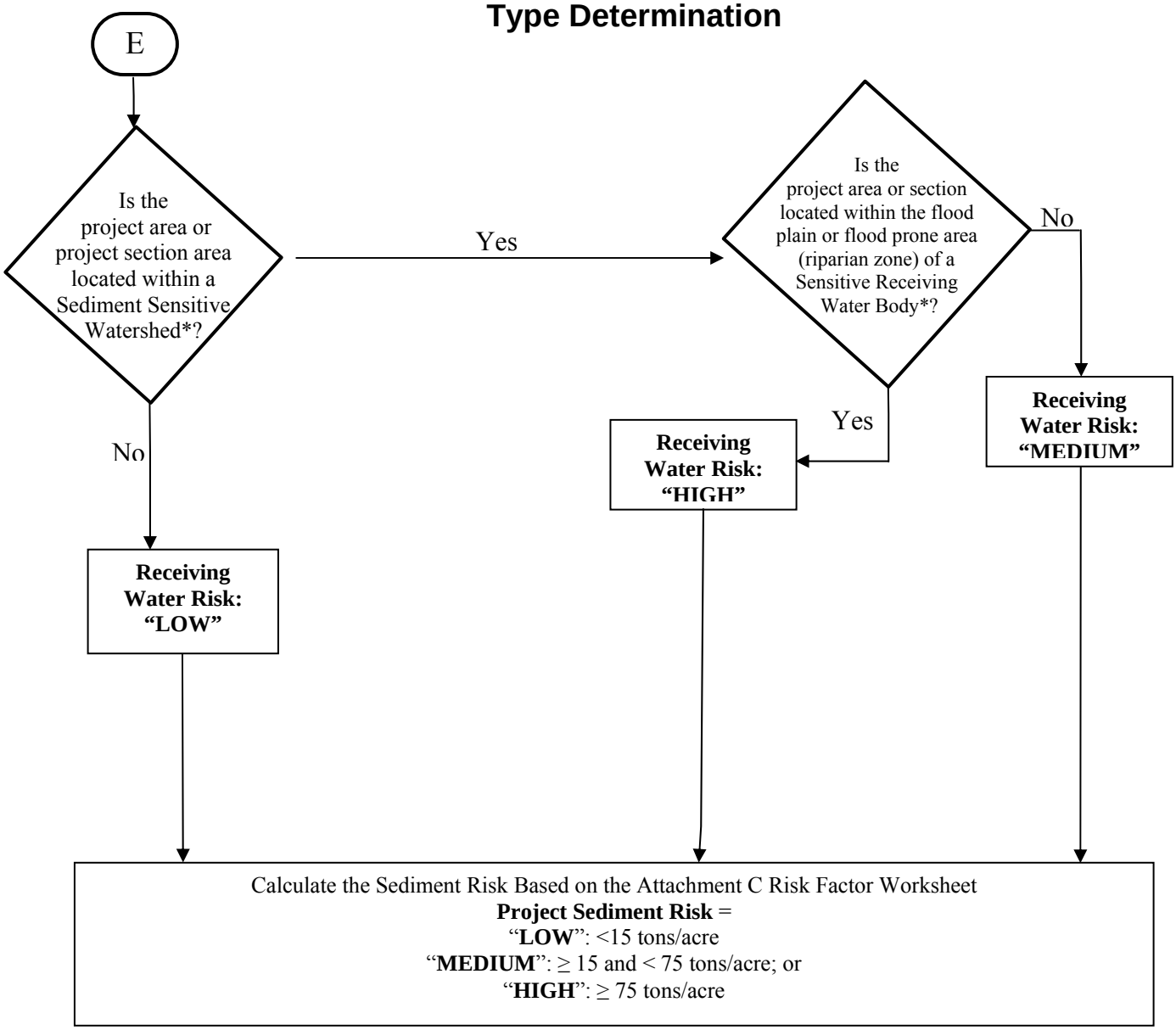
ix The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



*See Definition of Terms
** Or: "Will < 30% of the soil disturbance occur on unpaved surfaces?

ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



* See Definition of Terms

PROJECT SEDIMENT RISK

RECEIVING WATER RISK	**LOW**	**MEDIUM**	**HIGH**
LOW	Type 1	Type 1	Type 2
MEDIUM	Type 1	Type 2	Type 3
HIGH	Type 2	Type 3	Type 3

ATTACHMENT A.1
Definition of Terms

1. **Equivalent Condition** – Means disturbed soils such as those from trench excavation are required to be hauled away, backfilled into the trench, and/or covered (e.g., metal plates, pavement, plastic covers over spoil piles) at the end of the construction day.
2. **Linear Construction Activity** – Linear construction activity consists of underground/ overhead facilities that typically include, but are not limited to, any conveyance, pipe or pipeline for the transportation of any gaseous, liquid (including water, wastewater for domestic municipal services), liquescent, or slurry substance; any cable line or wire for the transmission of electrical energy; any cable line or wire for communications (e.g., telephone, telegraph, radio or television messages); and associated ancillary facilities. Construction activities associated with LUPs include, but are not limited to those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/ tower pad and cable/ wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/ borrow locations.
3. **Sediment Sensitive Receiving Water Body –** Defined as a water body segment that is listed on EPA's approved CWA 303(d) list for sedimentation/siltation, turbidity, or is designated with beneficial uses of SPAWN, MIGRATORY, and COLD.
4. **Sediment Sensitive Watershed –** Defined as a watershed draining into a receiving water body listed on EPA's approved CWA 303(d) list for sedimentation/siltation, turbidity, or a water body designated with beneficial uses of SPAWN, MIGRATORY, and COLD.

ATTACHMENT A.2
PERMIT REGISTRATION DOCUMENTS (PRDs)
GENERAL INSTRUCTIONS FOR LINEAR UNDERGROUND/OVERHEAD PROJECTS TO COMPLY WITH THE CONSTRUCTION GENERAL PERMIT

GENERAL INSTRUCTIONS

Who Must Submit

This permit is effective on July 1, 2010.

The Legally Responsible Person (LRP) for construction activities associated with linear underground/overhead project (LUP) must electronically apply for coverage under this General Permit on or after July 1, 2010. If it is determined that the LUP construction activities require an NPDES permit, the Legally Responsible Person[1] (LRP) shall submit PRDs for this General Permit in accordance with the following:

LUPs associated with Private or Municipal Development Projects

1. For LUPs associated with pre-development and pre-redevelopment construction activities:

   The LRP must obtain coverage[2] under this General Permit for its pre-development and pre-redevelopment construction activities where the total disturbed land area of these construction activities is greater than 1 acre.

2. For LUPs associated with new development and redevelopment construction projects:

   The LRP must obtain coverage under this General Permit for LUP construction activities associated with new development and redevelopment projects where the total disturbed land area of the LUP is greater than 1 acre. Coverage under this permit is not required where the same LUP construction activities are covered by another NPDES permit.

LUPs not associated with private or municipal new development or redevelopment projects:

The LRP must obtain coverage under this General Permit on or after July 1, 2010 for its LUP construction activities where the total disturbed land area is greater than 1 acre.

PRD Submittal Requirements

Prior to the start of construction activities a LRP must submit PRDs and fees to the State Water Board for each LUP.

New and Ongoing LUPs

Dischargers of new LUPs that commence construction activities after the adoption date of this General Permit shall file PRDs prior to the commencement of construction and implement the SWPPP upon the start of construction.

[1] person possessing the title of the land on which the construction activities will occur for the regulated site
[2] obtain coverage means filing PRDs for the project.

PERMIT REGISTRATION DOCUMENTS (PRDs)
GENERAL INSTRUCTIONS (CONTINUED)

Dischargers of ongoing LUPs that are currently covered under State Water Board Order No. 2003-0007 (Small LUP General Permit) shall electronically file Permit Registration Documents no later than July 1, 2010. After July 1, 2010, all NOIs subject to State Water Board Order No. 2003-0007-DWQ will be terminated. All existing dischargers shall be exempt from the risk determination requirements in Attachment A. All existing dischargers are therefore subject to LUP Type 1 requirements regardless of their project's sediment and receiving water risks. However, a Regional Board retains the authority to require an existing discharger to comply with the risk determination requirements in Attachment A.

Where to Apply

The Permit Registration Documents (PRDs) can be found at www.waterboards.ca.gov/water_issues/programs/stormwater/

Fees

The annual fee for storm water permits are established through the State of California Code of Regulations.

When Permit Coverage Commences

To obtain coverage under the General Permit, the LRP must include the complete PRDs and the annual fee. All PRDs deemed incomplete will be rejected with an explanation as to what is required to complete submittal. Upon receipt of complete PRDs and associated fee, each discharger will be sent a waste discharger's identification (WDID) number.

Projects and Activities Not Defined As Construction Activity

1. LUP construction activity does not include routine maintenance projects to maintain original line and grade, hydraulic capacity, or original purpose of the facility. Routine maintenance projects are projects associated with operations and maintenance activities that are conducted on existing lines and facilities and within existing right-of-way, easements, franchise agreements or other legally binding agreements of the discharger. Routine maintenance projects include, but are not limited to projects that are conducted to:

- Maintain the original purpose of the facility, or hydraulic capacity.
- Update existing lines[3] and facilities to comply with applicable codes, standards and regulations regardless if such projects result in increased capacity.
- Repairing leaks.

Routine maintenance does not include construction of new[4] lines or facilities resulting from compliance with applicable codes, standards and regulations.

[3] Update existing lines includes replacing existing lines with new materials or pipes.
[4] New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines.

Routine maintenance projects do not include those areas of maintenance projects that are outside of an existing right-of-way, franchise, easements, or agreements. When a project must acquire new areas, those areas may be subject to this General Permit based on the area of disturbed land outside the original right-of-way, easement or agreement.

2. LUP construction activity does not include field activities associated with the planning and design of a project (e.g., activities associated with route selection).

3. Tie-ins conducted immediately adjacent to "energized" or "pressurized" facilities by the discharger are not considered small construction activities where all other LUP construction activities associated with the tie-in are covered by a NOI and SWPPP of a third party or municipal agency.

Calculating Land Disturbance Areas of LUPs

The total land area disturbed for LUPs is the sum of the:

- Surface areas of trenches, laterals and ancillary facilities, plus
- Area of the base of stockpiles on unpaved surfaces, plus
- Surface area of the borrow area, plus
- Areas of paved surfaces constructed for the project, plus
- Areas of new roads constructed or areas of major reconstruction to existing roads (e.g. improvements to two-track surfaces or road widening) for the sole purpose of accessing construction activities or as part of the final project, plus
- Equipment and material storage, staging, and preparation areas (laydown areas) not on paved surfaces, plus
- Soil areas outside the surface area of trenches, laterals and ancillary facilities that will be graded, and/or disturbed by the use of construction equipment, vehicles and machinery during construction activities.

Stockpiling Areas

Stockpiling areas, borrow areas and the removal of soils from a construction site may or may not be included when calculating the area of disturbed soil for a site depending on the following conditions:

- For stockpiling of soils onsite or immediately adjacent to a LUP site and the stockpile is not on a paved surface, the area of the base of the stockpile is to be included in the disturbed area calculation.

- The surface area of borrow areas that are onsite or immediately adjacent to a project site are to be included in the disturbed area calculation.

- For soil that is hauled offsite to a location owned or operated by the discharger that is not a paved surface, the area of the base of the stockpile is to be included in the disturbed area calculation except when the offsite location is already subject to a separate storm water permit.

PERMIT REGISTRATION DOCUMENTS (PRDs)
GENERAL INSTRUCTIONS (CONTINUED)

- For soil that is brought to the project from an off-site location owned or operated by the discharger the surface area of the borrow pit is to be included in the disturbed area calculation except when the offsite location is already subject to a separate storm water permit.

- Trench spoils on a paved surface that are either returned to the trench or excavation or hauled away from the project daily for disposal or reuse will not be included in the disturbed area calculation.

If you have any questions concerning submittal of PRDs, please call the State Water Board at (866) 563-3107.

ATTACHMENT B
PERMIT REGISTRATION DOCUMENTS (PRDs) TO COMPLY WITH THE TERMS OF THE GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY

GENERAL INSTRUCTIONS

A. All Linear Construction Projects shall comply with the PRD requirements in Attachment A.2 of this Order.

B. Who Must Submit

Discharges of storm water associated with construction that results in the disturbance of one acre or more of land must apply for coverage under the General Construction Storm Water Permit (General Permit). Any construction activity that is a part of a larger common plan of development or sale must also be permitted, regardless of size. (For example, if 0.5 acre of a 20-acre subdivision is disturbed by the construction activities of discharger A and the remaining 19.5 acres is to be developed by discharger B, discharger A must obtain a General Storm Water Permit for the 0.5 acre project).

Other discharges from construction activities that are covered under this General Permit can be found in the General Permit Section II.B.

It is the LRP's responsibility to obtain coverage under this General Permit by electronically submitting complete PRDs (Permit Registration Documents).

In all cases, the proper procedures for submitting the PRDs must be completed before construction can commence.

C. Construction Activity Not Covered By This General Permit

Discharges from construction that are not covered under this General Permit can be found in the General Permit Sections II.A &B..

D. Annual Fees and Fee Calculation

Annual fees are calculated based upon the total area of land to be disturbed not the total size of the acreage owned. However, the calculation includes all acres to be disturbed during the duration of the project. For example, if 10 acres are scheduled to be disturbed the first year and 10 in each subsequent year for 5 years, the annual fees would be based upon 50 acres of disturbance. The State Water Board will evaluate adding acreage to an existing Permit Waste Discharge Identification (WDID) number on a case-by-case basis. In general, any acreage to be considered must be contiguous to the permitted land area and the existing

SWPPP must be appropriate for the construction activity and topography of the acreage under consideration. As acreage is built out and stabilized or sold, the Change of Information (COI) form enables the applicant to remove those acres from inclusion in the annual fee calculation. Checks should be made payable to: State Water Board.

The Annual fees are established through regulations adopted by the State Water Board. The total annual fee is the current base fee plus applicable surcharges for all construction sites submitting an NOI, based on the total acreage to be disturbed during the life of the project. Annual fees are subject to change by regulation.

Dischargers that apply for and satisfy the Small Construction Erosivity Wavier requirements shall pay a fee of $200.00 plus an applicable surcharge, see the General Permit Section II.B.7.

E. When to Apply

LRP's proposing to conduct construction activities subject to this General Permit must submit their PRDs prior to the commencement of construction activity.

F. Requirements for Completing Permit Registration Documents (PRDs)

All dischargers required to comply with this General Permit shall electronically submit the required PRDs for their type of construction as defined below.

G. Standard PRD Requirements (All Dischargers)

1. Notice of Intent
2. Risk Assessment (Standard or Site-Specific)
3. Site Map
4. SWPPP
5. Annual Fee
6. Certification

H. Additional PRD Requirements Related to Construction Type

1. Discharger in unincorporated areas of the State (not covered under an adopted Phase I or II SUSMP requirements) and that are not a linear project shall also submit a completed:
   a. Post-Construction Water Balance Calculator (Appendix 2).

2. Dischargers who are proposing to implement ATS shall submit:
   a. Complete ATS Plan in accordance with Attachment F at least 14 days prior to the planned operation of the ATS and a paper copy shall be available onsite during ATS operation.

b. Certification proof that design done by a professional in accordance with Attachment F.

3. Dischargers who are proposing an alternate Risk Justification:
   a. Particle Size Analysis.

I. Exceptions to Standard PRD Requirements

Construction sites with an R value less than 5 as determined in the Risk Assessment are not required to submit a SWPPP.

J. Description of PRDs

1. Notice of Intent (NOI)

2. Site Map(s) Includes:
   a. The project's surrounding area (vicinity)
   b. Site layout
   c. Construction site boundaries
   d. Drainage areas
   e. Discharge locations
   f. Sampling locations
   g. Areas of soil disturbance (temporary or permanent)
   h. Active areas of soil disturbance (cut or fill)
   i. Locations of all runoff BMPs
   j. Locations of all erosion control BMPs
   k. Locations of all sediment control BMPs
   l. ATS location (if applicable)
   m. Locations of sensitive habitats, watercourses, or other features which are not to be disturbed
   n. Locations of all post-construction BMPs
   o. Locations of storage areas for waste, vehicles, service, loading/unloading of materials, access (entrance/exits) points to construction site, fueling, and water storage, water transfer for dust control and compaction practices

3. **SWPPPs**
   A site-specific SWPPP shall be developed by each discharger and shall be submitted with the PRDs.

4. **Risk Assessment**
   All dischargers shall use the Risk Assessment procedure as describe in the General Permit Appendix 1.

   a. The Standard Risk Assessment includes utilization of the following:
      i. Receiving water Risk Assessment interactive map

ii. EPA Rainfall Erosivity Factor Calculator Website
iii. Sediment Risk interactive map
iv. Sediment sensitive water bodies list

b. The Site-Specific Risk Assessment includes the completion of the hand calculated R value Risk Calculator

5. **Post-Construction Water Balance Calculator**
All dischargers subject to this requirement shall complete the Water Balance Calculator (in Appendix 2) in accordance with the instructions.

6. **ATS Design Document and Certification**
All dischargers using ATS must submit electronically their system design (as well as any supporting documentation) and proof that the system was designed by a qualified ATS design professional (See Attachment F).

To obtain coverage under the General Permit PRDs must be included and completed. If any of the required items are missing, the PRD submittal is considered incomplete and will be rejected. Upon receipt of a complete PRD submittal, the State Water Board will process the application package in the order received and assign a (WDID) number.

Questions?

If you have any questions on completing the PRDs please email stormwater@waterboards.ca.gov or call (866) 563-3107.

ATTACHMENT C
RISK LEVEL 1 REQUIREMENTS

A. Effluent Standards

[These requirements are the same as those in the General Permit order.]

1. Narrative – Risk Level 1 dischargers shall comply with the narrative effluent standards listed below:

   a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

   b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

2. Numeric – Risk Level 1 dischargers are not subject to a numeric effluent standard.

B. Good Site Management "Housekeeping"

1. Risk Level 1 dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, Risk Level 1 dischargers shall implement the following good housekeeping measures:

   a. Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

   b. Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

c. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

d. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

e. Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.

2. Risk Level 1 dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

a. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

b. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

c. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

d. Cover waste disposal containers at the end of every business day and during a rain event.

e. Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

f. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

g. Implement procedures that effectively address hazardous and non-hazardous spills.

h. Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

i. Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

ii. Appropriate spill response personnel are assigned and trained.

i. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

3. Risk Level 1 dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   a. Prevent oil, grease, or fuel to leak in to the ground, storm drains or surface waters.

   b. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.

   c. Clean leaks immediately and disposing of leaked materials properly.

4. Risk Level 1 dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   a. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   b. Contain fertilizers and other landscape materials when they are not actively being used.

   c. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.

   d. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   e. Stack erodible landscape material on pallets and covering or storing such materials when not being used or applied.

5. Risk Level 1 dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify

all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, Risk Level 1 dischargers shall do the following:

a. Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Ensure retention of sampling, visual observation, and inspection records.

e. Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

6. Risk Level 1 dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

C. Non-Storm Water Management

1. Risk Level 1 dischargers shall implement measures to control all non-storm water discharges during construction.

2. Risk Level 1 dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

3. Risk Level 1 dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

D. Erosion Control

1. Risk Level 1 dischargers shall implement effective wind erosion control.

2. Risk Level 1 dischargers shall provide effective soil cover for inactive[1] areas and all finished slopes, open space, utility backfill, and completed lots.

3. Risk Level 1 dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

E. Sediment Controls

1. Risk Level 1 dischargers shall establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

2. On sites where sediment basins are to be used, Risk Level 1 dischargers shall, at minimum, design sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

F. Run-on and Runoff Controls

Risk Level 1 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

G. Inspection, Maintenance and Repair

1. Risk Level 1 dischargers shall ensure that all inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

2. Risk Level 1 dischargers shall perform weekly inspections and observations, and at least once each 24-hour period during extended

[1] Inactive areas of construction are areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days.

storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

3. Upon identifying failures or other shortcomings, as directed by the QSP, Risk Level 1 dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

4. For each inspection required, Risk Level 1 dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

5. Risk Level 1 dischargers shall ensure that checklists shall remain onsite with the SWPPP and at a minimum, shall include:

    a. Inspection date and date the inspection report was written.

    b. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

    c. Site information, including stage of construction, activities completed, and approximate area of the site exposed.

    d. A description of any BMPs evaluated and any deficiencies noted.

    e. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

    f. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

    g. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

    h. Photographs taken during the inspection, if any.

    i. Inspector's name, title, and signature.

H. Rain Event Action Plan

Not required for Risk Level 1 dischargers.

I. Risk Level 1 Monitoring and Reporting Requirements

Table 1- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
1	X	X		X	X		

1. **Construction Site Monitoring Program Requirements**

   a. Pursuant to Water Code Sections 13383 and 13267, all dischargers subject to this General Permit shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Section. The CSMP shall include all monitoring procedures and instructions, location maps, forms, and checklists as required in this section. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect project revisions. The CSMP shall be a part of the Storm Water Pollution Prevention Plan (SWPPP), included as an appendix or separate SWPPP chapter.

   b. Existing dischargers registered under the State Water Board Order No. 99-08-DWQ shall make and implement necessary revisions to their Monitoring Programs to reflect the changes in this General Permit in a timely manner, but no later than July 1, 2010. Existing dischargers shall continue to implement their existing Monitoring Programs in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.

   c. When a change of ownership occurs for all or any portion of the construction site prior to completion or final stabilization, the new discharger shall comply with these requirements as of the date the ownership change occurs.

2. **Objectives**

   The CSMP shall be developed and implemented to address the following objectives:

   a. To demonstrate that the site is in compliance with the Discharge Prohibitions;

b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;

c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges; and

d. To determine whether BMPs included in the SWPPP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

3. **Risk Level 1 - Visual Monitoring (Inspection) Requirements for Qualifying Rain Events**

a. Risk Level 1 dischargers shall visually observe (inspect) storm water discharges at all discharge locations within two business days (48 hours) after each qualifying rain event.

b. Risk Level 1 dischargers shall visually observe (inspect) the discharge of stored or contained storm water that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Stored or contained storm water that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

c. Risk Level 1 dischargers shall conduct visual observations (inspections) during business hours only.

d. Risk Level 1 dischargers shall record the time, date and rain gauge reading of all qualifying rain events.

e. Within 2 business days (48 hours) prior to each qualifying rain event, Risk Level 1 dischargers shall visually observe (inspect):

i. All storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, the discharger shall implement appropriate corrective actions.

ii. All BMPs to identify whether they have been properly implemented in accordance with the SWPPP. If needed, the discharger shall implement appropriate corrective actions.

iii. Any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

f. For the visual observations (inspections) described in e.i and e.iii above, Risk Level 1 dischargers shall observe the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

g. Within two business days (48 hours) after each qualifying rain event, Risk Level 1 dischargers shall conduct post rain event visual observations (inspections) to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs and revise the SWPPP accordingly.

h. Risk Level 1 dischargers shall maintain on-site records of all visual observations (inspections), personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

4. **Risk Level 1 – Visual Observation Exemptions**

a. Risk Level 1 dischargers shall be prepared to conduct visual observation (inspections) until the minimum requirements of Section I.3 above are completed. Risk Level 1 dischargers are not required to conduct visual observation (inspections) under the following conditions:

i. During dangerous weather conditions such as flooding and electrical storms.

ii. Outside of scheduled site business hours.

b. If no required visual observations (inspections) are collected due to these exceptions, Risk Level 1 dischargers shall include an explanation in their SWPPP and in the Annual Report documenting why the visual observations (inspections) were not conducted.

5. **Risk Level 1 – Monitoring Methods**

Risk Level 1 dischargers shall include a description of the visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures in the CSMP.

6. **Risk Level 1 – Non-Storm Water Discharge Monitoring Requirements**

a. Visual Monitoring Requirements:

   i. Risk Level 1 dischargers shall visually observe (inspect) each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

   ii. Risk Level 1 dischargers shall conduct one visual observation (inspection) quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observation (inspections) are only required during daylight hours (sunrise to sunset).

   iii. Risk Level 1 dischargers shall ensure that visual observations (inspections) document the presence or evidence of any non-storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. Risk Level 1 dischargers shall maintain on-site records indicating the personnel performing the visual observation (inspections), the dates and approximate time each drainage area and non-storm water discharge was observed, and the response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges.

7. **Risk Level 1 – Non-Visible Pollutant Monitoring Requirements**

   a. Risk Level 1 dischargers shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water.

   b. Risk Level 1 dischargers shall ensure that water samples are large enough to characterize the site conditions.

   c. Risk Level 1 dischargers shall collect samples at all discharge locations that can be safely accessed.

   d. Risk Level 1 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

   e. Risk Level 1 dischargers shall analyze samples for all non-visible pollutant parameters (if applicable) - parameters indicating the

presence of pollutants identified in the pollutant source assessment required (Risk Level 1 dischargers shall modify their CSMPs to address these additional parameters in accordance with any updated SWPPP pollutant source assessment).

f. Risk Level 1 dischargers shall collect a sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) for comparison with the discharge sample.

g. Risk Level 1 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis.[2]

h. Risk Level 1 dischargers shall keep all field /or analytical data in the SWPPP document.

8. **Risk Level 1 – Particle Size Analysis for Project Risk Justification**

Risk Level 1 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

9. **Risk Level 1 – Records**

Risk Level 1 dischargers shall retain records of all storm water monitoring information and copies of all reports (including Annual Reports) for a period of at least three years. Risk Level 1 dischargers shall retain all records on-site while construction is ongoing. These records include:

a. The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.

b. The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.

c. The date and approximate time of analyses.

d. The individual(s) who performed the analyses.

[2] For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed.

e. A summary of all analytical results from the last three years, the method detection limits and reporting units, and the analytical techniques or methods used.

f. Rain gauge readings from site inspections.

g. Quality assurance/quality control records and results.

h. Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Sections I.3 and I.6 above).

i. Visual observation and sample collection exception records (see Section I.4 above).

j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

ATTACHMENT D
RISK LEVEL 2 REQUIREMENTS

A. Effluent Standards

[These requirements are the same as those in the General Permit order.]

1. Narrative – Risk Level 2 dischargers shall comply with the narrative effluent standards listed below:

   a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

   b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

2. Numeric – Risk level 2 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU.

B. Good Site Management "Housekeeping"

1. Risk Level 2 dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, Risk Level 2 dischargers shall implement the following good housekeeping measures:

   a. Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

   b. Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

c. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

d. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

e. Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.

2. Risk Level 2 dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

a. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

b. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

c. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

d. Cover waste disposal containers at the end of every business day and during a rain event.

e. Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

f. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

g. Implement procedures that effectively address hazardous and non-hazardous spills.

h. Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require:

i. Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly.

ii. Appropriate spill response personnel are assigned and trained.

i. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

3. Risk Level 2 dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   a. Prevent oil, grease, or fuel to leak in to the ground, storm drains or surface waters.

   b. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.

   c. Clean leaks immediately and disposing of leaked materials properly.

4. Risk Level 2 dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   a. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   b. Contain all fertilizers and other landscape materials when they are not actively being used.

   c. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.

   d. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   e. Stack erodible landscape material on pallets and covering or storing such materials when not being used or applied.

5. Risk Level 2 dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify

all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, Risk Level 2 dischargers shall do the following:

a. Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Ensure retention of sampling, visual observation, and inspection records.

e. Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

6. Risk Level 2 dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

7. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall document all housekeeping BMPs in the SWPPP and REAP(s) in accordance with the nature and phase of the construction project. Construction phases at traditional land development projects include Grading and Land Development Phase, Streets and Utilities, or Vertical Construction for traditional land development projects.

C. Non-Storm Water Management

1. Risk Level 2 dischargers shall implement measures to control all non-storm water discharges during construction.

2. Risk Level 2 dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

3. Risk Level 2 dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

D. Erosion Control

1. Risk Level 2 dischargers shall implement effective wind erosion control.

2. Risk Level 2 dischargers shall provide effective soil cover for inactive[1] areas and all finished slopes, open space, utility backfill, and completed lots.

3. Risk Level 2 dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

E. Sediment Controls

1. Risk Level 2 dischargers shall establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

2. On sites where sediment basins are to be used, Risk Level 2 dischargers shall, at minimum, design sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

3. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall implement appropriate erosion control BMPs (runoff control and soil stabilization) in conjunction with sediment control BMPs for areas under active[2] construction.

4. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall apply linear sediment controls along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths[3] in accordance with Table 1.

Table 1 - Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not

[1] Inactive areas of construction are areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days.
[2] Active areas of construction are areas undergoing land surface disturbance. This includes construction activity during the preliminary stage, mass grading stage, streets and utilities stage and the vertical construction stage.
[3] Sheet flow length is the length that shallow, low velocity flow travels across a site.

	to exceed
0-25% 20	feet
25-50% 15	feet
Over 50%	10 feet

5. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall ensure that construction activity traffic to and from the project is limited to entrances and exits that employ effective controls to prevent offsite tracking of sediment.

6. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall ensure that all storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits (e.g. tire washoff locations) are maintained and protected from activities that reduce their effectiveness.

7. **Additional Risk Level 2 Requirement:** Risk Level 2 dischargers shall inspect on a daily basis all immediate access roads daily. At a minimum daily (when necessary) and prior to any rain event, the discharger shall remove any sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping).

F. Run-on and Run-off Controls

Risk Level 2 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

G. Inspection, Maintenance and Repair

1. Risk Level 2 dischargers shall ensure that all inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee appropriately trained to do the task(s).

2. Risk Level 2 dischargers shall perform weekly inspections and observations, and at least once each 24-hour period during extended storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

3. Upon identifying failures or other shortcomings, as directed by the QSP, Risk Level 2 dischargers shall begin implementing repairs or

design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

4. For each inspection required, Risk Level 2 dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

5. Risk Level 2 dischargers shall ensure that checklists shall remain onsite with the SWPPP and at a minimum, shall include:

   a. Inspection date and date the inspection report was written.

   b. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

   c. Site information, including stage of construction, activities completed, and approximate area of the site exposed.

   d. A description of any BMPs evaluated and any deficiencies noted.

   e. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

   f. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

   g. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

   h. Photographs taken during the inspection, if any.

   i. Inspector's name, title, and signature.

H. Rain Event Action Plan

1. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP develop a Rain Event Action Plan (REAP) 48 hours prior to any likely precipitation event. A likely precipitation event is any weather pattern that is forecast to have a 50% or greater probability of producing precipitation in the project area. The discharger shall

ensure a QSP obtain a printed copy of precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast).

2. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP develop the REAPs for all phases of construction (i.e., Grading and Land Development, Streets and Utilities, Vertical Construction, Final Landscaping and Site Stabilization).

3. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP ensure that the REAP include, at a minimum, the following site information:

   a. Site Address
   b. Calculated Risk Level (2 or 3)
   c. Site Storm Water Manager Information including the name, company, and 24-hour emergency telephone number
   d. Erosion and Sediment Control Provider information including the name, company, and 24-hour emergency telephone number
   e. Storm Water Sampling Agent information including the name, company, and 24-hour emergency telephone number

4. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP include in the REAP, at a minimum, the following project phase information:

   a. Activities associated with each construction phase
   b. Trades active on the construction site during each construction phase
   c. Trade contractor information
   d. Suggested actions for each project phase

5. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP develop additional REAPs for project sites where construction activities are indefinitely halted or postponed (Inactive Construction). At a minimum, Inactive Construction REAPs must include:

   a. Site Address
   b. Calculated Risk Level (2 or 3)
   c. Site Storm Water Manager Information including the name, company, and 24-hour emergency telephone number
   d. Erosion and Sediment Control Provider information including the name, company, and 24-hour emergency telephone number
   e. Storm Water Sampling Agent information including the name, company, and 24-hour emergency telephone number

f. Trades active on site during Inactive Construction
g. Trade contractor information
h. Suggested actions for inactive construction sites

6. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP begin implementation and make the REAP available onsite no later than 24 hours prior to the likely precipitation event.

7. **Additional Risk Level 2 Requirement:** The discharger shall ensure a QSP maintain onsite a paper copy of each REAP onsite in compliance with the record retention requirements of the Special Provisions in this General Permit.

I. Risk Level 2 Monitoring and Reporting Requirements

Table 2- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
2	X	X	X	X	X	X	

1. Construction Site Monitoring Program Requirements

   a. Pursuant to Water Code Sections 13383 and 13267, all dischargers subject to this General Permit shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Section. The CSMP shall include all monitoring procedures and instructions, location maps, forms, and checklists as required in this section. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect project revisions. The CSMP shall be a part of the Storm Water Pollution Prevention Plan (SWPPP), included as an appendix or separate SWPPP chapter.

   b. Existing dischargers registered under the State Water Board Order No. 99-08-DWQ shall make and implement necessary revisions to their Monitoring Program to reflect the changes in this General Permit in a timely manner, but no later than July 1, 2010. Existing dischargers shall continue to implement their existing Monitoring Programs in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.

   c. When a change of ownership occurs for all or any portion of the construction site prior to completion or final stabilization, the new discharger shall comply with these requirements as of the date the ownership change occurs.

2. **Objectives**

   The CSMP shall be developed and implemented to address the following objectives:

a. To demonstrate that the site is in compliance with the Discharge Prohibitions and applicable Numeric Action Levels (NALs)/Numeric Effluent Limitations (NELs) of this General Permit.

b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives.

c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges.

d. To determine whether BMPs included in the SWPPP/Rain Event Action Plan (REAP) are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

3. **Risk Level 2 – Visual Monitoring (Inspection) Requirements for Qualifying Rain Events**

a. Risk Level 2 dischargers shall visually observe (inspect) storm water discharges at all discharge locations within two business days (48 hours) after each qualifying rain event.

b. Risk Level 2 dischargers shall visually observe (inspect) the discharge of stored or contained storm water that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Stored or contained storm water that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

c. Risk Level 2 dischargers shall conduct visual observations (inspections) during business hours only.

d. Risk Level 2 dischargers shall record the time, date and rain gauge reading of all qualifying rain events.

e. Within 2 business days (48 hours) prior to each qualifying rain event, Risk Level 2 dischargers shall visually observe (inspect):

i. all storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, the discharger shall implement appropriate corrective actions.

ii. all BMPs to identify whether they have been properly implemented in accordance with the SWPPP/REAP. If needed, the discharger shall implement appropriate corrective actions.

iii. any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

f. For the visual observations (inspections) described in c.i and c.iii above, Risk Level 2 dischargers shall observe the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

g. Within two business days (48 hours) after each qualifying rain event, Risk Level 2 dischargers shall conduct post rain event visual observations (inspections) to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs and revise the SWPPP accordingly.

h. Risk Level 2 dischargers shall maintain on-site records of all visual observations (inspections), personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

4. **Risk Level 2 – Water Quality Sampling and Analysis**

a. Risk Level 2 dischargers shall collect storm water grab samples from sampling locations, as defined in Section I.5. The storm water grab sample(s) obtained shall be representative of the flow and characteristics of the discharge.

b. At minimum, Risk Level 2 dischargers shall collect 3 samples per day of the qualifying event.

c. Risk Level 2 dischargers shall ensure that the grab samples collected of stored or contained storm water are from discharges subsequent to a qualifying rain event (producing precipitation of ½ inch or more at the time of discharge).

<u>Storm Water Effluent Monitoring Requirements</u>

d. Risk Level 2 dischargers shall analyze their effluent samples for:

i. pH and turbidity.

ii. Any additional parameters for which monitoring is required by the Regional Water Board.

5. **Risk Level 2 – Storm Water Discharge Water Quality Sampling Locations**

Effluent Sampling Locations

a. Risk Level 2 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire project disturbed area.

b. Risk Level 2 dischargers shall collect effluent samples at all discharge points where storm water is discharged off-site.

c. Risk Level 2 dischargers shall ensure that storm water discharge collected and observed represent[4] the effluent in each drainage area based on visual observation of the water and upstream conditions.

d. Risk Level 2 dischargers shall monitor and report site run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs or NELs.

e. Risk Level 2 dischargers who deploy an ATS on their site, or a portion on their site, shall collect ATS effluent samples and measurements from the discharge pipe or another location representative of the nature of the discharge.

f. Risk Level 2 dischargers shall select analytical test methods from the list provided in Table 3 below.

g. All storm water sample collection preservation and handling shall be conducted in accordance with Section I.7 “Storm Water Sample Collection and Handling Instructions” below.

6. **Risk Level 2 – Visual Observation and Sample Collection Exemptions**

a. Risk Level 2 dischargers shall be prepared to collect samples and conduct visual observation (inspections) until the minimum requirements of Sections I.3 and I.4 above are completed. Risk

[4] For example, if there has been concrete work recently in an area, or drywall scrap is exposed to the rain, a pH sample shall be taken of drainage from the relevant work area. Similarly, if sediment laden water is flowing through some parts of a silt fence, samples shall be taken of the sediment-laden water even if most water flowing through the fence is clear.

Level 2 dischargers are not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

i. During dangerous weather conditions such as flooding and electrical storms.

ii. Outside of scheduled site business hours.

b. If no required samples or visual observation (inspections) are collected due to these exceptions, Risk Level 2 dischargers shall include an explanation in their SWPPP and in the Annual Report documenting why the sampling or visual observation (inspections) were not conducted.

7. **Risk Level 2 – Storm Water Sample Collection and Handling Instructions**

a. Risk Level 2 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.

b. Risk Level 2 dischargers shall ensure that testing laboratories will receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory), and shall use only the sample containers provided by the laboratory to collect and store samples.

c. Risk Level 2 dischargers shall designate and train personnel to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP).[5]

8. **Risk Level 2 – Monitoring Methods**

a. Risk Level 2 dischargers shall include a description of the following items in the CSMP:

i. Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.

ii. Sampling locations, and sample collection and handling procedures. This shall include detailed procedures for sample

[5] Additional information regarding SWAMP's QAPrP and QAMP can be found at http://www.waterboards.ca.gov/water_issues/programs/swamp/.
QAPrP:http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf.
QAMP: http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml.

collection, storage, preservation, and shipping to the testing lab to assure that consistent quality control and quality assurance is maintained. Dischargers shall attach to the monitoring program an example Chain of Custody form used when handling and shipping samples.

iii. Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section I.4 above.

b. Risk Level 2 dischargers shall ensure that all sampling and sample preservation are in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) should be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. Risk Level 2 dischargers shall ensure that all laboratory analyses are conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of field analysis conducted by the discharger for turbidity and pH, all analyses should be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services. Risk Level 2 dischargers shall conduct their own field analysis of pH and may conduct their own field analysis of turbidity if the discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis.

9. **Risk Level 2 – Analytical Methods**

a. Risk Level 2 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.

b. **pH**: Risk Level 2 dischargers shall perform pH analysis on-site with a calibrated pH meter or a pH test kit. Risk Level 2 dischargers shall record pH monitoring results on paper and retain these records in accordance with Section I.14, below.

c. **Turbidity**: Risk Level 2 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1. The results will be recorded in the site log book in Nephelometric Turbidity Units (NTU).

10. **Risk Level 2 - Non-Storm Water Discharge Monitoring Requirements**

    a. Visual Monitoring Requirements:

        i. Risk Level 2 dischargers shall visually observe (inspect) each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

        ii. Risk Level 2 dischargers shall conduct one visual observation (inspection) quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observation (inspections) are only required during daylight hours (sunrise to sunset).

        iii. Risk Level 2 dischargers shall ensure that visual observations (inspections) document the presence or evidence of any non-storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. Risk Level 2 dischargers shall maintain on-site records indicating the personnel performing the visual observation (inspections), the dates and approximate time each drainage area and non-storm water discharge was observed, and the response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges.

    b. Effluent Sampling Locations:

        i. Risk Level 2 dischargers shall sample effluent at all discharge points where non-storm water and/or authorized non-storm water is discharged off-site.

        ii. Risk Level 2 dischargers shall send all non-storm water sample analyses to a laboratory certified for such analyses by the State Department of Health Services.

        iii. Risk Level 2 dischargers shall monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs.

11. **Risk Level 2 – Non-Visible Pollutant Monitoring Requirements**

a. Risk Level 2 dischargers shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water.

b. Risk Level 2 dischargers shall ensure that water samples are large enough to characterize the site conditions.

c. Risk Level 2 dischargers shall collect samples at all discharge locations that can be safely accessed.

d. Risk Level 2 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

e. Risk Level 2 dischargers shall analyze samples for all non-visible pollutant parameters (if applicable) - parameters indicating the presence of pollutants identified in the pollutant source assessment required (Risk Level 2 dischargers shall modify their CSMPs to address these additional parameters in accordance with any updated SWPPP pollutant source assessment).

f. Risk Level 2 dischargers shall collect a sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) for comparison with the discharge sample.

g. Risk Level 2 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis.[6]

h. Risk Level 2 dischargers shall keep all field /or analytical data in the SWPPP document.

12. **Risk Level 2 – Watershed Monitoring Option**

Risk Level 2 dischargers who are part of a qualified regional watershed-based monitoring program may be eligible for relief from the requirements in Sections I.5. The Regional Water Board may approve proposals to substitute an acceptable watershed-based monitoring program by determining if the watershed-based monitoring program

[6] For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed.

will provide substantially similar monitoring information in evaluating discharger compliance with the requirements of this General Permit.

13. **Risk Level 2 – Particle Size Analysis for Project Risk Justification**

    Risk Level 2 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

14. **Risk Level 2 – Records**

    Risk Level 2 dischargers shall retain records of all storm water monitoring information and copies of all reports (including Annual Reports) for a period of at least three years. Risk Level 2 dischargers shall retain all records on-site while construction is ongoing. These records include:

    a. The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.

    b. The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.

    c. The date and approximate time of analyses.

    d. The individual(s) who performed the analyses.

    e. A summary of all analytical results from the last three years, the method detection limits and reporting units, the analytical techniques or methods used, and the chain of custody forms.

    f. Rain gauge readings from site inspections;

    g. Quality assurance/quality control records and results.

    h. Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Sections I.3 and I.10 above).

    i. Visual observation and sample collection exception records (see Section I.6 above).

j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

15. **Risk Level 2 – NAL Exceedance Report**

a. In the event that any effluent sample exceeds an applicable NAL, Risk Level 2 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 10 days after the conclusion of the storm event. The Regional Boards have the authority to require the submittal of an NAL Exceedance Report.

b. Risk Level 2 dischargers shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity.

c. Risk Level 2 dischargers shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three years after the date the annual report is filed.

d. Risk Level 2 dischargers shall include in the NAL Exceedance Report:

i. The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as “less than the method detection limit”).

ii. The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.

iii. A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

Table 3 – Risk Level 2 Test Methods, Detection Limits, Reporting Units and Applicable NALs/NELs

Parameter	Test Method / Protocol	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Level
pH	Field test with calibrated portable instrument	Risk Level 2 Discharges	0.2 pH	units	lower NAL = 6.5 upper NAL = 8.5
Turbidity EPA	0180.1 and/or field test with calibrated portable instrument	Risk Level 2 Discharges other than ATS	1 NTU		250 NTU
		For ATS discharges	1 NTU		N/A

ATTACHMENT E
RISK LEVEL 3 REQUIREMENTS

A. Effluent Standards

[These requirements are the same as those in the General Permit order.]

1. Narrative – Risk Level 3 dischargers shall comply with the narrative effluent standards listed below:

   a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

   b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

2. Numeric –Risk Level 3 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU. In addition, Risk Level 3 dischargers are subject to a pH NEL of 6.0-9.0 and a turbidity NEL of 500 NTU.

B. Good Site Management "Housekeeping"

1. Risk Level 3 dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, Risk Level 3 dischargers shall implement the following good housekeeping measures:

   a. Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

   b. Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

c. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

d. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

e. Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.

2. Risk Level 3 dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

a. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

b. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

c. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

d. Cover waste disposal containers at the end of every business day and during a rain event.

e. Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

f. Contain and securely protecting stockpiled waste material from wind and rain at all times unless actively being used.

g. Implement procedures that effectively address hazardous and non-hazardous spills.

h. Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

i. Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

ii. Appropriate spill response personnel are assigned and trained.

i. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

3. Risk Level 3 dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   a. Prevent oil, grease, or fuel to leak in to the ground, storm drains or surface waters.

   b. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.

   c. Clean leaks immediately and disposing of leaked materials properly.

4. Risk Level 3 dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   a. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   b. Contain fertilizers and other landscape materials when they are not actively being used.

   c. Discontinuing the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.

   d. Applying erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   e. Stacking erodible landscape material on pallets and covering or storing such materials when not being used or applied.

5. Risk Level 3 dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify

all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, Risk Level 3 dischargers shall do the following:

a. Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Ensure retention of sampling, visual observation, and inspection records.

e. Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

6. Risk Level 3 dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

7. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall document all housekeeping BMPs in the SWPPP and REAP(s) in accordance with the nature and phase of the construction project. Construction phases at traditional land development projects include Grading and Land Development Phase, Streets and Utilities, or Vertical Construction for traditional land development projects.

C. Non-Storm Water Management

1. Risk Level 3 dischargers shall implement measures to control all non-storm water discharges during construction.

2. Risk Level 3 dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

3. Risk Level 3 dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

D. Erosion Control

1. Risk Level 3 dischargers shall implement effective wind erosion control.

2. Risk Level 3 dischargers shall provide effective soil cover for inactive[1] areas and all finished slopes, open space, utility backfill, and completed lots.

3. Dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

E. Sediment Controls

1. Risk Level 3 dischargers shall establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

2. On sites where sediment basins are to be used, Risk Level 3 dischargers shall, at minimum, design sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

3. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall implement appropriate erosion control BMPs (runoff control and soil stabilization) in conjunction with sediment control BMPs for areas under active[2] construction.

4. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall apply linear sediment controls along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths[3] in accordance with Table 1.

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[1] Inactive areas of construction are areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days.
[2] Active areas of construction are areas undergoing land surface disturbance. This includes construction activity during the preliminary stage, mass grading stage, streets and utilities stage and the vertical construction stage
[3] Sheet flow length is the length that shallow, low velocity flow travels across a site.

Table 1 - Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-25% 20	feet
25-50% 15	feet
Over 50%	10 feet

5. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall ensure that construction activity traffic to and from the project is limited to entrances and exits that employ effective controls to prevent offsite tracking of sediment.

6. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall ensure that all storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits (e.g. tire washoff locations) are maintained and protected from activities that reduce their effectiveness.

7. **Additional Risk Level 3 Requirement:** Risk Level 3 dischargers shall inspect on a daily basis all immediate access roads daily. At a minimum daily (when necessary) and prior to any rain event, the discharger shall remove any sediment or other construction activity-related materials that are deposited on the roads (by vacuuming or sweeping).

8. **Additional Risk Level 3 Requirement:** The Regional Water Board may require Risk Level 3 dischargers to implement additional site-specific sediment control requirements if the implementation of the other requirements in this section are not adequately protecting the receiving waters.

F. Run-on and Run-off Controls

Risk Level 3 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

G. Inspection, Maintenance and Repair

1. Risk Level 3 dischargers shall ensure that all inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee appropriately trained to do the task(s).

2. Risk Level 3 dischargers shall perform weekly inspections and observations, and at least once each 24-hour period during extended storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

3. Upon identifying failures or other shortcomings, as directed by the QSP, Risk Level 3 dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

4. For each inspection required, Risk Level 3 dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

5. Risk Level 3 dischargers shall ensure that checklists shall remain onsite with the SWPPP and at a minimum, shall include:

    a. Inspection date and date the inspection report was written.

    b. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

    c. Site information, including stage of construction, activities completed, and approximate area of the site exposed.

    d. A description of any BMPs evaluated and any deficiencies noted.

    e. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

    f. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

    g. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

    h. Photographs taken during the inspection, if any.

i. Inspector's name, title, and signature.

H. Rain Event Action Plan

1. **Additional Risk Level 3 Requirement:** The discharger shall ensure a QSP develop a Rain Event Action Plan (REAP) 48 hours prior to any likely precipitation event. A likely precipitation event is any weather pattern that is forecast to have a 50% or greater probability of producing precipitation in the project area. The QSP shall obtain a printed copy of precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast).

2. **Additional Risk Level 3 Requirement:** The discharger shall ensure a QSP develop the REAPs for all phases of construction (i.e., Grading and Land Development, Streets and Utilities, Vertical Construction, Final Landscaping and Site Stabilization).

3. **Additional Risk Level 3 Requirement:** The discharger shall ensure a QSP ensure that the REAP include, at a minimum, the following site information:

   a. Site Address.
   b. Calculated Risk Level (2 or 3).
   c. Site Storm Water Manager Information including the name, company, and 24-hour emergency telephone number.
   d. Erosion and Sediment Control Provider information including the name, company, and 24-hour emergency telephone number.
   e. Storm Water Sampling Agent information including the name, company, and 24-hour emergency telephone number.

4. **Additional Risk Level 3 Requirement:** The QSP shall include in the REAP, at a minimum, the following project phase information:

   a. Activities associated with each construction phase.
   b. Trades active on the construction site during each construction phase.
   c. Trade contractor information.
   d. Suggested actions for each project phase.

5. **Additional Risk Level 3 Requirement:** The QSP shall develop additional REAPs for project sites where construction activities are indefinitely halted or postponed (Inactive Construction). At a minimum, Inactive Construction REAPs must include:

a. Site Address.
b. Calculated Risk Level (2 or 3).
c. Site Storm Water Manager Information including the name, company, and 24-hour emergency telephone number.
d. Erosion and Sediment Control Provider information including the name, company, and 24-hour emergency telephone number.
e. Storm Water Sampling Agent information including the name, company, and 24-hour emergency telephone number.
f. Trades active on site during Inactive Construction.
g. Trade contractor information.
h. Suggested actions for inactive construction sites.

6. **Additional Risk Level 3 Requirement:** The discharger shall ensure a QSP begin implementation and make the REAP available onsite no later than 24 hours prior to the likely precipitation event.

7. **Additional Risk Level 3 Requirement:** The discharger shall ensure a QSP maintain onsite a paper copy of each REAP onsite in compliance with the record retention requirements of the Special Provisions in this General Permit.

I. Risk Level 3 Monitoring and Reporting Requirements

Table 2- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
3	X	X	X	X	X	X	X[4]

1. Construction Site Monitoring Program Requirements

   a. Pursuant to Water Code Sections 13383 and 13267, all dischargers subject to this General Permit shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Section. The CSMP shall include all monitoring procedures and instructions, location maps, forms, and checklists as required in this section. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect project revisions. The CSMP shall be a part of the Storm Water Pollution Prevention Plan (SWPPP), included as an appendix or separate SWPPP chapter.

   b. Existing dischargers registered under the State Water Board Order No. 99-08-DWQ shall make and implement necessary revisions to their Monitoring Program to reflect the changes in this General Permit in a timely manner, but no later than July 1, 2010. Existing dischargers shall continue to implement their existing Monitoring Program in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.

   c. When a change of ownership occurs for all or any portion of the construction site prior to completion or final stabilization, the new discharger shall comply with these requirements as of the date the ownership change occurs.

2. **Objectives**

   The CSMP shall be developed and implemented to address the following objectives:

[4] When NEL exceeded

a. To demonstrate that the site is in compliance with the Discharge Prohibitions and applicable Numeric Action Levels (NALs)/Numeric Effluent Limitations (NELs) of this General Permit.

b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives.

c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges.

d. To determine whether BMPs included in the SWPPP/Rain Event Action Plan (REAP) are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

3. **Risk Level 3 – Visual Monitoring (Inspection) Requirements for Qualifying Rain Events**

a. Risk Level 3 dischargers shall visually observe (inspect) storm water discharges at all discharge locations within two business days (48 hours) after each qualifying rain event.

b. Risk Level 3 dischargers shall visually observe (inspect) the discharge of stored or contained storm water that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Stored or contained storm water that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

c. Risk Level 3 dischargers shall conduct visual observations (inspections) during business hours only.

d. Risk Level 3 dischargers shall record the time, date and rain gauge reading of all qualifying rain events.

e. Within 2 business days (48 hours) prior to each qualifying rain event, Risk Level 3 dischargers shall visually observe (inspect):

i. all storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, the discharger shall implement appropriate corrective actions.

ii. all BMPs to identify whether they have been properly implemented in accordance with the SWPPP/REAP. If needed, the discharger shall implement appropriate corrective actions.

iii. any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

f. For the visual observations (inspections) described in c.i. and c.iii above, Risk Level 3 dischargers shall observe the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

g. Within two business days (48 hours) after each qualifying rain event, Risk Level 3 dischargers shall conduct post rain event visual observations (inspections) to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs and revise the SWPPP accordingly.

h. Risk Level 3 dischargers shall maintain on-site records of all visual observations (inspections), personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

4. **Risk Level 3 – Water Quality Sampling and Analysis**

a. Risk Level 3 dischargers shall collect storm water grab samples from sampling locations, as defined in Section I.5. The storm water grab sample(s) obtained shall be representative of the flow and characteristics of the discharge.

b. At minimum, Risk Level 3 dischargers shall collect 3 samples per day of the qualifying event.

c. Risk Level 3 dischargers shall ensure that the grab samples collected of stored or contained storm water are from discharges subsequent to a qualifying rain event (producing precipitation of ½ inch or more at the time of discharge).

<u>Storm Water Effluent Monitoring Requirements</u>

d. Risk Level 3 dischargers shall analyze their effluent samples for:

i. pH and turbidity.

ii. Any additional parameters for which monitoring is required by the Regional Water Board.

e. Risk 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 5 days after the conclusion of the storm event.

f. Risk Level 3 discharger sites that have violated the turbidity daily average NEL shall analyze subsequent effluent samples for all the parameters specified in Section I.4.e, above, and Suspended Sediment Concentration (SSC).

Receiving Water Monitoring Requirements

g. In the event that a Risk Level 3 discharger violates an NEL contained in this General Permit and has a direct discharge into receiving waters, the Risk Level 3 discharger shall subsequently sample receiving waters (RWs) for all parameter(s) required in Section I.4.e above for the duration of coverage under this General Permit.

h. Risk Level 3 dischargers disturbing 30 acres or more of the landscape and with direct discharges into receiving waters shall conduct or participate in benthic macroinvertebrate bioassessment of RWs prior to commencement of construction activity (See Appendix 3).

i. Risk Level 3 dischargers shall obtain RW samples in accordance with the Receiving Water sampling location section (Section I.5), below.

5. **Risk Level 3 – Storm Water Discharge Water Quality Sampling Locations**

Effluent Sampling Locations

a. Risk Level 3 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire project disturbed area.

b. Risk Level 3 dischargers shall collect effluent samples at all discharge points where storm water is discharged off-site.

c. Risk Level 3 dischargers shall ensure that storm water discharge collected and observed represent[5] the effluent in each drainage area based on visual observation of the water and upstream conditions.

d. Risk Level 3 dischargers shall monitor and report site run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs or NELs.

e. Risk Level 3 dischargers who deploy an ATS on their site, or a portion on their site, shall collect ATS effluent samples and measurements from the discharge pipe or another location representative of the nature of the discharge.

f. Risk Level 3 dischargers shall select analytical test methods from the list provided in Table 3 below.

g. All storm water sample collection preservation and handling shall be conducted in accordance with Section I.7 "Storm Water Sample Collection and Handling Instructions" below.

Receiving Water Sampling Locations

h. **Upstream/up-gradient RW samples**: Risk Level 3 dischargers shall obtain any required upstream/up-gradient receiving water samples from a representative and accessible location as close as possible and upstream from the effluent discharge point.

i. **Downstream/down-gradient RW samples**: Risk Level 3 dischargers shall obtain any required downstream/down-gradient receiving water samples from a representative and accessible location as close as possible and downstream from the effluent discharge point.

j. If two or more discharge locations discharge to the same receiving water, Risk Level 3 dischargers may sample the receiving water at a single upstream and downstream location.

[5] For example, if there has been concrete work recently in an area, or drywall scrap is exposed to the rain, a pH sample shall be taken of drainage from the relevant work area. Similarly, if sediment-laden water is flowing through some parts of a silt fence, samples shall be taken of the sediment laden water even if most water flowing through the fence is clear.

6. **Risk Level 3 – Visual Observation and Sample Collection Exemptions**

   a. Risk Level 3 dischargers shall be prepared to collect samples and conduct visual observation (inspections) until the minimum requirements of Sections I.3 and I.4 above are completed. Risk Level 3 dischargers are not required to physically collect samples or conduct visual observation (inspections) under the following conditions:

      i. During dangerous weather conditions such as flooding and electrical storms.

      ii. Outside of scheduled site business hours.

   b. If no required samples or visual observation (inspections) are collected due to these exceptions, Risk Level 3 dischargers shall include an explanation in their SWPPP and in the Annual Report documenting why the sampling or visual observation (inspections) were not conducted.

7. **Risk Level 3 – Storm Water Sample Collection and Handling Instructions**

   a. Risk Level 3 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.

   b. Risk Level 3 dischargers shall ensure that testing laboratories will receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory), and shall use only the sample containers provided by the laboratory to collect and store samples.

   c. Risk Level 3 dischargers shall designate and train personnel to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP).[6]

[6] Additional information regarding SWAMP's QAPrP and QAMP can be found at http://www.waterboards.ca.gov/water_issues/programs/swamp/.
QAPrP:http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf
QAMP: http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml

8. **Risk Level 3 – Monitoring Methods**

   a. Risk Level 3 dischargers shall include a description of the following items in the CSMP:

      i. Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.

      ii. Sampling locations, and sample collection and handling procedures. This shall include detailed procedures for sample collection, storage, preservation, and shipping to the testing lab to assure that consistent quality control and quality assurance is maintained. Dischargers shall attach to the monitoring program an example Chain of Custody form used when handling and shipping samples.

      iii. Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section I.4 above.

   b. Risk Level 3 dischargers shall ensure that all sampling and sample preservation are in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) should be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. Risk Level 3 dischargers shall ensure that all laboratory analyses are conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of field analysis conducted by the discharger for turbidity and pH, all analyses should be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services (SSC exception). Risk Level 3 dischargers shall conduct their own field analysis of pH and may conduct their own field analysis of turbidity if the discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis.

9. **Risk Level 3 – Analytical Methods**

   a. Risk Level 3 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.

b. **pH**: Risk Level 3 dischargers shall perform pH analysis on-site with a calibrated pH meter or a pH test kit. Risk Level 3 dischargers shall record pH monitoring results on paper and retain these records in accordance with Section I.14, below.

c. **Turbidity**: Risk Level 3 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1. The results will be recorded in the site log book in Nephelometric Turbidity Units (NTU).

d. **Suspended sediment concentration (SSC)**: Risk Level 3 dischargers shall perform SSC analysis using ASTM Method D3977-97.

e. **Bioassessment**: Risk Level 3 dischargers shall perform bioassessment sampling and analysis according to Appendix 3 of this General Permit.

10. **Risk Level 3 - Non-Storm Water Discharge Monitoring Requirements**

a. Visual Monitoring Requirements:

i. Risk Level 3 dischargers shall visually observe (inspect) each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

ii. Risk Level 3 dischargers shall conduct one visual observation (inspection) quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observation (inspections) are only required during daylight hours (sunrise to sunset).

iii. Risk Level 3 dischargers shall ensure that visual observations (inspections) document the presence or evidence of any non-storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. Risk Level 3 dischargers shall maintain on-site records indicating the personnel performing the visual observation (inspections), the dates and approximate time each drainage area and non-storm water discharge was observed, and the response taken to eliminate unauthorized non-storm water discharges and to

reduce or prevent pollutants from contacting non-storm water discharges.

b. Effluent Sampling Locations:

i. Risk Level 3 dischargers shall sample effluent at all discharge points where non-storm water and/or authorized non-storm water is discharged off-site.

ii. Risk Level 3 dischargers shall send all non-storm water sample analyses to a laboratory certified for such analyses by the State Department of Health Services.

iii. Risk Level 3 dischargers shall monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs or NELs.

11. **Risk Level 3 – Non-Visible Pollutant Monitoring Requirements**

a. Risk Level 3 dischargers shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water.

b. Risk Level 3 dischargers shall ensure that water samples are large enough to characterize the site conditions.

c. Risk Level 3 dischargers shall collect samples at all discharge locations that can be safely accessed.

d. Risk Level 3 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

e. Risk Level 3 dischargers shall analyze samples for all non-visible pollutant parameters (if applicable) - parameters indicating the presence of pollutants identified in the pollutant source assessment required (Risk Level 3 dischargers shall modify their CSMPs to address these additional parameters in accordance with any updated SWPPP pollutant source assessment).

f. Risk Level 3 dischargers shall collect a sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) for comparison with the discharge sample.

g. Risk Level 3 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis.[7]

h. Risk Level 3 dischargers shall keep all field /or analytical data in the SWPPP document.

12. **Risk Level 3 – Watershed Monitoring Option**

Risk Level 3 dischargers who are part of a qualified regional watershed-based monitoring program may be eligible for relief from the requirements in Sections I.5. The Regional Water Board may approve proposals to substitute an acceptable watershed-based monitoring program by determining if the watershed-based monitoring program will provide substantially similar monitoring information in evaluating discharger compliance with the requirements of this General Permit.

13. **Risk Level 3 – Particle Size Analysis for Project Risk Justification**

Risk Level 3 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

14. **Risk Level 3 – Records**

Risk Level 3 dischargers shall retain records of all storm water monitoring information and copies of all reports (including Annual Reports) for a period of at least three years. Risk Level 3 dischargers shall retain all records on-site while construction is ongoing. These records include:

a. The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.

b. The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.

c. The date and approximate time of analyses.

[7] For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed.

d. The individual(s) who performed the analyses.

e. A summary of all analytical results from the last three years, the method detection limits and reporting units, the analytical techniques or methods used, and the chain of custody forms.

f. Rain gauge readings from site inspections.

g. Quality assurance/quality control records and results.

h. Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Sections I.3 and I.10 above).

i. Visual observation and sample collection exception records (see Section I.6 above).

j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

15. **Risk Level 3 – NAL Exceedance Report**

a. In the event that any effluent sample exceeds an applicable NAL, Risk Level 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 10 days after the conclusion of the storm event. The Regional Boards have the authority to require the submittal of an NAL Exceedance Report.

b. Risk Level 3 dischargers shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity In this General Permit.

c. Risk Level 3 dischargers shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three years after the date the annual report is filed.

d. Risk Level 3 dischargers shall include in the NAL Exceedance Report:

i. The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as “less than the method detection limit”).

ii. The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.

iii. A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

16. **Risk Level 3 – NEL Violation Report**

a. Risk Level 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 5 days after the conclusion of the storm event.

b. In the event that a discharger has violated an applicable NEL, Risk Level 3 dischargers shall submit an NEL Violation Report to the State Water Board within 24 hours after the NEL exceedance has been identified.

c. Risk Level 3 dischargers shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity in this General Permit.

d. Risk Level 3 dischargers shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the annual report is filed.

e. Risk Level 3 dischargers shall include in the NEL Violation Report:

i. The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as “less than the method detection limit”);

ii. The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation; and

iii. A Description of the current onsite BMPs, and the proposed corrective actions taken to manage the NEL exceedance.

f. Compliance Storm Exemption - In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event, Risk level 3 discharger shall report the on-site rain gauge reading and nearby governmental rain gauge readings for verification.

17. **Risk Level 3 – Bioassessment**

a. Risk Level 3 dischargers with a total project-related ground disturbance exceeding 30 acres shall:

i. Conduct bioassessment monitoring, as described in Appendix 3.

ii. Include the collection and reporting of specified in stream biological data and physical habitat.

iii. Use the bioassessment sample collection and Quality Assurance & Quality Control (QA/QC) protocols developed by the State of California's Surface Water Ambient Monitoring Program (SWAMP).[8]

b. Risk Level 3 dischargers qualifying for bioassessment, where construction commences out of an index period for the site location shall:

i. Receive Regional Board approval for the sampling exception.

ii. Conduct bioassessment monitoring, as described in Appendix 3.

iii. Include the collection and reporting of specified instream biological data and physical habitat.

iv. Use the bioassessment sample collection and Quality Assurance & Quality Control (QA/QC) protocols developed by the State of California's Surface Water Ambient Monitoring Program (SWAMP).

OR

v. Make a check payable to: Cal State Chico Foundation (SWAMP Bank Account) or San Jose State Foundation (SWAMP Bank Account) and include the WDID# on the check for the amount calculated for the exempted project.

vi. Send a copy of the check to the Regional Water Board office for the site's region.

vii. Invest $**7,500.00 X The number of samples required** into the SWAMP program as compensation (upon regional board approval).

[8] http://www.waterboards.ca.gov/water_issues/programs/swamp/.

Table 3 – Risk Level 3 Test Methods, Detection Limits, Reporting Units and Applicable NALs/NELs

Parameter	Test Method / Protocol	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Level	Numeric Effluent Limitation
pH	Field test with calibrated portable instrument	Risk Level 3 Discharges	0.2 pH	units	lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0
Turbidity EPA	0180.1 and/or field test with calibrated portable instrument	Risk Level 3 Discharges other than ATS	1	NTU	250 NTU	500 NTU
		For ATS discharges	1 NTU		N/A	10 NTU for Daily Weighted Average & 20 NTU for Any Single Sample
SSC ASTM	Method D 3977-97[9]	Risk Level 3 (if NEL exceeded)	5 mg/L		N/A	N/A
Bioassessment	(STE) Level I of (SAFIT),[10] fixed-count of 600 org/sample	Risk Level 3 projects> 30 acres	N/A N/A		N/A	N/A

[9] ASTM, 1999, Standard Test Method for Determining Sediment Concentration in Water Samples: American Society of Testing and Materials, D 3977-97, Vol. 11.02, pp. 389-394.

[10] The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

ATTACHMENT F:
Active Treatment System (ATS) Requirements

Table 1 – Numeric Effluent Limitations, Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level	Numeric Effluent Limitation
Turbidity	EPA 0180.1 and/or field test with a calibrated portable instrument	For ATS discharges	1 NTU		N/A	10 NTU for Daily Flow-Weighted Average & 20 NTU for Any Single Sample

A. Dischargers choosing to implement an Active Treatment System (ATS) on their site shall comply with all of the requirements in this Attachment.

B. The discharger shall maintain a paper copy of each ATS specification onsite in compliance with the record retention requirements in the Special Provisions of this General Permit.

C. ATS Design, Operation and Submittals

1. The ATS shall be designed and approved by a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Professional in Storm Water Quality (CPSWQ); a California registered civil engineer; or any other California registered engineer.

2. The discharger shall ensure that the ATS is designed in a manner to preclude the accidental discharge of settled floc[1] during floc pumping or related operations.

3. The discharger shall design outlets to dissipate energy from concentrated flows.

4. The discharger shall install and operate an ATS by assigning a lead person (or project manager) who has either a minimum of five years construction storm

[1] Floc is defined as a clump of solids formed by the chemical action in ATS systems.

water experience or who is a licensed contractors specifically holding a California Class A Contractors license.[2]

5. The discharger shall prepare an ATS Plan that combines the site-specific data and treatment system information required to safely and efficiently operate an ATS. The ATS Plan shall be electronically submitted to the State Water Board at least 14 days prior to the planned operation of the ATS and a paper copy shall be available onsite during ATS operation. At a minimum, the ATS Plan shall include:

   a. ATS Operation and Maintenance Manual for All Equipment.

   b. ATS Monitoring, Sampling & Reporting Plan, including Quality Assurance/Quality Control (QA/QC).

   c. ATS Health and Safety Plan.

   d. ATS Spill Prevention Plan.

6. The ATS shall be designed to capture and treat (within a 72-hour period) a volume equivalent to the runoff from a 10-year, 24-hour storm event using a watershed runoff coefficient of 1.0.

D. Treatment – Chemical Coagulation/Flocculation

1. Jar tests shall be conducted using water samples selected to represent typical site conditions and in accordance with ASTM D2035-08 (2003).

2. The discharger shall conduct, at minimum, six site-specific jar tests (per polymer with one test serving as a control) for each project to determine the proper polymer and dosage levels for their ATS.

3. Single field jar tests may also be conducted during a project if conditions warrant, for example if construction activities disturb changing types of soils, which consequently cause change in storm water and runoff characteristics.

E. Residual Chemical and Toxicity Requirements

1. The discharger shall utilize a residual chemical test method that has a method detection limit (MDL) of 10% or less than the maximum allowable threshold

[2] Business and Professions Code Division 3, Chapter 9, Article 4, Class A Contractor: A general engineering contractor is a contractor whose principal contracting business is in connection with fixed works requiring specialized engineering knowledge and skill. [http://www.cslb.ca.gov/General-Information/library/licensing-classifications.asp].

concentration[3] (MATC) for the specific coagulant in use and for the most sensitive species of the chemical used.

2. The discharger shall utilize a residual chemical test method that produces a result within one hour of sampling.

3. The discharger shall have a California State certified laboratory validate the selected residual chemical test. Specifically the lab will review the test protocol, test parameters, and the detection limit of the coagulant. The discharger shall electronically submit this documentation as part of the ATS Plan.

4. If the discharger cannot utilize a residual chemical test method that meets the requirements above, the discharger shall operate the ATS in Batch Treatment[4] mode.

5. A discharger planning to operate in Batch Treatment mode shall perform toxicity testing in accordance with the following:

   a. The discharger shall initiate acute toxicity testing on effluent samples representing effluent from each batch prior to discharge[5]. All bioassays shall be sent to a laboratory certified by the Department of Health Services (DHS) Environmental Laboratory Accreditation Program (ELAP). The required field of testing number for Whole Effluent Toxicity (WET) testing is E113.[6]

   b. Acute toxicity tests shall be conducted with the following species and protocols. The methods to be used in the acute toxicity testing shall be those outlined for a 96-hour acute test in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, USEPA-841-R-02-012" for Fathead minnow, *Pimephales promelas* (fathead minnow). Acute toxicity for *Oncorhynchus mykiss* (Rainbow Trout) may be used as a substitute for testing fathead minnows.

   c. All toxicity tests shall meet quality assurance criteria and test acceptability criteria in the most recent versions of the EPA test method for WET testing.

   d. The discharger shall electronically report all acute toxicity testing.

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[3] The Maximum Allowable Threshold Concentration (MATC) is the allowable concentration of residual, or dissolved, coagulant/flocculant in effluent. The MATC shall be coagulant/flocculant-specific, and based on toxicity testing conducted by an independent, third-party laboratory. A typical MATC would be:
The MATC is equal to the geometric mean of the NOEC (No Observed Effect Concentration) and LOEC (Lowest Observed Effect Concentration) Acute and Chronic toxicity results for most sensitive species determined for the specific coagulant. The most sensitive species test shall be used to determine the MATC.
[4] Batch Treatment mode is defined as holding or recirculating the treated water in a holding basin or tank(s) until treatment is complete or the basin or storage tank(s) is full.
[5] This requirement only requires that the test be initiated prior to discharge.
[6] http://www.dhs.ca.gov/ps/ls/elap/pdf/FOT_Desc.pdf.

F. Filtration

1. The ATS shall include a filtration step between the coagulant treatment train and the effluent discharge. This is commonly provided by sand, bag, or cartridge filters, which are sized to capture suspended material that might pass through the clarifier tanks.

2. Differential pressure measurements shall be taken to monitor filter loading and confirm that the final filter stage is functioning properly.

G. Residuals Management

1. Sediment shall be removed from the storage or treatment cells as necessary to ensure that the cells maintain their required water storage (i.e., volume) capability.

2. Handling and disposal of all solids generated during ATS operations shall be done in accordance with all local, state, and federal laws and regulations.

H. ATS Instrumentation

1. The ATS shall be equipped with instrumentation that automatically measures and records effluent water quality data and flow rate.

2. The minimum data recorded shall be consistent with the Monitoring and Reporting requirements below, and shall include:

   a. Influent Turbidity

   b. Effluent Turbidity

   c. Influent pH

   d. Effluent pH

   e. Residual Chemical

   f. Effluent Flow rate

   g. Effluent Flow volume

3. Systems shall be equipped with a data recording system, such as data loggers or webserver-based systems, which records each measurement on a frequency no longer than once every 15 minutes.

4. Cumulative flow volume shall be recorded daily. The data recording system shall have the capacity to record a minimum of seven days continuous data.

5. Instrumentation systems shall be interfaced with system control to provide auto shutoff or recirculation in the event that effluent measurements exceed turbidity or pH.

6. The system shall also assure that upon system upset, power failure, or other catastrophic event, the ATS will default to a recirculation mode or safe shut down.

7. Instrumentation (flow meters, probes, valves, streaming current detectors, controlling computers, etc.) shall be installed and maintained per manufacturer's recommendations, which shall be included in the QA/QC plan.

8. The QA/QC plan shall also specify calibration procedures and frequencies, instrument method detection limit or sensitivity verification, laboratory duplicate procedures, and other pertinent procedures.

9. The instrumentation system shall include a method for controlling coagulant dose, to prevent potential overdosing. Available technologies include flow/turbidity proportional metering, periodic jar testing and metering pump adjustment, and ionic charge measurement controlling the metering pump.

I. ATS Effluent Discharge

1. ATS effluent shall comply with all provisions and prohibitions in this General Permit, specifically the NELs.

2. NELs for discharges from an ATS:

   a. Turbidity of all ATS discharges shall be less than 10 NTU for daily flow-weighted average of all samples and 20 NTU for any single sample.

   b. Residual Chemical shall be < 10% of MATC[7] for the most sensitive species of the chemical used.

3. If an analytical effluent sampling result is outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General

[7] The Maximum Allowable Threshold Concentration (MATC) is the allowable concentration of residual, or dissolved, coagulant/flocculant in effluent. The MATC shall be coagulant/flocculant-specific, and based on toxicity testing conducted by an independent, third-party laboratory. The MATC is equal to the geometric mean of the NOEC (No Observed Effect Concentration) and LOEC (Lowest Observed Effect Concentration) Acute and Chronic toxicity results for most sensitive species determined for the specific coagulant. The most sensitive species test shall be used to determine the MATC.

Permit and shall electronically file the results in violation within 24-hours of obtaining the results.

4. If ATS effluent is authorized to discharge into a sanitary sewer system, the discharger shall comply with any pre-treatment requirements applicable for that system. The discharger shall include any specific criteria required by the municipality in the ATS Plan.

5. Compliance Storm Event:

   Discharges of storm water from ATS shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for ATS discharges is the 10 year, 24 hour storm, as determined using these maps:

   http://www.wrcc.dri.edu/pcpnfreq/nca10y24.gif
   http://www.wrcc.dri.edu/pcpnfreq/sca10y24.gif

   This exemption is dependent on the submission of rain gauge data verifying the storm event is equal to or larger than the Compliance Storm.

J. Operation and Maintenance Plan

1. Each Project shall have a site-specific Operation and Maintenance (O&M) Manual covering the procedures required to install, operate and maintain the ATS.[8]

2. The O&M Manual shall only be used in conjunction with appropriate project-specific design specifications that describe the system configuration and operating parameters.

3. The O&M Manual shall have operating manuals for specific pumps, generators, control systems,and other equipment.

K. Sampling and Reporting Quality Assurance/ Quality Check (QA/QC) Plan

4. A project-specific QA/QC Plan shall be developed for each project. The QA/QC Plan shall include at a minimum:

   a. Calibration – Calibration methods and frequencies for all system and field instruments shall be specified.

   b. Method Detection Limits (MDLs) – The methods for determining MDLs shall be specified for each residual coagulant measurement method. Acceptable

[8] The manual is typically in a modular format covering generalized procedures for each component that is utilized in a particular system.

minimum MDLs for each method, specific to individual coagulants, shall be specified.

c. Laboratory Duplicates – Requirements for monthly laboratory duplicates for residual coagulant analysis shall be specified.

L. Personnel Training

1. Operators shall have training specific to using an ATS and liquid coagulants for storm water discharges in California.

2. The training shall be in the form of a formal class with a certificate and requirements for testing and certificate renewal.

3. Training shall include a minimum of eight hours classroom and 32 hours field training. The course shall cover the following topics:

   a. Coagulation Basics –Chemistry and physical processes

   b. ATS System Design and Operating Principles

   c. ATS Control Systems

   d. Coagulant Selection – Jar testing, dose determination, etc.

   e. Aquatic Safety/Toxicity of Coagulants, proper handling and safety

   f. Monitoring, Sampling, and Analysis

   g. Reporting and Recordkeeping

   h. Emergency Response

M. Active Treatment System (ATS) Monitoring Requirements

Any discharger who deploys an ATS on their site shall conduct the following:

1. Visual Monitoring

   a. A designated responsible person shall be on site daily at all times during treatment operations.

   b. Daily on-site visual monitoring of the system for proper performance shall be conducted and recorded in the project data log.

i. The log shall include the name and phone number of the person responsible for system operation and monitoring.

ii. The log shall include documentation of the responsible person's training.

2. Operational and Compliance Monitoring

a. Flow shall be continuously monitored and recorded at not greater than 15-minute intervals for total volume treated and discharged.

b. Influent and effluent pH must be continuously monitored and recorded at not greater than 15-minute intervals.

c. Influent and effluent turbidity (expressed in NTU) must be continuously monitored and recorded at not greater than 15-minute intervals.

d. The type and amount of chemical used for pH adjustment, if any, shall be monitored and recorded.

e. Dose rate of chemical used in the ATS system (expressed in mg/L) shall be monitored and reported 15-minutes after startup and every 8 hours of operation.

f. Laboratory duplicates – monthly laboratory duplicates for residual coagulant analysis must be performed and records shall be maintained onsite.

g. Effluent shall be monitored and recorded for residual chemical/additive levels.

h. If a residual chemical/additive test does not exist and the ATS is operating in a batch treatment mode of operation refer to the toxicity monitoring requirements below.

3. Toxicity Monitoring

A discharger operating in batch treatment mode shall perform toxicity testing in accordance with the following:

a. The discharger shall initiate acute toxicity testing on effluent samples representing effluent from each batch prior to discharge.[9] All bioassays shall be sent to a laboratory certified by the Department of Health Services (DHS) Environmental Laboratory Accreditation Program (ELAP). The required field of testing number for Whole Effluent Toxicity (WET) testing is E113.[10]

[9] This requirement only requires that the test be initiated prior to discharge.
[10] http://www.dhs.ca.gov/ps/ls/elap/pdf/FOT_Desc.pdf.

b. Acute toxicity tests shall be conducted with the following species and protocols. The methods to be used in the acute toxicity testing shall be those outlined for a 96-hour acute test in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, USEPA-841-R-02-012" for Fathead minnow, *Pimephales promelas or* Rainbow trout *Oncorhynchus mykiss* may be used as a substitute for fathead minnow.

c. All toxicity tests shall meet quality assurance criteria and test acceptability criteria in the most recent versions of the EPA test method for WET testing.[11]

4. Reporting and Recordkeeping

At a minimum, every 30 days a LRP representing the discharger shall access the State Water Boards Storm Water Mulit-Application and Report Tracking system (SMARTS) and electronically upload field data from the ATS. Records must be kept for three years after the project is completed .

5. Non-compliance Reporting

a. Any indications of toxicity or other violations of water quality objectives shall be reported to the appropriate regulatory agency as required by this General Permit.

b. Upon any measurements that exceed water quality standards, the system operator shall immediately notify his supervisor or other responsible parties, who shall notify the Regional Water Board.

c. If any monitoring data exceeds any applicable NEL in this General Permit, the discharger shall electronically submit a NEL Violation Report to the State Water Board within 24 hours after the NEL exceedance has been identified.

i. ATS dischargers shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity in this General Permit.

ii. ATS dischargers shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the annual report is filed.

iii. ATS dischargers shall include in the NEL Violation Report:

(1) The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit");

[11] http://www.epa.gov/waterscience/methods/wet/.

(2) The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation; and

(3) A description of the current onsite BMPs, and the proposed corrective actions taken to manage the NEL exceedance.

iv. Compliance Storm Exemption - In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event, ATS dischargers shall report the on-site rain gauge reading and nearby governmental rain gauge readings for verification.

Risk Determination Worksheet

Step 1 Determine Sediment Risk via one of the options listed:

1. GIS Map Method - EPA Rainfall Erosivity Calculator & GIS map
2. Individual Method - EPA Rainfall Erosivity Calculator & Individual Data

Step 2 Determine Receiving Water Risk via one of the options listed:

1. GIS map of Sediment Sensitive Watersheds provided (in development)
2. List of Sediment Sensitive Watersheds provided

Step 3 Determine Combined Risk Level

Sediment Risk Factor Worksheet	Entry

A) R Factor

Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.

http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm

R Factor Value	0

B) K Factor (weighted average, by area, for all site soils)

The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.

Site-specific K factor guidance

K Factor Value	0

C) LS Factor (weighted average, by area, for all slopes)

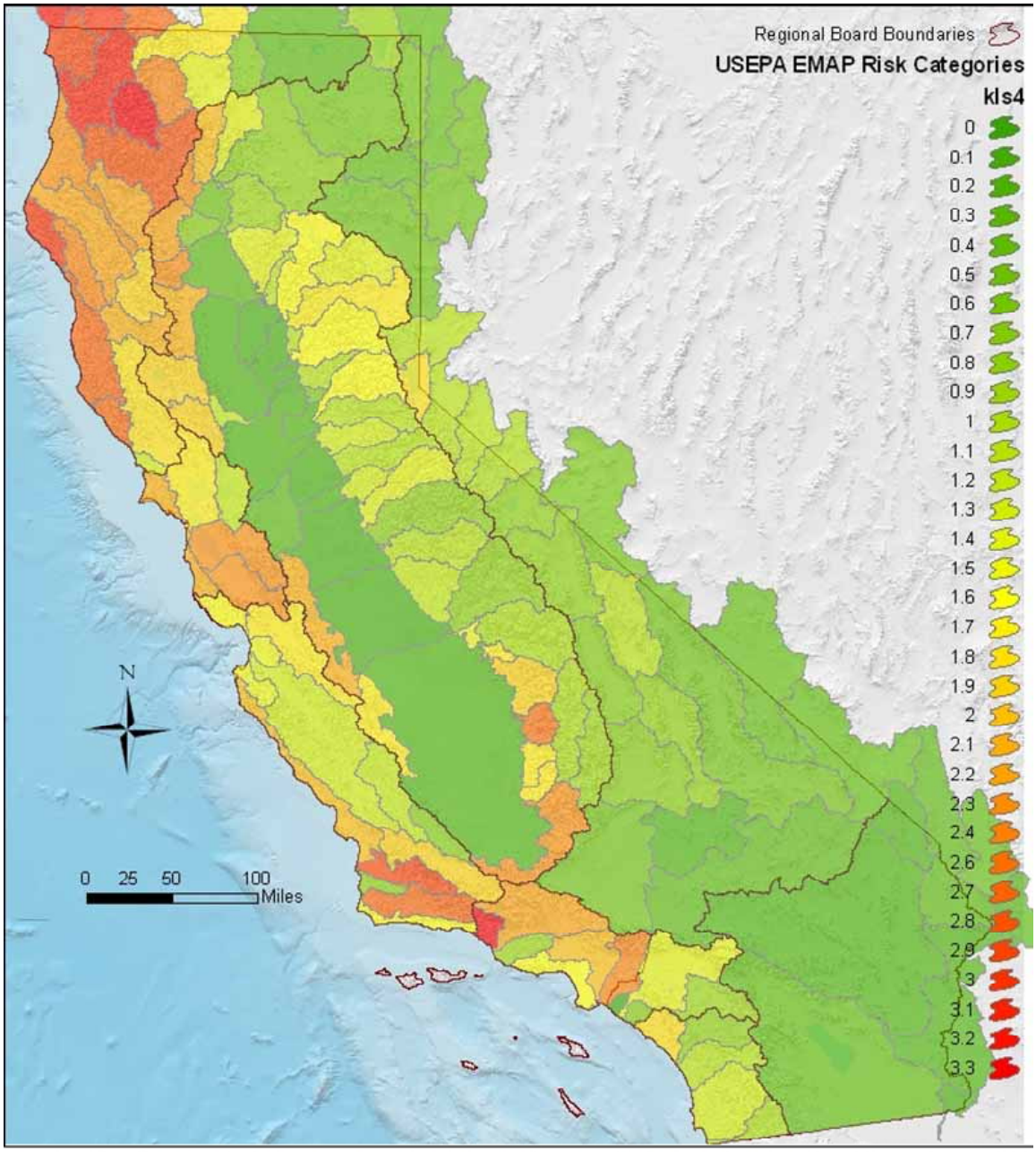
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.

LS Table

LS Factor Value	0

Watershed Erosion Estimate (=RxKxLS) in tons/acre	0
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

For the GIS Map Method, the R factor for the project is calculated using the online calculator at (see cell to right). The product of K and LS are shown on the figure below. To determine soil loss in tons per acre, multiply the R factor times the value for K times LS from the map.
http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm



Water Boards

State Water Resources Control Board, January 15, 2008

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

Combined Risk Level Matrix

Receiving Water Risk	Sediment Risk: Low	Sediment Risk: Medium	Sediment Risk: High
Low	Level 1	Level 2	
High	Level 2		Level 3

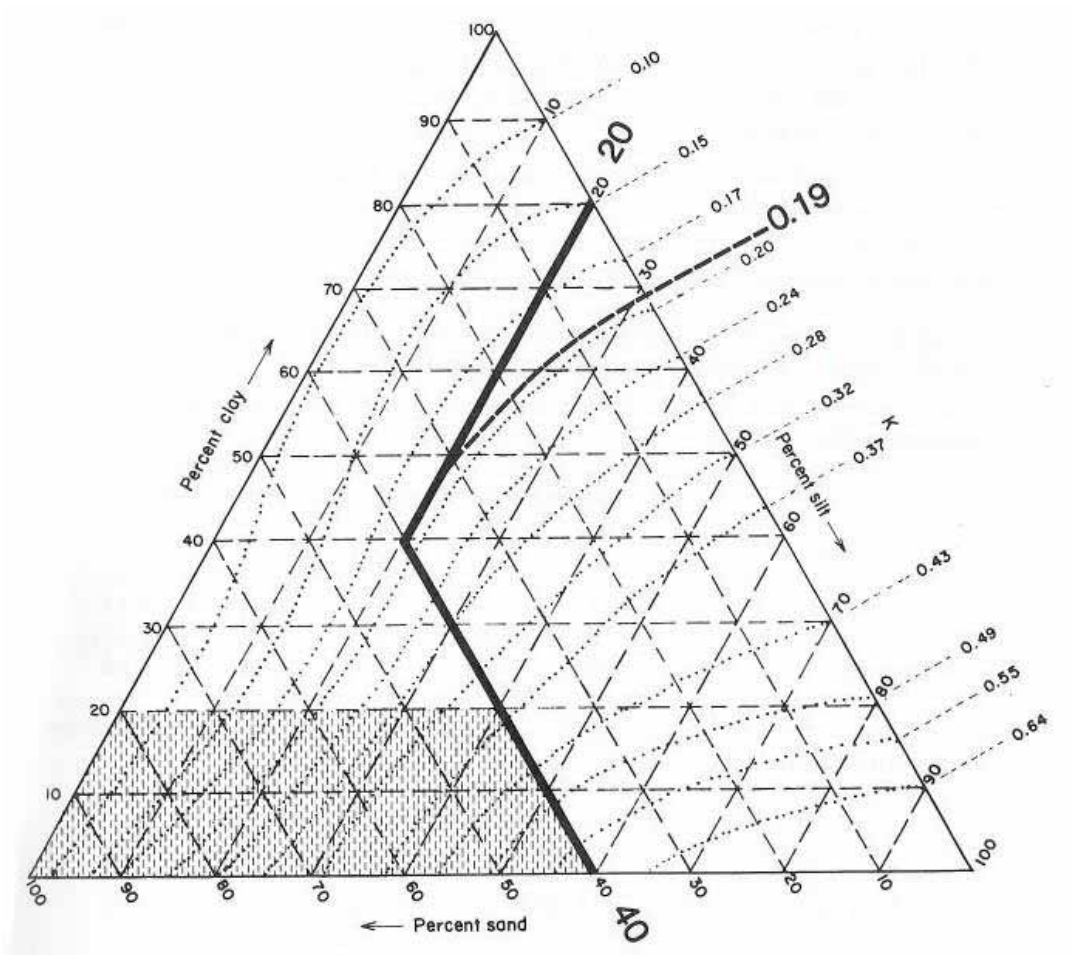
Project Sediment Risk: **Low**

Project RW Risk: **High**

Project Combined Risk: **Level 2**

Soil Erodibility Factor (K)

The K factor can be determined by using the nomograph method, which requires that a particle size analysis (ASTM D-422) be done to determine the percentages of sand, very fine sand, silt and clay. Use the figure below to determine appropriate K value.



Erickson triangular nomograph used to estimate soil erodibility (K) factor.
The figure above is the USDA nomograph used to determine the K factor for a soil, based on its texture (% silt plus very fine sand, % sand, % organic matter, soil structure, and permeability).
Nomograph from Erickson 1977 as referenced in Goldman et. al., 1986.

Sheet Flow Length (ft)	Average Watershed Slope (%) 0.2	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	
<3	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.35	0.36	0.38	0.39	0.41	
6	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.37	0.41	0.45	0.49	0.56	
9	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.38	0.45	0.51	0.56	0.67	
12	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.39	0.47	0.55	0.62	0.76	
15	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.40	0.49	0.58	0.67	0.84	
25	0.05	0.07	0.10	0.16	0.21	0.26	0.31	0.36	0.45	0.57	0.71	0.85	0.98	1.24	
50	0.05	0.08	0.13	0.21	0.30	0.38	0.46	0.54	0.70	0.91	1.15	1.40	1.64	2.10	
75	0.05	0.08	0.14	0.25	0.36	0.47	0.58	0.69	0.91	1.20	1.54	1.87	2.21	2.86	
100	0.05	0.09	0.15	0.28	0.41	0.55	0.68	0.82	1.10	1.46	1.88	2.31	2.73	3.57	
150	0.05	0.09	0.17	0.33	0.50	0.68	0.86	1.05	1.43	1.92	2.51	3.09	3.68	4.85	
200	0.06	0.10	0.18	0.37	0.57	0.79	1.02	1.25	1.72	2.34	3.07	3.81	4.56	6.04	
250	0.06	0.10	0.19	0.40	0.64	0.89	1.16	1.43	1.99	2.72	3.60	4.48	5.37	7.16	
300	0.06	0.10	0.20	0.43	0.69	0.98	1.28	1.60	2.24	3.09	4.09	5.11	6.15	8.23	1
400	0.06	0.11	0.22	0.48	0.80	1.14	1.51	1.90	2.70	3.75	5.01	6.30	7.60	10.24	1
600	0.06	0.12	0.24	0.56	0.96	1.42	1.91	2.43	3.52	4.95	6.67	8.45	10.26	13.94	1
800	0.06	0.12	0.26	0.63	1.10	1.65	2.25	2.89	4.24	6.03	8.17	10.40	12.69	17.35	2
1000	0.06	0.13	0.27	0.69	1.23	1.86	2.55	3.30	4.91	7.02	9.57	12.23	14.96	20.57	2

LS Factors for Construction Sites. *Table from Renard et. al., 1997.*

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	1510	Range Grazing-Riparian	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAE115301	1	North Coast	E	Estuaries	Bodega HU, Estero Americano HA, estuary	11530012	199	A	Acres	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Water Quality Attainment strategy is attempting to increase voluntary measures for attainment of standards & objectives, as was done in the Estero de San Antonio/Stemple Creek T Water Quality Attainment Strategy, adopted by NCRWQCB in Dec, 97.
CAR111111	1	North Coast	R	Rivers/Streams	Eel River HU, Lower Eel River HA, Eel River Delta	11110000	426	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2019	
CAR111111	1	North Coast	R	Rivers/Streams	Eel River HU, Lower Eel River HA, Eel River Delta	11110000	426	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR111111	1	North Coast	R	Rivers/Streams	Eel River HU, Lower Eel River HA, Eel River Delta	11110000	426	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	1510	Range Grazing-Riparian	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	1520	Range Grazing-Upland	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	2100	Harvesting, Restoration, Residue Management	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	2300	Logging Road Construction/Maintenance	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2004	
CAR111411	1	North Coast	R	Rivers/Streams	Eel River HU, Middle Main HA	11140000	674	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2004	
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	1935	Agriculture-grazing	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	2100	Harvesting, Restoration, Residue Management	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	2300	Logging Road Construction/Maintenance	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	2400	Silvicultural Point Sources	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR111621	1	North Coast	R	Rivers/Streams	Eel River HU, Upper Main HA (Includes Tomki Creek)	11160000	1141	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	USEPA will develop a TMDL for Eel River, Upper Main Fork.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	2100	Harvesting, Restoration, Residue Management	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	2300	Logging Road Construction/Maintenance	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Elk River	11000000	88	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	The Eureka Plain HU, Elk River, includes the following Calwater Planning Watersheds (PWS): 110.00021, 110.00030, 110.00032, and 110.00042. Sedimentation, threat sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	2100	Harvesting, Restoration, Residue Management	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR110001	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	2300	Logging Road Construction/Maintenance	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR11000	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR11000	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR11000	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR11000	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR11000	1	North Coast	R	Rivers/Streams	Eureka Plain HU, Freshwater Creek	11000000	84	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	The Eureka Plain HU, Freshwater Creek, includes the following Calwater Planning Watersheds (PWS): 110.00011, 110.00012, 110.00014, 110.00040, and 110.00050. Sedimentation, threat of sedimentation, impaired irrigation water quality, impaired domestic supply water quality, impaired spawning habitat, increased rate and depth of flooding due to sediment, property damage. NCRWQCB and California Department of forestry staff are involved in ongoing efforts to attain adherance to Forest Practice Rules.
CAR10511	1	North Coast	R	Rivers/Streams	Klamath River HU, Lower HA, Klamath Glen HSA	10511000	609	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	If this listing is determined to be on tribal lands, USEPA should place this water body and pollutant on the section 303d list for the tribal lands. It is not the State Water Board's inten this listing affect other actions related to decommissioning and removal of dams on the Klamath River
CAR10910	1	North Coast	R	Rivers/Streams	Mad River HU, Mad River	10900000	654	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	USEPA will develop TMDL for the Mad River. Sediment TMDLS will be developed for the area tributary to and including: (1) the Mad River (North Fork), (2) the mad River (Upper), (3) the Mad River (Middle).
CAR10910	1	North Coast	R	Rivers/Streams	Mad River HU, Mad River	10900000	654	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	USEPA will develop TMDL for the Mad River. Sediment TMDLS will be developed for the area tributary to and including: (1) the Mad River (North Fork), (2) the mad River (Upper), (3) the Mad River (Middle).
CAR10910	1	North Coast	R	Rivers/Streams	Mad River HU, Mad River	10900000	654	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	USEPA will develop TMDL for the Mad River. Sediment TMDLS will be developed for the area tributary to and including: (1) the Mad River (North Fork), (2) the mad River (Upper), (3) the Mad River (Middle).
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	7300	Dam Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	7400	Flow Regulation/Modification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11412	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Austin Creek HSA	11412000	81	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment.
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	1300	Specialty Crop Production	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	1935	Agriculture-grazing	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7300	Dam Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7350	Upstream Impoundment	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7400	Flow Regulation/Modification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11411	1	North Coast	R	Rivers/Streams	Russian River HU, Lower Russian River HA, Guerneville HSA	11411000	195	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11426	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Big Sulphur Creek HSA	11426000	85	M	Miles	1100	Sedimentation/Siltation	3210	Geothermal Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11426	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Big Sulphur Creek HSA	11426000	85	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11426	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Big Sulphur Creek HSA	11426000	85	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1100	Nonirrigated Crop Production	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1300	Specialty Crop Production	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1510	Range Grazing-Riparian	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1520	Range Grazing-Upland	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	1935	Agriculture-grazing	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	3210	Geothermal Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	4501	Surface Runoff	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7500	Bridge Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11425	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Geyserville HSA	11425000	242	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment TMDL.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1300	Specialty Crop Production	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1510	Range Grazing-Riparian	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1600	Intensive Animal Feeding Operations	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	1935	Agriculture-grazing	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	2100	Harvesting, Restoration, Residue Management	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	4300	Other Urban Runoff	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	4501	Surface Runoff	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	4300	Other Urban Runoff	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	4500	Highway/Road/Bridge Runoff	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	8050	Erosion From Derelict Land	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	8300	Highway Maintenance and Runoff	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR11421	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa	11421000	96	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Entire Russian River watershed (including Laguna de Santa Rosa) is listed for sedimentation.
CAR30411	3	Central Coast	R	Rivers/Streams	San Vicente Creek	30411023	9.11953	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (below city of Lompoc to Ocean)	31410040	3.8	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (below city of Lompoc to Ocean)	31410040	3.8	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (below city of Lompoc to Ocean)	31410040	3.8	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (Cachuma Lake to below city o Lompoc)	31440050	43	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (Cachuma Lake to below city o Lompoc)	31440050	43	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2019	
CAR31410	3	Central Coast	R	Rivers/Streams	Santa Ynez River (Cachuma Lake to below city o Lompoc)	31440050	43	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	
CAR31300	3	Central Coast	R	Rivers/Streams	Shuman Canyon Creek	31300041	8.5496	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR30413	3	Central Coast	R	Rivers/Streams	Valencia Creek	30413023	6.19	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2008	
CAR30413	3	Central Coast	R	Rivers/Streams	Valencia Creek	30413023	6.19	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2008	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Zayante Creek	30412040	9.20875	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR11423	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Mark West Creek HSA	11423000	99	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1100	Nonirrigated Crop Production	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1300	Specialty Crop Production	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1400	Pasture Grazing-Riparian and/or Upland	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1510	Range Grazing-Riparian	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1520	Range Grazing-Upland	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	1940	Dairies	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	4100	Urban Runoff--Non-industrial Permitted	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	4300	Other Urban Runoff	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	4501	Surface Runoff	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.

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CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7500	Bridge Construction	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11422	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Santa Rosa Creek	11422000	87	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Entire Russian River watershed (including Santa Rosa Creek) is listed for sedimentation.
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	2300	Logging Road Construction/Maintenance	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7300	Dam Construction	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7350	Upstream Impoundment	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7400	Flow Regulation/Modification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11424	1	North Coast	R	Rivers/Streams	Russian River HU, Middle Russian River HA, Warm Springs HSA	11424000	255	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Sediment impacts in Russian River tributaries prompted listing entire Russian River watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7100	Channelization	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7300	Dam Construction	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7400	Flow Regulation/Modification	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7500	Bridge Construction	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR11432	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Coyote Valley HSA	11432000	171	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11433	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Forsythe Creek HSA	11433000	122	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11433	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Forsythe Creek HSA	11433000	122	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	8300	Highway Maintenance and Runoff	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAR11431	1	North Coast	R	Rivers/Streams	Russian River HU, Upper Russian River HA, Ukiah HSA	11431000	460	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2019	Russian River Watershed tributary sediment impairments led to listing of entire watershed for sediment .
CAB20114	2	San Francisco Bay	B	Bays and Harbors	Tomales Bay	20114033	8545.46	A	Acres	1100	Sedimentation/Siltation	1000	Agriculture	2008	TMDL will be developed as part of ongoing watershed management effort. Tributary streams, Lagunitas Creek and Walker Creek, must be managed first. Additional monitoring assessment needed.
CAB20114	2	San Francisco Bay	B	Bays and Harbors	Tomales Bay	20114033	8545.46	A	Acres	1100	Sedimentation/Siltation	7350	Upstream Impoundment	2008	TMDL will be developed as part of ongoing watershed management effort. Tributary streams, Lagunitas Creek and Walker Creek, must be managed first. Additional monitoring assessment needed.
CAR20240	2	San Francisco Bay	R	Rivers/Streams	Butano Creek	20240031	3.62774	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Impairment to steelhead habita
CAR20113	2	San Francisco Bay	R	Rivers/Streams	Lagunitas Creek	20113020	16.75	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2009	Tributary to Tomales Bay. TMDLs will be developed as part of evolving watershed management effort. Additional monitoring and assessment nee
CAR20113	2	San Francisco Bay	R	Rivers/Streams	Lagunitas Creek	20113020	16.75	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2009	Tributary to Tomales Bay. TMDLs will be developed as part of evolving watershed management effort. Additional monitoring and assessment nee
CAR20650	2	San Francisco Bay	R	Rivers/Streams	Napa River	20650010	65.33	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2006	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20650	2	San Francisco Bay	R	Rivers/Streams	Napa River	20650010	65.33	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2006	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20650	2	San Francisco Bay	R	Rivers/Streams	Napa River	20650010	65.33	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2006	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20650	2	San Francisco Bay	R	Rivers/Streams	Napa River	20650010	65.33	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2006	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20240	2	San Francisco Bay	R	Rivers/Streams	Pescadero Creek	20240013	26.03	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	If California Department of Fish and Game and the National Marine Fisheries Service find that for this water body fish populations are not impacted, the State Water Board supp removing this water body and pollutant from the list.
CAR20630	2	San Francisco Bay	R	Rivers/Streams	Petaluma River	20630020	21.566	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR20630	2	San Francisco Bay	R	Rivers/Streams	Petaluma River	20630020	21.566	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	
CAR20630	2	San Francisco Bay	R	Rivers/Streams	Petaluma River	20630020	21.566	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2019	
CAR20550	2	San Francisco Bay	R	Rivers/Streams	San Francisquito Creek	20550040	12.05	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2008	Impairment to steelhead habita
CAR20230	2	San Francisco Bay	R	Rivers/Streams	San Gregorio Creek	20230014	11.14	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	Impairment to steelhead habita
CAR20640	2	San Francisco Bay	R	Rivers/Streams	Sonoma Creek	20640050	30.23	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2008	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20640	2	San Francisco Bay	R	Rivers/Streams	Sonoma Creek	20640050	30.23	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2008	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20640	2	San Francisco Bay	R	Rivers/Streams	Sonoma Creek	20640050	30.23	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2008	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20640	2	San Francisco Bay	R	Rivers/Streams	Sonoma Creek	20640050	30.23	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2008	TMDL will be developed as part of ongoing watershed management effort. Additional monitoring and assessment nee
CAR20112	2	San Francisco Bay	R	Rivers/Streams	Walker Creek	20112013	15.8352	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2009	Tributary to Tomales Bay. TMDLs will be developed as part of evolving watershed management effort. Additional monitoring and assessment nee
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	7000	Hydromodification	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	7200	Dredging	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAB30600	3	Central Coast	B	Bays and Harbors	Moss Landing Harbor	30600014	79.2726	A	Acres	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAE30600	3	Central Coast	E	Estuaries	Elkhorn Slough	30600014	2033.73	A	Acres	1100	Sedimentation/Siltation	1000	Agriculture	2015	
CAE30600	3	Central Coast	E	Estuaries	Elkhorn Slough	30600014	2033.73	A	Acres	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2015	
CAE30600	3	Central Coast	E	Estuaries	Elkhorn Slough	30600014	2033.73	A	Acres	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2015	
CAE30600	3	Central Coast	E	Estuaries	Elkhorn Slough	30600014	2033.73	A	Acres	1100	Sedimentation/Siltation	7810	Channel Erosion	2015	
CAE30600	3	Central Coast	E	Estuaries	Elkhorn Slough	30600014	2033.73	A	Acres	1100	Sedimentation/Siltation	9100	Nonpoint Source	2015	
CAE30600	3	Central Coast	E	Estuaries	Moro Cojo Slough	30913011	62.4949	A	Acres	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAE30600	3	Central Coast	E	Estuaries	Moro Cojo Slough	30913011	62.4949	A	Acres	1100	Sedimentation/Siltation	1200	Irrigated Crop Production	2019	
CAE30600	3	Central Coast	E	Estuaries	Moro Cojo Slough	30913011	62.4949	A	Acres	1100	Sedimentation/Siltation	1915	Agriculture-storm runoff	2019	
CAE30600	3	Central Coast	E	Estuaries	Moro Cojo Slough	30913011	62.4949	A	Acres	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	
CAE30600	3	Central Coast	E	Estuaries	Moro Cojo Slough	30913011	62.4949	A	Acres	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAE30413	3	Central Coast	E	Estuaries	Soquel Lagoon	30413014	1.15873	A	Acres	1100	Sedimentation/Siltation	3000	Construction/Land Development	2011	
CAR30413	3	Central Coast	R	Rivers/Streams	Aptos Creek	30413023	8.40589	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2008	
CAR30413	3	Central Coast	R	Rivers/Streams	Aptos Creek	30413023	8.40589	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2008	
CAR30412	3	Central Coast	R	Rivers/Streams	Bean Creek	30412041	8.90707	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bean Creek	30412041	8.90707	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bean Creek	30412041	8.90707	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bean Creek	30412041	8.90707	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bean Creek	30412041	8.90707	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bear Creek(Santa Cruz County	30412030	6.31531	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bear Creek(Santa Cruz County	30412030	6.31531	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bear Creek(Santa Cruz County	30412030	6.31531	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bear Creek(Santa Cruz County	30412030	6.31531	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Bear Creek(Santa Cruz County	30412030	6.31531	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	1300	Specialty Crop Production	2019	
CAR30412	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR304123	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Boulder Creek	30412020	7.55958	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Branciforte Creek	30412051	5.78	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Branciforte Creek	30412051	5.78	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Branciforte Creek	30412051	5.78	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR313003	3	Central Coast	R	Rivers/Streams	Casmalia Canyon Creek	31300040	4.96262	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Fall Creek	30412022	5.07242	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Fall Creek	30412022	5.07242	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Fall Creek	30412022	5.07242	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Fall Creek	30412022	5.07242	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Kings Creek	30412011	4.36837	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Kings Creek	30412011	4.36837	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Kings Creek	30412011	4.36837	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Kings Creek	30412011	4.36837	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Kings Creek	30412011	4.36837	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Love Creek	30412021	3.78816	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Mountain Charlie Gulch	30412040	3.92844	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Mountain Charlie Gulch	30412040	3.92844	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Mountain Charlie Gulch	30412040	3.92844	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Mountain Charlie Gulch	30412040	3.92844	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	3110	Road Construction	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	3215	Disturbed Sites (Land Develop.)	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR304123	3	Central Coast	R	Rivers/Streams	Newell Creek (Upper	30412031	3.50199	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR404224	4	Los Angeles	R	Rivers/Streams	Las Virgenes Creek	40422010	11.62	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR404214	4	Los Angeles	R	Rivers/Streams	Malibu Creek	40421000	10.85	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR404244	4	Los Angeles	R	Rivers/Streams	Medea Creek Reach 1 (Lake to Confl. with Lindero)	40424000	2.57	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR403124	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 2 (estuary to Potrero Rd was Calleguas Creek Reaches 1 and 2 on 1998 303d list)	40312000	4.31213	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403124	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 2 (estuary to Potrero Rd was Calleguas Creek Reaches 1 and 2 on 1998 303d list)	40312000	4.31213	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403124	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 3 (Potrero Road upstream to confluence with Conejo Creek on 1998 303d list)	40312000	3.46697	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403124	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 3 (Potrero Road upstream to confluence with Conejo Creek on 1998 303d list)	40312000	3.46697	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403114	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Avenue on 1998 303d list)	40311000	7.18751	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403114	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 4 (was Revolon Slough Main Branch: Mugu Lagoon to Central Avenue on 1998 303d list)	40311000	7.18751	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403614	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 5 (was Beardsley Channe on 1998 303d list)	40311000	4.34088	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403614	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 5 (was Beardsley Channe on 1998 303d list)	40311000	4.34088	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403624	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2 on 1998 303d list)	40362000	15.2966	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403624	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 6 (was Arroyo Las Posas Reaches 1 and 2 on 1998 303d list)	40362000	15.2966	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403624	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2 on 1998 303d list)	40367000	13.9129	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403624	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 7 (was Arroyo Simi Reaches 1 and 2 on 1998 303d list)	40367000	13.9129	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403674	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 8 (was Tapo Canyon Reach 1)	40366000	7.18869	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403644	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 11 (Arroyo Santa Rosa was part of Conejo Creek Reach 3 on 1998 303d list)	40365000	8.68888	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR403644	4	Los Angeles	R	Rivers/Streams	Calleguas Creek Reach 11 (Arroyo Santa Rosa was part of Conejo Creek Reach 3 on 1998 303d list)	40365000	8.68888	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2005	For 2006, sedimentation/siltation was moved by USEPA from the being addressed list back to the 303(d) list pending completion and USEPA approval of a TMDL.
CAR404234	4	Los Angeles	R	Rivers/Streams	Medea Creek Reach 2 (Abv Confl. with Linderc	40423000	5.41	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR404244	4	Los Angeles	R	Rivers/Streams	Triunfo Canyon Creek Reach 1	40424000	2.51	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR404244	4	Los Angeles	R	Rivers/Streams	Triunfo Canyon Creek Reach 2	40424000	3.32	M	Miles	1100	Sedimentation/Siltation	9000	Source Unknown	2019	
CAR526415	5	Central Valley	R	Rivers/Streams	Fall River (Pit)	52641031	8.61219	M	Miles	1100	Sedimentation/Siltation	2105	Historical Land Management Activities	2016	The sedimentation is accumulated sand size sediment in the upper Fall River. The historic land management activities include logging, grazing, channelization, roads, and railroads.
CAR517325	5	Central Valley	R	Rivers/Streams	Humbug Creek	51732030	2.20272	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2012	All resource extraction sources are abandoned mine
CAR559115	5	Central Valley	R	Rivers/Streams	Panoche Creek (Silver Creek to Belmont Avenue)	55112000	17.6357	M	Miles	1100	Sedimentation/Siltation	1000	Agriculture	2007	
CAR559115	5	Central Valley	R	Rivers/Streams	Panoche Creek (Silver Creek to Belmont Avenue)	55112000	17.6357	M	Miles	1100	Sedimentation/Siltation	1935	Agriculture-grazing	2007	

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR55911 5		Central Valley	R	Rivers/Streams	Panoche Creek (Silver Creek to Belmont Avenue)	55112000	17.6357	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2007	
CAL63030(6		Lahontan	L	Lakes/Reservoirs	Bridgeport Reservoi	63030050	2614.34	A	Acres	1100	Sedimentation/Siltation	1350	Grazing-Related Sources	2006	
CAL63030(6		Lahontan	L	Lakes/Reservoirs	Bridgeport Reservoi	63030050	2614.34	A	Acres	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2006	
CAL63030(6		Lahontan	L	Lakes/Reservoirs	Bridgeport Reservoi	63030050	2614.34	A	Acres	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2006	
CAL63030(6		Lahontan	L	Lakes/Reservoirs	Bridgeport Reservoi	63030050	2614.34	A	Acres	1100	Sedimentation/Siltation	8540	Sediment Resuspension	2006	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	1350	Grazing-Related Sources	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	2000	Silviculture	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	3200	Land Development	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	4300	Other Urban Runoff	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	4500	Highway/Road/Bridge Runoff	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	4600	Urban Runoff--Erosion and Sedimentation	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7000	Hydromodification	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7100	Channelization	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7600	Removal of Riparian Vegetation	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7810	Channel Erosion	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	8100	Atmospheric Deposition	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	8540	Sediment Resuspension	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	8600	Natural Sources	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	8700	Recreational and Tourism Activities (non-boating)	2007	
CAL63430(6		Lahontan	L	Lakes/Reservoirs	Tahoe, Lake	63430010	85364.1	A	Acres	1100	Sedimentation/Siltation	9100	Nonpoint Source	2007	
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	4501	Surface Runoff	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	5000	Resource Extraction	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	8100	Atmospheric Deposition	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	8700	Recreational and Tourism Activities (non-boating)	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63420 6		Lahontan	R	Rivers/Streams	Blackwood Creek	63420021	5.87001	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2008	Creek affected by past gravel quarry operations and other watershed disturbance including grazing and timber harv
CAR63520 6		Lahontan	R	Rivers/Streams	Bronco Creek	63520053	1.34403	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2006	Watershed disturbance in naturally highly erosive watershe
CAR63520 6		Lahontan	R	Rivers/Streams	Bronco Creek	63520053	1.34403	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2006	Watershed disturbance in naturally highly erosive watershe
CAR63520 6		Lahontan	R	Rivers/Streams	Bronco Creek	63520053	1.34403	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2006	Watershed disturbance in naturally highly erosive watershe
CAR63040 6		Lahontan	R	Rivers/Streams	Clearwater Creek	63040051	12.4874	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2006	Listed on basis of limited information; additional monitoring may support delisti
CAR63040 6		Lahontan	R	Rivers/Streams	Clearwater Creek	63040051	12.4874	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2006	Listed on basis of limited information; additional monitoring may support delisti
CAR63040 6		Lahontan	R	Rivers/Streams	Clearwater Creek	63040051	12.4874	M	Miles	1100	Sedimentation/Siltation	8300	Highway Maintenance and Runoff	2006	Listed on basis of limited information; additional monitoring may support delisti
CAR63010 6		Lahontan	R	Rivers/Streams	East Walker River, below Bridgeport Reservo	63030050	8.00973	M	Miles	1100	Sedimentation/Siltation	1350	Grazing-Related Sources	2019	
CAR63010 6		Lahontan	R	Rivers/Streams	East Walker River, below Bridgeport Reservo	63030050	8.00973	M	Miles	1100	Sedimentation/Siltation	4500	Highway/Road/Bridge Runoff	2019	
CAR63010 6		Lahontan	R	Rivers/Streams	East Walker River, below Bridgeport Reservo	63030050	8.00973	M	Miles	1100	Sedimentation/Siltation	4600	Urban Runoff--Erosion and Sedimentation	2019	
CAR63010 6		Lahontan	R	Rivers/Streams	East Walker River, below Bridgeport Reservo	63030050	8.00973	M	Miles	1100	Sedimentation/Siltation	7350	Upstream Impoundment	2019	
CAR63010 6		Lahontan	R	Rivers/Streams	East Walker River, below Bridgeport Reservo	63030050	8.00973	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2019	
CAR63520 6		Lahontan	R	Rivers/Streams	Gray Creek (Nevada County	63520052	2.8033	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2006	Sediment from disturbance of naturally highly erosive watershe
CAR63520 6		Lahontan	R	Rivers/Streams	Gray Creek (Nevada County	63520052	2.8033	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2006	Sediment from disturbance of naturally highly erosive watershe
CAR63520 6		Lahontan	R	Rivers/Streams	Gray Creek (Nevada County	63520052	2.8033	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2006	Sediment from disturbance of naturally highly erosive watershe
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2019	
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2019	
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2019	
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	7550	Habitat Modification	2019	
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	8700	Recreational and Tourism Activities (non-boating)	2019	
CAR63410 6		Lahontan	R	Rivers/Streams	Heavenly Valley Creek (USFS boundary to Trout Creek)	63410031	1.44732	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAR63030 6		Lahontan	R	Rivers/Streams	Hot Springs Canyon Creek	63030042	2.8612	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2008	Listed on basis of limited data; further monitoring may support delistir
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	4300	Other Urban Runoff	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	7000	Hydromodification	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	7800	Drainage/Filling Of Wetlands	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	8300	Highway Maintenance and Runoff	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	8700	Recreational and Tourism Activities (non-boating)	2006	
CAR63520 6		Lahontan	R	Rivers/Streams	Squaw Creek	63520011	5.8	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2006	
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	3000	Construction/Land Development	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	3100	Highway/Road/Bridge Construction	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	7700	Streambank Modification/Destabilization	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	7820	Erosion/Siltation	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	8600	Natural Sources	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	8700	Recreational and Tourism Activities (non-boating)	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	8710	Snow skiing activities	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63510 6		Lahontan	R	Rivers/Streams	Truckee River	63510010	39.1307	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2006	Watershed disturbance including ski resorts, silvicultural activities, urban development, reservoir construction and management; highly erosive subwatersh
CAR63420 6		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2008	
CAR63420 6		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	3200	Land Development	2008	
CAR63420 6		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	4000	Urban Runoff/Storm Sewers	2008	

WBID	REGION NUMBER	REGION NAME	WATER BODY TYPE ABBR	WATER BODY TYPE	WATER BODY NAME	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT ABBR	UNIT	POLLUTANT CODE	POLLUTANT	SOURCE CODE	POTENTIAL SOURCES	PROPOSED TMDL COMPLETION	COMMENTS
CAR634206		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	4500	Highway/Road/Bridge Runoff	2008	
CAR634206		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	7810	Channel Erosion	2008	
CAR634206		Lahontan	R	Rivers/Streams	Ward Creek	63420020	5.675	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2008	
CAR632106		Lahontan	R	Rivers/Streams	Wolf Creek (Alpine County)	63210031	11.8207	M	Miles	1100	Sedimentation/Siltation	1500	Range Grazing-Riparian and/or Upland	2019	
CAR632106		Lahontan	R	Rivers/Streams	Wolf Creek (Alpine County)	63210031	11.8207	M	Miles	1100	Sedimentation/Siltation	2000	Silviculture	2019	
CAR632106		Lahontan	R	Rivers/Streams	Wolf Creek (Alpine County)	63210031	11.8207	M	Miles	1100	Sedimentation/Siltation	9100	Nonpoint Source	2019	
CAL801718		Santa Ana	L	Lakes/Reservoirs	Big Bear Lake	80171000	2865.01	A	Acres	1100	Sedimentation/Siltation	3000	Construction/Land Development	2006	
CAL801718		Santa Ana	L	Lakes/Reservoirs	Big Bear Lake	80171000	2865.01	A	Acres	1100	Sedimentation/Siltation	8710	Snow skiing activities	2006	
CAL801718		Santa Ana	L	Lakes/Reservoirs	Big Bear Lake	80171000	2865.01	A	Acres	1100	Sedimentation/Siltation	9105	Unknown Nonpoint Source	2006	
CAR801718		Santa Ana	R	Rivers/Streams	Rathbone (Rathbun) Creek	80171000	4.68	M	Miles	1100	Sedimentation/Siltation	8710	Snow skiing activities	2006	
CAR801718		Santa Ana	R	Rivers/Streams	Rathbone (Rathbun) Creek	80171000	4.68	M	Miles	1100	Sedimentation/Siltation	9105	Unknown Nonpoint Source	2006	
CAE904319		San Diego	E	Estuaries	Agua Hedionda Lagoon	90431000	6.83187	A	Acres	1100	Sedimentation/Siltation	9201	Nonpoint/Point Source	2019	
CAE904219		San Diego	E	Estuaries	Buena Vista Lagoon	90421000	202.298	A	Acres	1100	Sedimentation/Siltation	9201	Nonpoint/Point Source	2019	
CAE906109		San Diego	E	Estuaries	Los Penasquitos Lagoon	90610000	468.918	A	Acres	1100	Sedimentation/Siltation	9201	Nonpoint/Point Source	2019	
CAE904619		San Diego	E	Estuaries	San Elijo Lagoon	90461000	565.804	A	Acres	1100	Sedimentation/Siltation	9201	Nonpoint/Point Source	2019	Estimated size of impairment is 150 acres

Post-Construction Water Balance Calculator

User may make changes from any cell that is orange or brown in color (similar to the cells to the immediate right). Cells in green are calculated for you.

(Step 1a) If you know the 85th percentile storm event for your location enter it in the box below

(Step 1b) If you can not answer 1a then select the county where the project is located (click on the cell to the right for drop-down): This will determine the average 85th percentile 24 hr. storm event for your site, which will appear under precipitation to left.

SACRAMENTO

(Step 1c) If you would like a more percise value select the location closest to your site. If you do not recgonize any of these locations, leave this drop-down menu at location. The average value for the County will be used.

SACRAMENTO FAA ARPT

Project Information		***Runoff Calculations***		
Project Name:	***Optional***	(Step 2) Indicate the Soil Type (dropdown menu to right):	***Group C Soils***	**Low infiltration. Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.**
Waste Discharge Identification (WDID):	***Optional***	(Step 3) Indicate the existing **dominant** non-built land Use Type (dropdown menu to right):	***Wood & Grass: <50% ground cover***	
Date:	***Optional***	(Step 4) Indicate the proposed **dominant** non-built land Use Type (dropdown menu to right):	***Lawn, Grass, or Pasture covering more than 75% of the open space***	
Sub Drainage Area Name (from map):	***Optional***		**Complete Either**	

Runoff Curve Numbers			**Sq Ft**	**Acres**	**Acres**
Existing Pervious Runoff Curve Number	**82**	*(Step 5) Total Project Site Area:*		**5.00**	**5.00**
Proposed Development Pervious Runoff Curve Number	**74**	*(Step 6) Sub-watershed Area:*		**5.00**	**5.00**
		Percent of total project :	**100%**		

Design Storm					
Based on the County you indicated above, we have included the 85 percentile average 24 hr event - P85 (in)^ for your area.	**0.62**	**in**			
The Amount of rainfall needed for runoff to occur (Existing runoff curve number -P from existing RCN (in)^)	**0.44**	**In**	***(Step 7) Sub-watershed Conditions***	**Complete Either**	**Calculated Acres**
P used for calculations (in) (the greater of the above two criteria)	**0.62**	**In**	Sub-watershed Area (acres)	**Sq Ft** / **Acres**	**5.00**
^Available at www.cabmphandbooks.com			Existing Rooftop Impervious Coverage	**0**	**0.00**
			Existing Non-Rooftop Impervious Coverage	**0**	**0.00**
			Proposed Rooftop Impervious Coverage	**0**	**0.00**
			Proposed Non-Rooftop Impervious Coverage	**0**	**0.00**

Credits	**Acres**	**Square Feet**
Porous Pavement	**0.00**	**0**
Tree Planting	**0.00**	**0**
Downspout Disconnection	**0.00**	**0**
Impervious Area Disconnection	**0.00**	**0**
Green Roof	**0.00**	**0**
Stream Buffer	**0.00**	**0**
Vegetated Swales	**0.00**	**0**
Subtotal	**0.00**	**0**
Subtotal Runoff Volume Reduction Credit	**0 Cu. Ft.**	

Pre-Project Runoff Volume (cu ft)	**247**	**Cu.Ft.**
Project-Related Runoff Volume Increase w/o credits (cu ft)	**0**	**Cu.Ft.**
Project-Related Volume Increase with Credits (cu ft)	**0**	**Cu.Ft.**

You have achieved your minimum requirements

(Step 9) Impervious Volume Reduction Credits	**Volume (cubic feet)**
Rain Barrels/Cisterns	**0 Cu. Ft.**
Soil Quality	**0 Cu. Ft.**
Subtotal Runoff Volume Reduction	**0 Cu. Ft.**
Total Runoff Volume Reduction Credit	**0 Cu. Ft.**

Porous Pavement Credit Worksheet

Please fill out a porous pavement credit worksheet for each project sub-watershed.

For the PROPOSED Development:

Proposed Porous Pavement	Runoff Reduction*	Fill in either Acres or SqFt In SqFt.	In Acres	Equivalent Acres
Area of **Brick without Grout** on less than 12 inches of base with at least 20% void space over soil	0.45			0.00
Area of **Brick without Grout** on more than 12 inches of base with at least 20% void space over soil	0.90			0.00
Area of **Cobbles** less than 12 inches deep and over soil	0.30			0.00
Area of **Cobbles** less than 12 inches deep and over soil	0.60			0.00
Area of **Reinforced Grass Pavement** on less than 12 inches of base with at least 20% void space over soil	0.45			0.00
Area of **Reinforced Grass Pavement** on at least 12 inches of base with at least 20% void space over soil	0.90			0.00
Area of **Porous Gravel Pavement** on less than 12 inches of base with at least 20% void space over soil	0.38			0.00
Area of **Porous Gravel Pavement** on at least 12 inches of base with at least 20% void space over soil	0.75			0.00
Area of **Poured Porous Concrete or Asphalt Pavement** with less than 4 inches of gravel base (washed stone)	0.40			0.00
Area of **Poured Porous Concrete or Asphalt Pavement** with 4 to 8 inches of gravel base (washed stone)	0.60			0.00
Area of **Poured Porous Concrete or Asphalt Pavement** with 8 to 12 inches of gravel base (washed stone)	0.80			0.00
Area of **Poured Porous Concrete or Asphalt Pavement** with 12 or more inches of gravel base (washed stone)	1.00			0.00

*=1-Rv**

Return to Calculator

**Using Site Design Techniques to meet Development Standards for Stormwater Quality (BASMAA 2003)

**NCDENR Stormwater BMP Manual (2007)

Tree Planting Credit Worksheet

Please fill out a tree canopy credit worksheet for each project sub-watershed.

Tree Canopy Credit Criteria	Number of Trees Planted	Credit (acres)
Number of proposed evergreen trees to be planted (credit = number of trees x 0.005)*	0	0.00
Number of proposed deciduous trees to be planted (credit = number of trees x 0.0025)*		0.00
	Square feet Under Canopy	
Square feet under an existing tree canopy, that will remain on the property, with an average diameter at 4.5 ft above grade (i.e., diameter at breast height or DBH) is LESS than 12 in diameter.		0.00
Square feet under an existing tree canopy that will remain on the property, with an average diameter at 4.5 ft above grade (i.e., diameter at breast height or DBH) is 12 in diameter or GREATER.		0.00
Please describe below how the project will ensure that these trees will be maintained.		

0

Return to Calculator

* credit amount based on credits from Stormwater Quality Design Manual for the Sacramento and South Placer Regions

Downspout Disconnection Credit Worksheet

Please fill out a downspout disconnection credit worksheet for each project subwatershed. If you answer yes to all questions, all rooftop area draining to each downspout will be subtracted from your proposed rooftop impervious coverage.

Downspout Disconnection Credit Criteria					
Do downspouts and any extensions extend at least six feet from a basement and two feet from a crawl space or concrete slab?				○ Yes	◉ No
Is the area of rooftop connecting to each disconnected downspout 600 square feet or less?				○ Yes	◉ No
Is the roof runoff from the design storm event fully contained in a raised bed or planter box or does it drain as sheet flow to a landscaped area large enough to contain the roof runoff from the design storm event?				○ Yes	◉ No
The Stream Buffer and/or Vegetated Swale credits **will not** be taken in this sub-watershed area?				○ Yes	◉ No
Percentage of existing	0.00	Acres	of rooftop surface has disconnected downspouts		
Percentage of the proposed	0.00	Acres	of rooftop surface has disconnected downspouts	50	
				Return to Calculator	

Impervious Area Disconnection Credit Worksheet

Please fill out an impervious area disconnection credit worksheet for each project sub-watershed. If you answer yes to all questions, all non-rooftop impervious surface area will be subtracted from your proposed non-rooftop impervious coverage.

Non-Rooftop Disconnection Credit Criteria	Response
Is the maximum contributing impervious flow path length less than 75 feet or, if equal or greater than 75 feet, is a storage device (e.g. French drain, bioretention area, gravel trench) implemented to achieve the required disconnection length?	◉ Yes ○ No
Is the impervious area to any one discharge location less than 5,000 square feet?	◉ Yes ○ No
The Stream Buffer credit **will not** be taken in this sub-watershed area?	◉ Yes ○ No

Percentage of existing	0.00	Acres non-rooftop surface area disconnected	
Percentage of the proposed	0.00	Acres non-rooftop surface area disconnected	70

Return to Calculator

Green Roof Credit Worksheet

Please fill out a greenroof credit worksheet for each project sub-watershed. If you answer yes to all questions, 70% of the greenroof area will be subtracted from your proposed rooftop impervious coverage.

Green Roof Credit Criteria	Response
Is the roof slope less than 15% or does it have a grid to hold the substrate in place until it forms a thick vegetation mat?	◉ Yes ○ No
Has a professional engineer assessed the necessary load reserves and designed a roof structure to meet state and local codes?	◉ Yes ○ No
Is the irrigation needed for plant establishment and/or to sustain the green roof during extended dry periods, is the source from stored, recycled, reclaimed, or reused water?	◉ Yes ○ No
Percentage of existing 0.00 Acres rooftop surface area in greenroof	
Percentage of the proposed 0.00 Acres rooftop surface area in greenroof	

Return to Calculator

Stream Buffer Credit Worksheet

Please fill out a stream buffer credit worksheet for each project sub-watershed. If you answer yes to all questions, you may subtract all impervious surface draining to each stream buffer that has not been addressed using the Downspout and/or Impervious Area Disconnection credits.

Stream Buffer Credit Criteria				Response
Does runoff enter the floodprone width* or within 500 feet (whichever is larger) of a stream channel as sheet flow**?				○ Yes ◉ No
Is the contributing overland slope 5% or less, or if greater than 5%, is a level spreader used?				○ Yes ◉ No
Is the buffer area protected from vehicle or other traffic barriers to reduce compaction?				○ Yes ◉ No
Will the stream buffer be maintained in an ungraded and uncompacted condition and will the vegetation be maintained in a natural condition?				○ Yes ◉ No
Percentage of existing	0.00	Acres	impervious surface area draining into a stream buffer:	
Percentage of the proposed	0.00	Acres	impervious surface area that will drain into a stream buffer:	
Please describe below how the project will ensure that the buffer areas will remain in ungraded and uncompacted condition and that the vegetation will be maintained in a natural condition.				

Return to Calculator

* floodprone width is the width at twice the bankfull depth.
** the maximum contributing length shall be 75 feet for impervious area

Vegetated Swale Credit Worksheet

Please fill out a vegetated swale worksheet for each project subwatershed. If you answer yes to all questions, you may subtract all impervious surface draining to each stream buffer that has not been addressed using the Downspout Disconnection credit.

Vegetated Swale Credit Criteria

Have all vegetated swales been designed in accordance with Treatment Control BMP 30 (TC-30 - Vegetated Swale) from the California Stormwater BMP Handbook, New Development and Redevelopment (available at www.cabmphandbooks.com)?	○ Yes ◉ No
Is the maximum flow velocity for runoff from the design storm event less than or equal to 1.0 foot per second?	○ Yes ◉ No

Percentage of existing	0.00	Acres of impervious area draining to a vegetated swale	
Percentage of the proposed	0.00	Acres of impervious area draining to a vegetated swale	

Return to Calculator

Rain Barrel/Cistern Credit Worksheet

Please fill out a rain barrel/cistern worksheet for each project sub-watershed.

Rain Barrel/Cistern Credit Criteria	Response
Total number of rain barrel(s)/cisterns	
Average capacity of rain barrel(s)/cistern(s) (in gallons)	
Total capacity rain barrel(s)/cistern(s) (in cu ft) [1]	0

[1] accounts for 10% loss

Return to Calculator

Please fill out a soil quality worksheet for each project sub-watershed.

	Response
Will the landscaped area be lined with an impervious membrane?	
Will the soils used for landscaping meet the ideal bulk densities listed in Table 1 below? [1]	○ Yes ◉ No
If you answered yes to the question above, and you know the area-weighted bulk density within the top 12 inches for soils used for landscaping (in g/cm^3)* , fill in the cell to the right and skip to cell G11. If not select from the drop-down menu in G10.	1.3
If you answered yes to the question above, but you do not know the exact bulk density, which of the soil types in the drop down menu to the right best describes the top 12 inches for soils used for landscaping (in g/cm^3).	Sandy loams, loams
What is the average depth of your landscaped soil media meeting the above criteria (inches)?	12
What is the total area of the landscaped areas meeting the above criteria (in acres)?	2.97

Return to Calculator

Table 1

Sands, loamy sands	<1.6
Sandy loams, loams	<1.4
Sandy clay loams, loams, clay loams	<1.4
Silts, silt loams	<1.3
Silt loams, silty clay loams	<1.1
Sandy clays, silty clays, some clay loams (35-45% clay)	<1.1
Clays (>45% clay)	<1.1

Porosity (%) 50.94%

Mineral grains in many soils are mainly quartz and feldspar, so 2.65 a good average for particle density. To determine percent porosity, use the formula: Porosity (%) = (1-Bulk Density/2.65) X 100

[1] USDA NRCS. "Soil Quality Urban Technical Note No.2-Urban Soil Compaction". March 2000. http://soils.usda.gov/sqi/management/files/sq_utn_2.pdf

* To determine how to calculate density see: http://www.globe.gov/tctg/bulkden.pdf?sectionID=94

APPENDIX 2:
Post-Construction Water Balance Performance Standard Spreadsheet

The discharger shall submit with their Notice of Intent (NOI) the following information to demonstrate compliance with the New and Re-Development Water Balance Performance Standard.

Map Instructions

The discharger must submit a small-scale topographic map of the site to show the existing contour elevations, pre- and post-construction drainage divides, and the total length of stream in each watershed area. Recommended scales include 1 in. = 20 ft., 1 in. = 30 ft., 1 in. = 40 ft., or 1 in = 50 ft. The suggested contour interval is usually 1 to 5 feet, depending upon the slope of the terrain. The contour interval may be increased on steep slopes. Other contour intervals and scales may be appropriate given the magnitude of land disturbance.

Spreadsheet Instructions

The intent of the spreadsheet is to help dischargers calculate the project-related increase in runoff volume and select impervious area and runoff reduction credits to reduce the project-related increase in runoff volume to pre-project levels.

The discharger has the option of using the spreadsheet (**Appendix 2.1)** or a more sophisticated, watershed process-based model (e.g. Storm Water Management Model, Hydrological Simulation Program Fortran) to determine the project-related increase in runoff volume.

In* Appendix 4.1**, ***you must complete the worksheet for each land use/soil type combination for each project sub-watershed.

Steps 1 through 9 pertain specifically to the Runoff Volume Calculator:

Step 1: Enter the county where the project is located in cell H3.

Step 2: Enter the soil type in cell H6.

Step 3: Enter the existing pervious (dominant) land use type in cell H7.

Step 4: Enter the proposed pervious (dominant) land use type in cell H8.

Step 5: Enter the total project site area in cell H11 or J11.

Step 6: Enter the sub-watershed area in cell H12 or J12.

Step 7: Enter the existing rooftop area in cell H17 or J17, the existing non-rooftop impervious area in cell H18 or J18, the proposed rooftop area in cell H19 or J19, and the proposed non-rooftop impervious area in cell H20 or J20

Step 8: Work through each of the impervious area reduction credits and claim credits where applicable. Volume that cannot be addressed using non-structural practices must be captured in structural practices and approved by the Regional Water Board.

Step 9: Work through each of the impervious volume reduction credits and claim credits where applicable. Volume that cannot be addressed using non-structural practices must be captured in structural practices and approved by the Regional Water Board.

Non-structural Practices Available for Crediting

- ***Porous Pavement***
- ***Tree Planting***
- ***Downspout Disconnection***
- ***Impervious Area Disconnection***
- ***Green Roof***
- ***Stream Buffer***
- ***Vegetated Swales***
- ***Rain Barrels and Cisterns***
- ***Landscaping Soil Quality***

APPENDIX 3
Bioassessment Monitoring Guidelines

Bioassessment monitoring is required for projects that meet all of the following criteria:

1. The project is rated Risk Level 3 or LUP Type 3
2. The project directly discharges runoff to a freshwater wadeable stream (or streams) that is either: (a) listed by the State Water Board or USEPA as impaired due to sediment, and/or (b) tributary to any downstream water body that is listed for sediment; and/or have the beneficial use SPAWN & COLD & MIGRATORY
3. Total project-related ground disturbance exceeds 30 acres.

For all such projects, the discharger shall conduct bioassessment monitoring, as described in this section, to assess the effect of the project on the biological integrity of receiving waters.
Bioassessment shall include:

1. The collection and reporting of specified instream biological data
2. The collection and reporting of specified instream physical habitat data

<u>Bioassessment Exception</u>
If a site qualifies for bioassessment, but construction commences out of an index period for the site location, the discharger shall:

1. Receive Regional Water Board approval for the sampling exception
2. Make a check payable to: Cal State Chico Foundation (SWAMP Bank Account) or San Jose State Foundation (SWAMP Bank Account) and include the WDID# on the check for the amount calculated for the exempted project.
3. Send a copy of the check to the Regional Water Board office for the site's region
4. Invest **7,500.00 X The number of samples required** into the SWAMP program as compensation (upon Regional Water Board approval).
5. Conduct bioassessment monitoring, as described in Appendix 4
6. Include the collection and reporting of specified instream biological data and physical habitat
7. Use the bioassessment sample collection and Quality Assurance & Quality Control (QA/QC) protocols developed by the State of California's Surface Water Ambient Monitoring Program (SWAMP)

<u>Site Locations and Frequency</u>
Macroinvertebrate samples shall be collected both before ground disturbance is initiated and after the project is completed. The "after" sample(s) shall be collected after at least one winter season resulting in surface runoff has transpired after project-related ground disturbance has ceased. "Before" and "after" samples shall be collected both upstream and downstream of the project's

discharge. Upstream samples should be taken immediately before the sites outfall and downstream samples should be taken immediately after the outfall (when safe to collect the samples). Samples should be collected for each freshwater wadeable stream that is listed as impaired due to sediment, or tributary to a water body that is listed for sediment. Habitat assessment data shall be collected concurrently with all required macroinvertebrate samples.

Index Period (Timing of Sample Collection)
Macroinvertebrate sampling shall be conducted during the time of year (i.e., the "index period") most appropriate for bioassessment sampling, depending on ecoregion. This map is posted on the State Water Board's Website: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml

Field Methods for Macroinvertebrate Collections
In collecting macroinvertebrate samples, the discharger shall use the "Reachwide Benthos (Multi-habitat) Procedure" specified in *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* (Ode 2007).[1]

Physical - Habitat Assessment Methods
The discharger shall conduct, concurrently with all required macroinvertebrate collections, the "Full" suite of physical habitat characterization measurements as specified in *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* (Ode 2007), and as summarized in the Surface Water Ambient Monitoring Program's *Stream Habitat Characterization Form — Full Version*.

Laboratory Methods
Macroinvertebrates shall be identified and classified according to the Standard Taxonomic Effort (STE) Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT),[2] and using a fixed-count of 600 organisms per sample.

Quality Assurance
The discharger or its consultant(s) shall have and follow a quality assurance (QA) plan that covers the required bioassessment monitoring. The QA plan shall include, or be supplemented to include, a specific requirement for external QA checks (i.e., verification of taxonomic identifications and correction of data where errors are identified). External QA checks shall be performed on one of the

[1] This document is available on the Internet at: http://www.swrcb.ca.gov/swamp/docs/phab_sopr6.pdf.
[2] The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

discharger's macroinvertebrate samples collected per calendar year, or ten percent of the samples per year (whichever is greater). QA samples shall be randomly selected. The external QA checks shall be paid for by the discharger, and performed by the California Department of Fish and Game's Aquatic Bioassessment Laboratory. An alternate laboratory with equivalent or better expertise and performance may be used if approved in writing by State Water Board staff.

Sample Preservation and Archiving

The original sample material shall be stored in 70 percent ethanol and retained by the discharger until: 1) all QA analyses specified herein and in the relevant QA plan are completed; and 2) any data corrections and/or re-analyses recommended by the external QA laboratory have been implemented. The remaining subsampled material shall be stored in 70 percent ethanol and retained until completeness checks have been performed according to the relevant QA plan. The identified organisms shall be stored in 70 percent ethanol, in separate glass vials for each final ID taxon. (For example, a sample with 45 identified taxa would be archived in a minimum of 45 vials, each containing all individuals of the identified taxon.) Each of the vials containing identified organisms shall be labeled with taxonomic information (i.e., taxon name, organism count) and collection information (i.e., site name/site code, waterbody name, date collected, method of collection). The identified organisms shall be archived (i.e., retained) by the discharger for a period of not less than three years from the date that all QA steps are completed, and shall be checked at least once per year and "topped off" with ethanol to prevent desiccation. The identified organisms shall be relinquished to the State Water Board upon request by any State Water Board staff.

Data Submittal

The macroinvertebrate results (i.e., taxonomic identifications consistent with the specified SAFIT STEs, and number of organisms within each taxa) shall be submitted to the State Water Board in electronic format. The State Water Board's Surface Water Ambient Monitoring Program (SWAMP) is currently developing standardized formats for reporting bioassessment data. All bioassessment data collected after those formats become available shall be submitted using the SWAMP formats. Until those formats are available, the biological data shall be submitted in MS-Excel (or equivalent) format.[3]

The physical/habitat data shall be reported using the standard format titled *SWAMP Stream Habitat Characterization Form — Full Version*.[4]

[3] Any version of Excel, 2000 or later, may be used.
[4] Available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/fieldforms_fullversion052908.pdf

Invasive Species Prevention

In conducting the required bioassessment monitoring, the discharger and its consultants shall take precautions to prevent the introduction or spread of aquatic invasive species. At minimum, the discharger and its consultants shall follow the recommendations of the California Department of Fish and Game to minimize the introduction or spread of the New Zealand mudsnail.[5]

[5] Instructions for controlling the spread of NZ mudsnails, including decontamination methods, can be found at: http://www.dfg.ca.gov/invasives/mudsnail/
More information on AIS More information on AIS
http://www.waterboards.ca.gov/water_issues/programs/swamp/ais/

Appendix 4 Sediment TMDLs

Implemented Sediment TMDLs in California. Construction was listed as a source in all fo these TMDLs in relation to road construction. Although construction was mentioned as a source, it was not given a specific allocation amount. The closest allocation amount would be for the road activity management WLA. **Implementation Phase** – Adoption process by the Regional Board, the State Water Resources Control Board, the Office of Administrative Law, and the US Environmental Protection Agency completed and TMDL being implemented.

A. Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres**	**WLA** tons mi^2 yr
1 R1.epa.albionfinaltmdl	R	Albion River	Sedimentation	Road Construction	2001	43 acres	See A (table 6)

B Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres**	**WLA** tons mi^2 yr
1 R1.epa.EelR-middle.mainSed.temp	R	Middle Main Eel River and Tributaries (from Dos Rios to the South Fork)	Sedimentation Road	Construction	2005-2006 521	mi^2	100

C Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres**	**WLA** tons mi^2 yr
1 R1.epa.EelRsouth.sed.temp	R	South Fork Eel River	Sedimentation	Road Construction	12 1999	See chart	473

D Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres**	**WLA** tons mi^2 yr
1 R1.epa.bigfinaltmdl	R Big	River	Sedimentation	Road Construction	12 2001	181 mi^2 watershed drainage	TMDL = loading capacity = nonpoint sources + background =

							393 t mi2 yr

E Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres	WLA tons mi^2 yr
1 R1.epa.EelR-lower.Sed.temp-121807-signed	R	Lower Eel River	Sedimentation	Road Construction	12 2007	300 square-mile watershed	898

F Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres	WLA tons mi^2 yr
1 R1.epa.EelR-middle.Sed.temp-	R	Middle Fork Eel River	Sedimentation	Road Construction	12 2003	753 mi^2 (approx. 482,000 acres)	82

G Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres Mi^2	WLA tons mi^2 yr
1 R1.epa.EelRnorth-Sed.temp.final-121807-signed	R	North Fork Eel River	Sedimentation	Road Construction	12 30 2002	289 (180,020 acres)	20

H Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres Mi^2	WLA tons mi^2 yr
1 R1.epa.EelR-upper.mainSed.temp-	R	Upper Main Eel River and Tributaries (including Tomki Creek, Outlet Creek and Lake Pillsbury)	Sedimentation	Road Construction	12 29 2004	688 (approx. 440,384 acres)	14

I Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres	WLA tons mi^2 yr
1 R1.epa.gualalafinaltmdl	R	Gualala River	Sedimentation	Road Construction	Not sure	300 (191,145 acres)	7

J Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA tons mi^2 yr
1 R1.epa.Mad-sed.turbidity	R	Mad River	Sedimentation	Road Construction	12 21 2007	480	174

K Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA tons mi^2 yr
1 R1.epa.mattole.sediment	R	Mattole River	Sedimentation	Road Construction	12 30 2003	296	27 or 520+27 = 547

L Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA tons mi^2 yr
1 R1.epa.navarro.sed.temp	R	Navarro River	Sedimentation	Road Construction	Not sure	315 (201,600 acres).	50

M Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA tons mi^2 yr
1 R1.epa.noyo.sediment	R	Noyo River	Sedimentation	Road Construction	12 16 1999	113 (72,323 acres)	68 (three areas measured) Table 16 in the TMDL

N Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA tons mi^2 yr
1 R1.epa.RedwoodCk.sed	Cr	Redwood Creek	Sedimentation	Road Construction	12 30 1998	278	1900 Total allocation

O Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA – Roads tons mi^2 yr
1 R1.epa.tenmile.sed	R	Ten Mile River	Sedimentation	Road Construction	2000	120	9

P Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi^2	WLA management tons mi^2 yr
1 R1.epa.trinity.sed	R	Trinity River	Sedimentation	Road Construction	12 20 2001	2000 of 3000 covered in this TMDL	See rows below
1	Cr	Horse Linto Creek	Sedimentation	Road Construction	12 20 2001	64	528
1	Cr	Mill creek and Tish Tang	Sedimentation	Road Construction	12 20 2001	39	210
1	Cr	Willow Creek	Sedimentation	Road Construction	12 20 2001	43	94
1	Cr	Campbell Creek and Supply Creek	Sedimentation	Road Construction	12 20 2001	11	1961
1	Cr	Lower Mainstem and Coon Creek	Sedimentation	Road Construction	12 20 2001	32	63
1 R		Reference Subwatershed [1]	Sedimentation	Road Construction	12 20 2001	434	24
1	Cr	Canyon Creek	Sedimentation	Road	12 20 2001	64	326

				Construction			
1 R		Upper Tributaries[2]	Sedimentation	Road Construction	12 20 2001	72	67
1 R		Middle Tributaries[3]	Sedimentation	Road Construction	12 20 2001	54	53
1 R		Lower Tributaries[4]	Sedimentation	Road Construction	12 20 2001	96	55
1	Cr	Weaver and Rush Creeks	Sedimentation	Road Construction	12 20 2001	72	169
1 Cr		Deadwood Creek Hoadley Gulch Poker Bar	Sedimentation	Road Construction	12 20 2001	47	68
1	L	Lewiston Lake	Sedimentation	Road Construction	12 20 2001	25	49
1 Cr		Grassvalley Creek	Sedimentation	Road Construction	12 20 2001	37	44
1	Cr	Indian Creek	Sedimentation	Road Construction	12 20 2001	34	81
1	Cr	Reading and Browns Creek	Sedimentation	Road Construction	12 20 2001	104	66
1 Cr		Reference Subwatersheds[5]	Sedimentation	Road Construction	12 20 2001	235	281
1	L, Cr	Westside tributaries[6]	Sedimentation	Road Construction	12 20 2001	93	105
1 R,	Cr, G	Upper trinity[7]	Sedimentation	Road Construction	12 20 2001	161	690
1 R,	Cr, G	East Fork Tributaries[8]	Sedimentation	Road Construction	12 20 2001	115	65
1	R, L	Eastside Tributaries[9]	Sedimentation	Road Construction	12 20 2001	89	60

1 New River, Big French, Manzanita, North Fork, East Fork, North Fork
2 Dutch, Soldier, Oregon gulch, Conner Creek
3 Big Bar, Prairie Creek, Little French Creek
4 Swede, Italian, Canadian, Cedar Flat, Mill, McDonald, Hennessy, Quimby, Hawkins, Sharber
5 Stuarts Fork, Swift Creek, Coffee Creek
6 Stuart Arm, Stoney Creek, Mule Creek, East Fork, Stuart Fork, West Side Trinity Lake, Hatchet Creek, Buckeye Creek,
7 Upper Trinity River, Tangle Blue, Sunflower, Graves, Bear Upper Trinity Mainstream, Ramshorn Creek, Ripple Creek, Minnehaha Creek, Snowslide Gulch, Scorpion Creek
8 East Fork Trinity, Cedar Creek, Squirrel Gulch

9 East Side Tributaries, Trinity Lake

Q Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres** mi^2	**WLA** tons mi^2 yr
1 R1.epa.trinity.so.sed	R, Cr	South Fork Trinity River and Hayfork Creek	Sedimentation	Road Construction	12 1998	Not given, 19 miles long	33 (road total)

R Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres** mi^2	**WLA** tons mi^2 yr
1 R1.epa.vanduzen.sed	R, Cr	Van Duzen River and Yager Creek	Sedimentation	Various	12 16 1999	429	1353 total allocation
1		Upper Basin	Sedimentation	Road Construction			7
1		Middle Basin	Sedimentation	Road Construction			22
1		Lower Basin	Sedimentation	Road Construction			20

S Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres** mi^2	**WLA** tons mi^2 yr
6 R6.blackwood.sed Cr		Blackwood Creek (Placer County)	Bedded Sediment	Various	9 2007	11	17272 total

T Region	**Type**	**Name**	**Pollutant Stressor**	**Potential Sources**	**TMDL Completion Date**	**Watershed Acres** mi^2	**WLA** tons mi^2 yr
6 R6.SquawCk.sed R		Squaw Creek (Placer County)	Sedimentation /controllable sources	Various – basin plan amendment	4 13 2006	8.2	10,900

Adopted TMDLs for Construction Sediment Sources

Region	Type	Name	Pollutant Stressor	Potential Sources	**TMDL Completion Date**	**Watershed Area** mi^2	Waste load Allocation tons mi^2 yr
8 R		Newport Bay San Diego Creek Watershed	Sedimentation	Construction Land Development	1999 2.24	(1432 acres)	125,000 tons per Year (no more than 13,000 tons per year from construction sites)

Appendix 4 Non Sediment TMDLs

Region 1 Lost River-DIN and CBOD

Region 1 Source: Cal Trans Construction TMDL Completion Date: 12 30 2008 TMDL Type: River, Lake Watershed Area= 2996 mi^2	**Pollutant Stressors/WLA**	
	Dissolved inorganic nitrogen (DIN) (metric tons/yr)	**Carbonaceous biochemical oxygen demand (CBOD) (metric tons/yr)**
Lost River from the Oregon border to Tule Lake	.1 .2	
Tule Lake Refuge	.1	.2
Lower Klamath Refuge	.1	.2

Region 2 San Francisco Bay-Mercury

Region 2 Source:Non-Urban Stormwater Runoff TMDL Type: Bay	**Name**	**Pollutant Stressor/WLA**	**TMDL Completion Date**
	San Francisco Bay	Mercury 25 kg/year	08 09 2006

Region 4 Machado Lake Nutrients - Resolution No. 2008-006
(Effective Date - March 11, 2009)

General Construction Stormwater Permit WLAs	Years After Effective Date	Total Phosphorus (mg/L)	Total Nitrogen (TKN + NO3-N + NO2-N) (mg/L)
Interim WLAs[1]	At Effective Date	1.25	3.50
Interim WLAs[2] 5	years	1.25	2.45
Final WLAs[2]	9.5 years	0.10	1.00

[1] The compliance points for effective date interim WLAs are measured in the lake.
[2] No compliance points are specified for general construction stormwater permits for the year 5 interim WLAs and final WLAs

Region 4 Ballona Creek-Metals and Selenium – Resolution No. 2007-015
(Effective Date October 29, 2008)

Wet Weather WLAs

Region 4 Source: NPDES General Construction TMDL Completion Date: 10 29 2008 TMDL Type: Creek								
	Copper (Cu)		**Lead (Pb)**		**Selenium (Se)**		**Zinc (Zn)**	
	g/day	g/day/acre	g/day	g/day/acre	g/day	g/day/acre	g/day	g/day/acre
Ballona Creek	4.94E-07 x Daily storm volume (L)	2.20E-10 x Daily storm volume (L)	1.62E-06 x Daily storm volume (L)	7.20E-10 x Daily storm volume (L)	1.37E-07 x Daily storm volume (L)	6.10E-11 x Daily storm volume (L)	3.27E-06 x Daily storm volume (L)	1.45E-09 x Daily storm volume (L)

Wet-weather WLA Implementation

- Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the final waste load allocations assigned to construction storm water permittees.
- Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the effective date of the TMDL.
- General construction storm water permittees will be considered in compliance with final waste load allocations if they implement these Regional Board approved BMPs. All permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with final waste load allocations.

Dry-weather WLAs

A waste load allocation of zero is assigned to all general construction storm water permits during dry weather.

Dry-weather WLA Implementation

Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order No. 99-08 DWQ), or any successor order, are exempt from the dry-weather waste load allocation equal to zero as long as they comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these authorized non-storm discharges shall be:

(1) infeasible to eliminate
(2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and
(3) not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order.

Unauthorized non-storm water flows are already prohibited by Order No. 99-08 DWQ.

Region 4 Los Angeles River and Tributaries-Metals– Resolution No. 2007-014
(Effective Date October 29, 2008)

Wet Weather WLAs

	Cadmium (Cd)		**Copper (Cu)**		**Lead (Pb)**		**Zinc (Zn)**	
	kg/day g/day/acre		kg/day g/day/acre		kg/day g/day/acre		kg/day g/day/acre	
5.9x10	$^{-11}$ x Daily storm volume (L)	7.6×10^{-12} x Daily storm volume (L)	3.2×10^{-10} x Daily storm volume (L)	4.2×10^{-11} x Daily storm volume (L)	1.2×10^{-9} x Daily storm volume (L)	1.5×10^{-10} x Daily storm volume (L)	3.01×10^{-9} x Daily storm volume (L)	3.9×10^{-10} x Daily storm volume (L)

Wet-weather WLA Implementation

- Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the final waste load allocations assigned to construction storm water permittees.
- Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the effective date of the TMDL.
- General construction storm water permittees will be considered in compliance with final waste load allocations if they implement these Regional Board approved BMPs. All permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with final waste load allocations.

Dry-weather WLAs

A waste load allocation of zero is assigned to all general construction storm water permits during dry weather.

Dry-weather WLA Implementation

Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order No. 99-08 DWQ), or any successor order, are exempt from the dry-weather waste load allocation equal to zero as

long as they comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these authorized non-storm discharges shall be:

(1) infeasible to eliminate
(2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and
(3) not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order.

Unauthorized non-storm water flows are already prohibited by Order No. 99-08 DWQ.

Region 4 Calleguas Creek Metals TMDL – Resolution No. 2006-012 (Effective Date - March 26, 2007)

Interim Limits and Final WLAs for Total Recoverable Copper, Nickel, and Selenium

Interim limits and waste load allocations are applied to receiving water.

A. Interim Limits

Constituents	Calleguas and Conejo Creek			Revolon Slough		
	Dry CMC (ug/L)	Dry CCC (ug/L)	Wet CMC (ug/L)	Dry CMC (ug/L)	Dry CCC (ug/L)	Wet CMC (ug/L)
Copper*	23	19	204	23	19	204
Nickel	15	13	(a)	15	13	(a)
Selenium	(b)	(b)	(b)	14	13	(a)

(a) The current loads do not exceed the TMDL under wet conditions; interim limits are not required.
(b) Selenium allocations have not been developed for this reach as it is not on the 303(d) list.
(c) Attainment of interim limits will be evaluated in consideration of background loading data, if available.

B. Final WLAs for Total Recoverable Copper, Nickel, and Selenium

Dry-Weather WLAs in Water Column

Flow Range	Calleguas and Conejo Creek			Revolon Slough		
	Low Flow	Average Flow	Elevated Flow	Low Flow	Average Flow	Elevated Flow
Copper1 (lbs/day)	0.04*WER - 0.02	0.12*WER - 0.02	0.18*WER - 0.03	0.03*WER - 0.01	0.06*WER - 0.03	0.13*WER - 0.02
Nickel (lbs/day)	0.100	0.120	0.440	0.050	0.069	0.116
Selenium (lbs/day)	(a)	(a)	(a)	0.004	0.003	0.004

[1] If site-specific WERs are approved by the Regional Board, TMDL waste load allocations shall be implemented in accordance with the approved WERs using the equations set forth above. Regardless of the final WERs, total copper loading shall not exceed current loading.

(a) Selenium allocations have not been developed for this reach as it is not on the 303(d) list.

Wet-Weather WLAs in Water Column

Constituent	Calleguas Creek	Revolon Slough
Copper[1] (lbs/day)	(0.00054*Q^2*0.032*Q - 0.17)*WER - 0.06	(0.0002*Q2+0.0005*Q)*WER
Nickel[2] (lbs/day)	0.014*Q^2+0.82*Q	0.027*Q^2+0.47*Q
Selenium[2] (lbs/day)	(a)	0.027*Q^2+0.47*Q

[1] If site-specific WERs are approved by the Regional Board, TMDL waste load allocations shall be implemented in accordance with the approved WERs using the equations set forth above. Regardless of the final WERs, total copper loading shall not exceed current loading.

[2] Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table

(a) Selenium allocations have not been developed for this reach as it is not on the 303(d) list.

Q: Daily storm volume.

Interim Limits and Final WLAs for Mercury in Suspended Sediment

Flow Range	Calleguas Creek		Revolon Slough	
	Interim (lbs/yr)	Final (lbs/yr)	Interim (lbs/yr)	Final (lbs/yr)
0-15,000 MGY	3.3	0.4	1.7	0.1
15,000-25,000 MGY	10.5	1.6	4	0.7
Above 25,000 MGY	64.6	9.3	10.2	1.8

MGY: million gallons per year.

In accordance with current practice, a group concentration-based WLA has been developed for all permitted stormwater discharges, including municipal separate storm sewer systems (MS4s), Caltrans, general industrial and construction stormwater permits, and Naval Air Weapons Station Point Mugu. Dischargers will have a required 25%, 50% and 100% reduction in the difference between the current loadings and the load allocations at 5, 10 and 15 years after the effective date, respectively. Achievement of required reductions will be evaluated based on progress towards BMP implementation as outlined in the urban water quality management plans (UWQMPs). If the interim reductions are not met, the dischargers will submit a report to the Executive Officer detailing why the reductions were not met and the steps that will be taken to meet the required reductions.

Region 4 Calleguas Creek-OC Pesticides, PCBs, and Siltation (Resolution 2005-010)
Effective Date - March 24, 2006

Interim Requirements

Region 4 Calleguas Creek Source: Minor NPDES point sources/WDRs TMDL Completion Date: 3 24 2006 TMDL Type:Creek	**Pollutant Stressor**	**WLA Daily Max (µg/L)**	**WLA Monthly Ave (µg/L)**
	Chlordane 1.2		0.59
	4,4-DDD 1.7		0.84
	4,4-DDE 1.2		0.59
	4,4-DDT 1.2		0.59
	Dieldrin 0.28		0.14
	PCB's 0.34		0.17
	Toxaphene 0.33		0.16

Region 4 Calleguas Creek-Calleguas Creek Toxicicity (Resolution 2005-009)
Effective Date - March 24, 2006

Minor sources include NPDES permittees other than POTWs and MS4s, discharging to the Calleguas Creek Watershed. A wasteload of 1.0 TUc is allocated to the minor point sources discharging to the Calleguas Creek Watershed. Additionally, the following wasteloads for chlorpyrifos and diazinon are established. Final WLAs apply as of March 24, 2006.

Chlorpyrifos WLAs, ug/L
Final WLA
(4 day)
0.014
Diazinon WLAs, ug/L
Final WLA
Acute and Chronic
0.10

Region 4 Calleguas Creek-Salts (Resolution 2007-016)
Effective Date – December 2, 2008

Final Dry Weather Pollutant WLA (mg/L)					
Region 4 Calleaguas Creek Source Permitted Stormwater Dischargers TMDL Completion Date: 12 2 2008 TMDL Type:Creek	**Critical Condition Flow Rate (mgd)**	**Chloride (lb/day)**	**TDS (lb/day)**	**Sulfate (lb/day)**	**Boron (lb/day)**
Simi	1.39	1738 9849 2897 12			
Las Posas	0.13	157 887 261 N/A			
Conejo	1.26	1576 8931 2627 N/A			
Camarillo	0.06	72	406 119 N/A		
Pleasant Valley (Calleguas)	0.12	150 850 250 N/A			
Pleasant Valley (Revolon)	0.25	314	1778	523	2
Dry Weather Interim Pollutant WLA (mg/L)					
	Chloride (mg/L)	**TDS (mg/L)**	**Sulfate (mg/L)**	**Boron (mg/L)**	

Simi 230.0		1720.0	1289.0	1.3
Las Posas	230	1720	1289	1.3
Conejo 230		1720	1289	1.3
Camarillo 230		1720	1289	1.3
Pleasant Valley (Calleguas)	230	1720	1289	1.3
Pleasant Valley (Revolon)	230	1720	1289	1.3

- Dry- weather waste load allocations apply in the receiving water at the base of each subwatershed. Dry weather allocations apply when instream flow rates are below the 86th percentile flow and there has been no measurable precipitation in the previous 24 hours.
- Because wet weather flows transport a large mass of salts at low concentrations, these dischargers meet water quality objectives during wet weather. No wet weather allocations are assigned.

Ballona Creek Toxic Pollutants (Resolution No. 2005-008)
Effective Date - January 11, 2006

Each storm water permittee enrolled under the general construction or industrial storm water permits will receive an individual waste load allocation on a per acre basis, based on the acreage of their facility.

Metals per Acre WLAs for Individual General Construction or Industrial Storm Water Permittees (g/yr/ac)

Cadmium	Copper	Lead	Silver	Zinc
0.1	3 4 0.1			13

Organics per Acre WLAs for Individual General Construction or Industrial Storm Water Permittees (mg/yr/ac)

Chlordane	DDTs	Total PCBs	Total PAHs
0.04	0.14	2	350

Waste load allocations will be incorporated into the State Board general permit upon renewal or into a watershed specific general construction storm water permit developed by the Regional Board.

Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the waste load allocations assigned to construction storm water permittees. Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the

effective date of the TMDL. General construction storm water permittees will be considered in compliance with waste load allocations if they implement these Regional Board approved BMPs.

All general construction permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with waste load allocations.

Region 4 Marina Del Rey Harbor Toxic Pollutants TMDL (Resolution No. 2005-012)
Effective Date March 22, 2006

Each storm water permittee enrolled under the general construction or industrial storm water permits will receive an individual waste load allocation on a per acre basis, based on the acreage of their facility.

Metals per Acre WLAs for Individual General Construction or Industrial Storm Water Permittees (g/yr/ac)

Copper	Lead	Zinc
2.3	3.1	10

Organics per acre WLAs for Individual General Construction or Industrial Storm Water Permittees (mg/yr/ac)

Chlordane	Total PCBs
0.03	1.5

Waste load allocations will be incorporated into the State Board general permit upon renewal or into a watershed specific general construction storm water permit developed by the Regional Board.

Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the waste load allocations assigned to construction storm water permittees. Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the effective date of the TMDL. General construction storm water permittees will be considered in compliance with waste load allocations if they implement these Regional Board approved BMPs.

All general construction permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of

the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with waste load allocations.

Region 4 San Gabriel River and Tributaries-Metals and Selenium (EPA-established TMDL – Effective date: 3/26/07)

Wet-weather allocations

Waterbody	Copper	Lead	Zinc
San Gabriel River Reach 2*		0.8 kg/d	
Coyote Creek**	0.513 kg/d	2.07 kg/d	3.0 kg/d

*Mass-based allocations are based on a flow of 260 cfs (daily storm volume = 6.4×10^8 liters)

**Mass-based allocations are based on a flow of 156 cfs (daily storm volume = 3.8×10^8 liters)

Dry-weather allocations

The dry-weather copper waste load allocation for general construction storm water permittees that discharge to San Gabriel Reach 1, Coyote Creek, and the Estuary is zero.

The dry-weather selenium allocation for general construction storm water permittees that discharge to San Jose Creek Reach 1 and Reach 2 is 5 µg/L (total recoverable metals).

Region 4 Upper Santa Clara River Chloride TMDL Adopted by Resolution No 2006-016 Effective Date June 12, 2008

“Other NPDES dischargers” have a chloride WLA equal to 100 mg/L.

This TMDL was revised by Resolution No 2008-012, which, when it becomes effective, includes the following conditional WLAs for “Other minor NPDES discharges”:

Reach	Concentration-based Conditional WLA for Chloride (mg/L)*
6	150 (12-month Average), 230 (Daily Maximum)
5	150 (12-month Average), 230 (Daily Maximum)
4B	117 (3-month Average), 230 (Daily Maximum)

*The conditional WLAs for chloride for all point sources shall apply only when chloride load reductions and/or chloride export projects are in operation by the Santa Clarita Valley Sanitation District according to the implementation plan for the TMDL. If these conditions are not met, WLAs shall be based on existing water quality objectives for chloride of 100 mg/L.

Region 4 The Harbor Beaches of Ventura County-Bacteria (Adopted by Resolution No. 2007-017)
Effective Date – December 18, 2008

Current and future enrollees in the Statewide Construction Activity Storm Water General Permit in the Channel Islands Harbor subwatershed are assigned WLAs of zero (0) days of allowable exceedances of the single sample limits and the rolling 30-day geometric mean limits.

Single Sample Limits are:
a. Total coliform density shall not exceed 10,000/100 ml.
b. Fecal coliform density shall not exceed 400/100 ml.
c. Enterococcus density shall not exceed 104/100 ml.
d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

Rolling 30-day Geometric Mean Limits are:
a. Total coliform density shall not exceed 1,000/100 ml.
b. Fecal coliform density shall not exceed 200/100 ml.
c. Enterococcus density shall not exceed 35/100 ml.

Los Angeles Harbor Bacteria TMDL (Adopted by Resolution No. 2004-001)
Effective Date – March 10, 2005

Current and future enrollees in the Statewide Construction Activity Storm Water General Permit in the watershed are assigned WLAs of zero (0) days of allowable exceedances of the single sample limits and the rolling 30-day geometric mean.

Single Sample Limits are:
a. Total coliform density shall not exceed 10,000/100 ml.
b. Fecal coliform density shall not exceed 400/100 ml.
c. Enterococcus density shall not exceed 104/100 ml.
d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

Rolling 30-day Geometric Mean Limits are:
a. Total coliform density shall not exceed 1,000/100 ml.
b. Fecal coliform density shall not exceed 200/100 ml.
c. Enterococcus density shall not exceed 35/100 ml.

Ballona Creek Bacteria TMDL (Adopted by Resolution No. 2006-011)
Effective Date – April 27, 2007

Current and future enrollees in the Statewide Construction Activity Storm Water General Permit in the watershed are assigned WLAs of zero (0) days of allowable exceedances of the single sample limits and the rolling 30-day geometric mean.

Single Sample Limits are:
a. Total coliform density shall not exceed 10,000/100 ml.
b. Fecal coliform density shall not exceed 400/100 ml.
c. Enterococcus density shall not exceed 104/100 ml.
d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

Rolling 30-day Geometric Mean Limits are:
a. Total coliform density shall not exceed 1,000/100 ml.
b. Fecal coliform density shall not exceed 200/100 ml.
c. Enterococcus density shall not exceed 35/100 ml.

Region 4 Resolution No. 03-009 Los Angeles River and Tributaries-Nutrients

Minor Point Sources

Waste loads are allocated to minor point sources enrolled under NPDES or WDR permits including but not limited to Tapia WRP, Whittier Narrows WRP, Los Angeles Zoo WRP, industrial and construction stormwater, and municipal storm water and urban runoff from municipal separate storm sewer systems (MS4s)

Region 4 Minor Point Sources for NPDES/WDR Permits TMDL Effective Date: 3 23 2004 TMDL Type: River	Pollutant Stressor/WLA				
	Total Ammonia (NH_3)		**Nitrate-nitrogen (NO_3-N)**	**Nitrite-nitrogen (NO_2-N)**	**NO_3-N + NO_3-N**
	1 Hr Ave mg/l	30 Day Ave mg/l	30 Day Ave mg/l		30 Day Ave mg/l
LA River Above Los Angeles-Glendale WRP (LAG)	4.7 1.6 8.0			1.0	8.0
LA River Below LAG	8.7	2.4	8.0	1.0	8.0
Los Angeles Tributaries 10.1		2.3	8.0	1.0	8.0

Malibu Creek Attachment A to Resolution No. 2004-019R-Bacteria

Effective date: 1 24 2006. The WLAs for permittees under the NPDES General Stormwater Construction Permit are zero (0) days of allowable exceedances for the single sample limits and the rolling 30-day geometric mean.

Single Sample Limits are:
a. Total coliform density shall not exceed 10,000/100 ml.
b. Fecal coliform density shall not exceed 400/100 ml.
c. Enterococcus density shall not exceed 104/100 ml.
d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

Rolling 30-day Geometric Mean Limits are:
a. Total coliform density shall not exceed 1,000/100 ml.
b. Fecal coliform density shall not exceed 200/100 ml.
c. Enterococcus density shall not exceed 35/100 ml.

Region 4 Marina del Rey Harbor, Mothers' Beach and Back Basins
Attachment A to Resolution No. 2003-012-Bacteria

Effective date: 3 18 2004. Discharges from general construction storm water permits are not expected to be a significant source of bacteria. Therefore, the WLAs for these discharges are zero (0) days of allowable exceedances for the single sample limits and the rolling 30-day geometric mean. Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the MdR Watershed will also be subject to a WLA of zero days of allowable exceedances.

Single Sample Limits are:
a. Total coliform density shall not exceed 10,000/100 ml.
b. Fecal coliform density shall not exceed 400/100 ml.
c. Enterococcus density shall not exceed 104/100 ml.
d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.

Rolling 30-day Geometric Mean Limits are:
a. Total coliform density shall not exceed 1,000/100 ml.
b. Fecal coliform density shall not exceed 200/100 ml.
c. Enterococcus density shall not exceed 35/100 ml.

Santa Clara River Nutrients TMDL (Adopted by Resolution No. 2003-011
Effective Date - March 23, 2004

Concentration-based wasteloads are allocated to municipal, industrial and construction stormwater sources regulated under NPDES permits. For stormwater permittees discharging into Reach 7, the thirty-day WLA for ammonia as nitrogen is 1.75 mg/L and the one-hour WLA for ammonia as nitrogen is 5.2 mg/L; the thirty-day average WLA for nitrate plus nitrite as nitrogen is 6.8 mg/L. For stormwater permittees discharging into Reach 3, the thirty-day WLA for ammonia as nitrogen is 2.0 mg/L and the one-hour WLA for ammonia as nitrogen is 4.2 mg/L; the thirty-day average WLA for nitrate plus nitrite nitrogen is 8.1 mg/L.

Region 8 RESOLUTION NO. R8-2007- 0024

Total Maximum Daily Loads (TMDLs) for San Diego Creek,
Upper and Lower Newport Bay, Orange County, California

Region 8 NPDES Construction Permit TMDL Completion Date: 1 24 1995 TMDL Type: River. Cr, Bay	Organochlorine Compounds							
	Total DDT		**Chlordane**		**Total PCBs**		**Toxaphene**	
	g/day	g/yr	g/day	g/yr	g/day	g/yr	g/day	g/yr
San Diego Creek	.27	99.8	**.18***	**64.3***	**.09***	**31.5***	.004	1.5
Upper Newport Bay	.11	40.3	.06	23.4	.06	23.2	**X**	**X**
Lower Newport Bay	.04	14.9	.02	8.6	.17	60.7	**X**	**X**

*Red= Informational WLA only, not for enforcement purposes

Organochlorine Compounds TMDLs Implementation Tasks and Schedule

Regional Board staff shall develop a SWPPP Improvement Program that identifies the Regional Board's expectations with respect to the content of SWPPPs, including documentation regarding the selection and implementation of BMPs, and a sampling and analysis plan. The Improvement Program shall include specific guidance regarding the development and implementation of monitoring plans, including the constituents to be monitored, sampling frequency and analytical protocols. The SWPPP Improvement Program shall be completed by (*the date of OAL approval of this BPA*). ***No later than two months*** from completion of the Improvement Program, Board staff shall assure that the requirements of the Program are communicated to interested parties, including dischargers with existing authorizations under the General Construction Permit. Existing, authorized dischargers shall revise their project SWPPPs as needed to address the Program requirements as soon as possible but ***no later than (three months of completion of the SWPPP Improvement Program)***. Applicable SWPPPs that do not adequately address the Program requirements shall be considered inadequate and enforcement by the Regional Board shall proceed accordingly. The Caltrans and Orange County MS4 permits shall be revised as needed to assure that the permittees communicate the Regional Board's SWPPP expectations, based on the SWPPP Improvement Program, with the Standard Conditions of Approval.

APPENDIX 5:
Glossary

Active Areas of Construction
All areas subject to land surface disturbance activities related to the project including, but not limited to, project staging areas, immediate access areas and storage areas. All previously active areas are still considered active areas until final stabilization is complete. [The construction activity Phases used in this General Permit are the Preliminary Phase, Grading and Land Development Phase, Streets and Utilities Phase, and the Vertical Construction Phase.]

Active Treatment System (ATS)
A treatment system that employs chemical coagulation, chemical flocculation, or electrocoagulation to aid in the reduction of turbidity caused by fine suspended sediment.

Acute Toxicity Test
A chemical stimulus severe enough to rapidly induce a negative effect; in aquatic toxicity tests, an effect observed within 96 hours or less is considered acute.

Air Deposition
Airborne particulates from construction activities. .

Approved Signatory
A person who has legal authority to sign, certify, and electronically submit Permit Registration Documents and Notices of Termination on behalf of the Legally Responsible Person.

Beneficial Uses
As defined in the California Water Code, beneficial uses of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Best Available Technology Economically Achievable (BAT)
As defined by USEPA, BAT is a technology-based standard established by the Clean Water Act (CWA) as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Best Conventional Pollutant Control Technology (BCT)

As defined by USEPA, BCT is a technology-based standard for the discharge from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended sediment (TSS), fecal coliform, pH, oil and grease.

Best Professional Judgment (BPJ)
The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

Best Management Practices (BMPs)
BMPs are scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Chain of Custody (COC)
Form used to track sample handling as samples progress from sample collection to the analytical laboratory. The COC is then used to track the resulting analytical data from the laboratory to the client. COC forms can be obtained from an analytical laboratory upon request.

Coagulation
The clumping of particles in a discharge to settle out impurities, often induced by chemicals such as lime, alum, and iron salts.

Common Plan of Development
Generally a contiguous area where multiple, distinct construction activities may be taking place at different times under one plan. A plan is generally defined as any piece of documentation or physical demarcation that indicates that construction activities may occur on a common plot. Such documentation could consist of a tract map, parcel map, demolition plans, grading plans or contract documents. Any of these documents could delineate the boundaries of a common plan area. However, broad planning documents, such as land use master plans, conceptual master plans, or broad-based CEQA or NEPA documents that identify potential projects for an agency or facility are not considered common plans of development.

Daily Average Discharge
The discharge of a pollutant measured during any 24-hour period that reasonably represents a calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged during the day. For pollutants with limitations expressed in other units of measurement (e.g., concentration) the daily discharge is calculated as the average measurement of the pollutant

throughout the day (40 CFR 122.2). In the case of pH, the pH must first be converted from a log scale.

Debris
Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste.

Direct Discharge
A discharge that is routed directly to waters of the United States by means of a pipe, channel, or ditch (including a municipal storm sewer system), or through surface runoff.

Discharger
The Legally Responsible Person (see definition) or entity subject to this General Permit.

Dose Rate (for ATS)
In exposure assessment, dose (e.g. of a chemical) per time unit (e.g. mg/day), sometimes also called dosage.

Drainage Area
The area of land that drains water, sediment, pollutants, and dissolved materials to a common outlet.

Effluent
Any discharge of water by a discharger either to the receiving water or beyond the property boundary controlled by the discharger.

Effluent Limitation
Any numeric or narrative restriction imposed on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the United States, the waters of the contiguous zone, or the ocean.

Erosion
The process, by which soil particles are detached and transported by the actions of wind, water, or gravity.

Erosion Control BMPs
Vegetation, such as grasses and wildflowers, and other materials, such as straw, fiber, stabilizing emulsion, protective blankets, etc., placed to stabilize areas of disturbed soils, reduce loss of soil due to the action of water or wind, and prevent water pollution.

Field Measurements
Testing procedures performed in the field with portable field-testing kits or meters.

Final Stabilization
All soil disturbing activities at each individual parcel within the site have been completed in a manner consistent with the requirements in this General Permit.

First Order Stream
Stream with no tributaries.

Flocculants
Substances that interact with suspended particles and bind them together to form flocs.

Good Housekeeping BMPs
BMPs designed to reduce or eliminate the addition of pollutants to construction site runoff through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

Grading Phase (part of the Grading and Land Development Phase)
Includes reconfiguring the topography and slope including; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; land form grading; and stockpiling of select material for capping operations.

Hydromodification
Hydromodification is the alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources. Hydromodification can cause excessive erosion and/or sedimentation rates, causing excessive turbidity, channel aggradation and/or degradation.

Identified Organisms
Organisms within a sub-sample that is specifically identified and counted.

Inactive Areas of Construction
Areas of construction activity that are not active and those that have been active and are not scheduled to be re-disturbed for at least 14 days.

Index Period
The period of time during which bioassessment samples must be collected to produce results suitable for assessing the biological integrity of streams and rivers. Instream communities naturally vary over the course of a year,and sampling during the index period ensures that samples are collected during a time frame when communities are stable so that year-to-year consistency is obtained. The index period approach provides a cost-effective alternative to year-round sampling. Furthermore, sampling within the appropriate index period will yield results that are comparable to the assessment thresholds or criteria for a given region, which are established for the same index period. Because index

periods differ for different parts of the state, it is essential to know the index period for your area.

K Factor
The soil erodibility factor used in the Revised Universal Soil Loss Equation (RUSLE). It represents the combination of detachability of the soil, runoff potential of the soil, and the transportability of the sediment eroded from the soil.

Legally Responsible Person
The person who possesses the title of the land or the leasehold interest of a mineral estate upon which the construction activities will occur for the regulated site. For linear underground/overhead projects, it is in the person in charge of the utility company, municipality, or other public or private company or agency that owns or operates the LUP.

Likely Precipitation Event
Any weather pattern that is forecasted to have a 50% or greater chance of producing precipitation in the project area. The discharger shall obtain likely precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast).

Maximum Allowable Threshold Concentration (MATC)
The allowable concentration of residual, or dissolved, coagulant/flocculant in effluent. The MATC shall be coagulant/flocculant-specific, and based on toxicity testing conducted by an independent, third-party laboratory. A typical MATC would be:

The MATC is equal to the geometric mean of the NOEC (No Observed Effect Concentration) and LOEC (Lowest Observed Effect Concentration) Acute and Chronic toxicity results for most sensitive species determined for the specific coagulant. The most sensitive species test shall be used to determine the MATC.

Natural Channel Evolution
The physical trend in channel adjustments following a disturbance that causes the river to have more energy and degrade or aggrade more sediment. Channels have been observed to pass through 5 to 9 evolution types. Once they pass though the suite of evolution stages, they will rest in a new state of equilibrium.

Non-Storm Water Discharges
Discharges are discharges that do not originate from precipitation events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

Non-Visible Pollutants

Pollutants associated with a specific site or activity that can have a negative impact on water quality, but cannot be seen though observation (ex: chlorine). Such pollutants being discharged are not authorized.

Numeric Action Level (NAL)
Level is used as a warning to evaluate if best management practices are effective and take necessary corrective actions. Not an effluent limit.

Original Sample Material
The material (i.e., macroinvertebrates, organic material, gravel, etc.) remaining after the subsample has been removed for identification.

pH
Unit universally used to express the intensity of the acid or alkaline condition of a water sample. The pH of natural waters tends to range between 6 and 9, with neutral being 7. Extremes of pH can have deleterious effects on aquatic systems.

Post-Construction BMPs
Structural and non-structural controls which detain, retain, or filter the release of pollutants to receiving waters after final stabilization is attained.

Preliminary Phase (Pre-Construction Phase - Part of the Grading and Land Development Phase)
Construction stage including rough grading and/or disking, clearing and grubbing operations, or any soil disturbance prior to mass grading.

Project

Qualified SWPPP Developer
Individual who is authorized to develop and revise SWPPPs.

Qualified SWPPP Practitioner
Individual assigned responsibility for non-storm water and storm water visual observations, sampling and analysis, and responsibility to ensure full compliance with the permit and implementation of all elements of the SWPPP, including the preparation of the annual compliance evaluation and the elimination of all unauthorized discharges.

Qualifying Rain Event
Any event that produces 0.5 inches or more precipitation with a 48 hour or greater period between rain events.

R Factor
Erosivity factor used in the Revised Universal Soil Loss Equation (RUSLE). The R factor represents the erosivity of the climate at a particular location. An

average annual value of R is determined from historical weather records using erosivity values determined for individual storms. The erosivity of an individual storm is computed as the product of the storm's total energy, which is closely related to storm amount, and the storm's maximum 30-minute intensity.

Rain Event Action Plan (REAP)
Written document, specific for each rain event, that when implemented is designed to protect all exposed portions of the site within 48 hours of any likely precipitation event.

Remaining Sub sampled Material
The material (e.g., organic material, gravel, etc.) that remains after the organisms to be identified have been removed from the subsample for identification. (Generally, no macroinvertebrates are present in the remaining subsampled material, but the sample needs to be checked and verified using a complete Quality Assurance (QA) plan)

Routine Maintenance
Activities intended to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Runoff Control BMPs
Measures used to divert runon from offsite and runoff within the site.

Run-on
Discharges that originate offsite and flow onto the property of a separate project site.

Revised Universal Soil Loss Equation (RUSLE)
Empirical model that calculates average annual soil loss as a function of rainfall and runoff erosivity, soil erodibility, topography, erosion controls, and sediment controls.

Sampling and Analysis Plan
Document that describes how the samples will be collected, under what conditions, where and when the samples will be collected, what the sample will be tested for, what test methods and detection limits will be used, and what methods/procedures will be maintained to ensure the integrity of the sample during collection, storage, shipping and testing (i.e., quality assurance/quality control protocols).

Sediment
Solid particulate matter, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Sedimentation
Process of deposition of suspended matter carried by water, wastewater, or other liquids, by gravity. It is usually accomplished by reducing the velocity of the liquid below the point at which it can transport the suspended material.

Sediment Control BMPs
Practices that trap soil particles after they have been eroded by rain, flowing water, or wind. They include those practices that intercept and slow or detain the flow of storm water to allow sediment to settle and be trapped (e.g., silt fence, sediment basin, fiber rolls, etc.).

Settleable Solids (SS)
Solid material that can be settled within a water column during a specified time frame. It is typically tested by placing a water sample into an Imhoff settling cone and then allowing the solids to settle by gravity for a given length of time. Results are reported either as a volume (mL/L) or a mass (mg/L) concentration.

Sheet Flow
Flow of water that occurs overland in areas where there are no defined channels where the water spreads out over a large area at a uniform depth.

Site

Soil Amendment
Any material that is added to the soil to change its chemical properties, engineering properties, or erosion resistance that could become mobilized by storm water.

Streets and Utilities Phase
Construction stage including excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities including fire hydrants, public sanitary sewer systems, storm sewer system and/or other drainage improvements.

Structural Controls
Any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution

Suspended Sediment Concentration (SSC)
The measure of the concentration of suspended solid material in a water sample by measuring the dry weight of all of the solid material from a known volume of a collected water sample. Results are reported in mg/L.

Total Suspended Solids (TSS)
The measure of the suspended solids in a water sample includes inorganic substances, such as soil particles and organic substances, such as algae,

aquatic plant/animal waste, particles related to industrial/sewage waste, etc. The TSS test measures the concentration of suspended solids in water by measuring the dry weight of a solid material contained in a known volume of a sub-sample of a collected water sample. Results are reported in mg/L.

Toxicity
The adverse response(s) of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies.

Turbidity
The cloudiness of water quantified by the degree to which light traveling through a water column is scattered by the suspended organic and inorganic particles it contains. The turbidity test is reported in Nephelometric Turbidity Units (NTU) or Jackson Turbidity Units (JTU).

Vertical Construction Phase
The Build out of structures from foundations to roofing, including rough landscaping.

Waters of the United States
Generally refers to surface waters, as defined by the federal Environmental Protection Agency in 40 C.F.R. § 122.2.[1]

Water Quality Objectives (WQO)
Water quality objectives are defined in the California Water Code as limits or levels of water quality constituents or characteristics, which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

[1] The application of the definition of "waters of the United States" may be difficult to determine; there are currently several judicial decisions that create some confusion. If a landowner is unsure whether the discharge must be covered by this General Permit, the landowner may wish to seek legal advice.

APPENDIX 6:
Acronym List

ASBS	Areas of Special Biological Significance
ASTM	American Society of Testing and Materials; Standard Test Method for Particle-Size Analysis of Soils
ATS	Active Treatment System
BASMAA	Bay Area Storm water Management Agencies Association
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BPJ	Best Professional Judgment
CAFO	Confined Animal Feeding Operation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGP	NPDES General Permit for Storm Water Discharges Associated with Construction Activities
CIWQS	California Integrated Water Quality System
CKD	Cement Kiln Dust
COC	Chain of Custody
CPESC	Certified Professional in Erosion and Sediment Control
CPSWQ	Certified Professional in Storm Water Quality
CSMP	Construction Site Monitoring Program
CTB	Cement Treated Base
CTR	California Toxics Rule
CWA	Clean Water Act
CWC	California Water Code
CWP	Center for Watershed Protection
DADMAC	Diallyldimethyl-ammonium chloride
DDNR	Delaware Department of Natural Resources
DFG	Department of Fish and Game
DHS	Department of Health Services
DWQ	Division of Water Quality
EC	Electrical Conductivity
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
ESC	Erosion and Sediment Control
HSPF	Hydrologic Simulation Program Fortran
JTU	Jackson Turbidity Units
LID	Low Impact Development
LOEC	Lowest Observed Effect Concentration
LRP	Legally Responsible Person
LUP	Linear Underground/Overhead Projects

MATC	Maximum Allowable Threshold Concentration
MDL	Method Detection Limits
MRR	Monitoring and Reporting Requirements
MS4	Municipal Separate Storm Sewer System
MUSLE	Modified Universal Soil Loss Equation
NAL	Numeric Action Level
NEL	Numeric Effluent Limitation
NICET	National Institute for Certification in Engineering Technologies
NOAA	National Oceanic and Atmospheric Administration
NOEC	No Observed Effect Concentration
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NTR	National Toxics Rule
NTU	Nephelometric Turbidity Units
O&M	Operation and Maintenance
PAC	Polyaluminum chloride
PAM	Polyacrylamide
PASS	Polyaluminum chloride Silica/sulfate
POC	Pollutants of Concern
PoP	Probability of Precipitation
POTW	Publicly Owned Treatment Works
PRDs	Permit Registration Documents
PWS	Planning Watershed
QAMP	Quality Assurance Management Plan
QA/QC	Quality Assurance/Quality Control
REAP	Rain Event Action Plan
Regional Board	Regional Water Quality Control Board
ROWD	Report of Waste Discharge
RUSLE	Revised Universal Soil Loss Equation
RW	Receiving Water
SMARTS	Storm water Multi Application Reporting and Tracking System
SS	Settleable Solids
SSC	Suspended Sediment Concentration
SUSMP	Standard Urban Storm Water Mitigation Plan
SW	Storm Water
SWARM	Storm Water Annual Report Module
SWAMP	Surface Water Ambient Monitoring Program
SWMM	Storm Water Management Model
SWMP	Storm Water Management Program
SWPPP	Storm Water Pollution Prevention Plan
TC	Treatment Control
TDS	Total Dissolved Solids

TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USACOE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirements
WLA	Waste Load Allocation
WET	Whole Effluent Toxicity
WRCC	Western Regional Climate Center
WQBEL	Water Quality Based Effluent Limitation
WQO	Water Quality Objective
WQS	Water Quality Standard

APPENDIX 7:
State and Regional Water Resources Control Board Contacts

NORTH COAST REGION (1)
5550 Skylane Blvd, Ste. A
Santa Rose, CA 95403
(707) 576-2220 FAX: (707)523-0135

SAN FRANCISCO BAY REGION (2)
1515 Clay Street, Ste. 1400
Oakland, CA 94612
(510) 622-2300 FAX: (510) 622-2640

CENTRAL COAST REGION (3)
895 Aerovista Place, Ste 101
San Luis Obispo, CA 93401
(805) 549-3147 FAX: (805) 543-0397

LOS ANGELES REGION (4)
320 W. 4th Street, Ste. 200
Los Angeles, CA 90013
(213) 576-6600 FAX: (213) 576-6640

CENTRAL VALLEY REGION (5S)
11020 Sun Center Dr., #200
Rancho Cordova, CA 95670-6114
(916) 464-3291 FAX: (916) 464-4645

FRESNO BRANCH OFFICE (5F)
1685 E St.
Fresno, CA 93706
(559) 445-5116 FAX: (559) 445-5910

REDDING BRANCH OFFICE (5R)
415 Knollcrest Drive, Ste. 100
Redding, CA 96002
(530) 224-4845 FAX: (530) 224-4857

LAHONTAN REGION (6 SLT)
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150
(530) 542-5400 FAX: (530) 544-2271

VICTORVILLE OFFICE (6V)
14440 Civic Drive, Ste. 200
Victorville, CA 92392-2383
(760) 241-6583 FAX: (760) 241-7308

COLORADO RIVER BASIN REGION (7)
73-720 Fred Waring Dr., Ste. 100
Palm Desert, CA 92260
(760) 346-7491 FAX: (760) 341-6820

SANTA ANA REGION (8)
3737 Main Street, Ste. 500
Riverside, CA 92501-3339
Phone (951) 782-4130 FAX: (951) 781-6288

SAN DIEGO REGION (9)
9174 Sky Park Court, Ste. 100
San Diego, CA 92123-4340
(858) 467-2952 FAX: (858) 571-6972

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PO Box 1977
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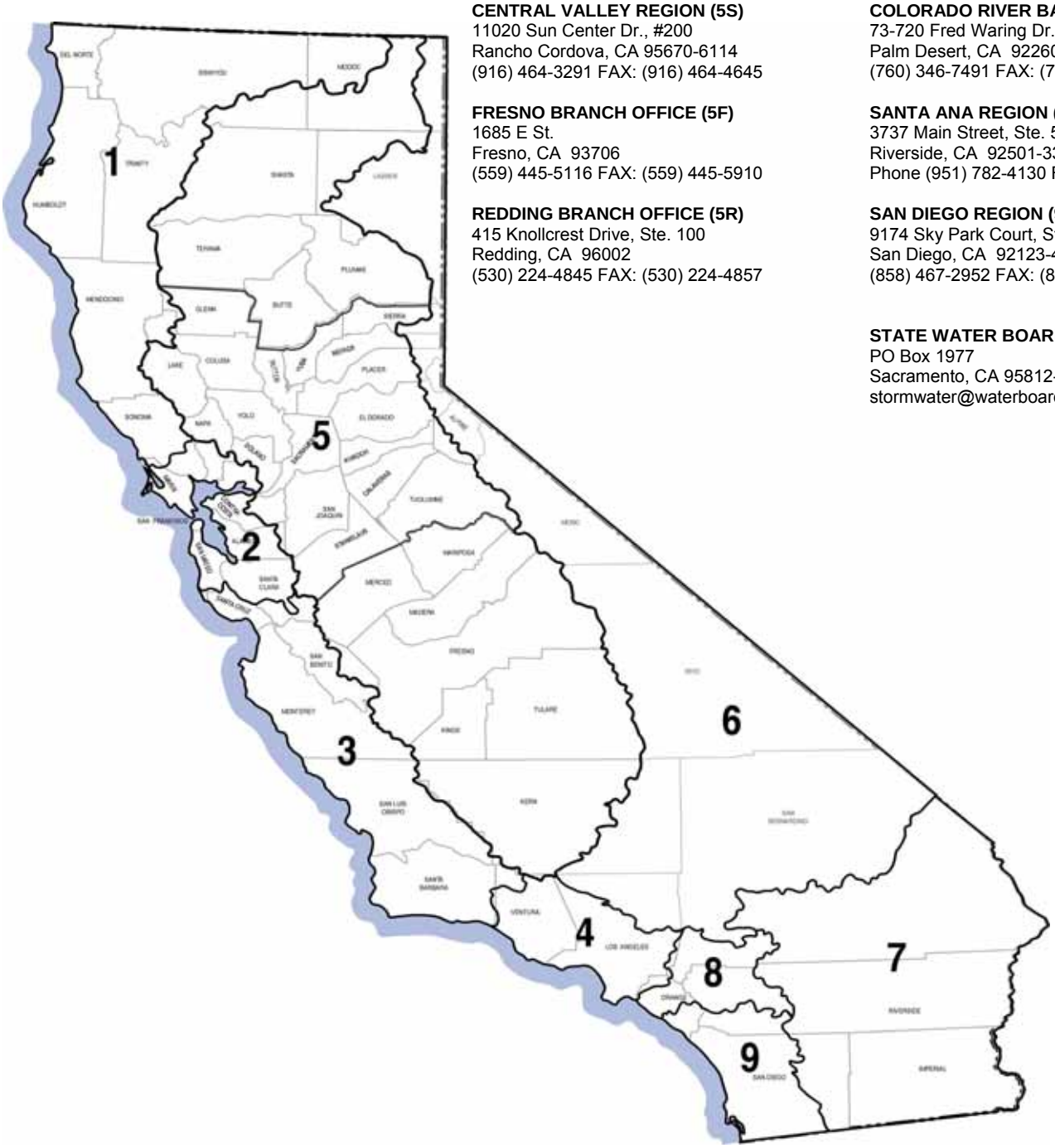
stormwater@waterboards.ca.gov



Linda S. Adams
Secretary for Environmental Protection

State Water Resources Control Board

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Arnold Schwarzenegger
Governor

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES

ORDER NO. 2010-0014-DWQ
NPDES NO. CAS000002

Order No. 2009-0009-DWQ was adopted by the State Water Resources Control Board on:	**September 2, 2009**
Order No. 2009-0009-DWQ became effective on:	**July 1, 2010**
Order No. 2009-0009-DWQ shall expire on:	**September 2, 2014**
This Order, which amends Order No. 2009-0009-DWQ, was adopted by the State Water Resources Control Board on:	**November 16, 2010**
This Order shall become effective on:	**February 14, 2011**

IT IS HEREBY ORDERED that this Order amends Order No. 2009-0009-DWQ. Additions to Order No. 2009-0009-DWQ are reflected in blue-underline text and deletions are reflected in red-strikeout text.

IT IS FURTHER ORDERED that staff are directed to prepare and post a conformed copy of Order No. 2009-0009-DWQ incorporating the revisions made by this Order.

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on **November 16, 2010.**

AYE: Chairman Charles R. Hoppin
Vice Chair Frances Spivy-Weber
Board Member Arthur G. Baggett, Jr.
Board Member Tam M. Doduc

NAY: None

ABSENT: None

ABSTAIN: None

Jeanine Townsend

Jeanine Townsend
Clerk to the Board

FINAL ADOPTED CHANGES TO
Order No. 2009-0009-DWQ
November 16, 2010

Fact Sheet pages 11-12 Obtaining and Terminating Permit Coverage

The appropriate Legally Responsible Person (LRP) must obtain coverage under this General Permit~~, except in two limited circumstances. First, where the construction of pipelines, utility lines, fiber-optic cables, or other linear underground/overhead projects will occur across several properties, the utility company, municipality, or other public or private company or agency that owns or operates the linear underground/overhead project is responsible for obtaining coverage under the General Permit. Second, where there is a lease of a mineral estate (oil, gas, geothermal, aggregate, precious metals, and/or industrial metals), the lessee is responsible for obtaining coverage under the General Permit.~~ To obtain coverage, the LRP or the LRP's Approved Signatory ~~or other entity described above~~ must file Permit Registration Documents (PRDs) prior to the commencement of construction activity. Failure to obtain coverage under this General Permit for storm water discharges to waters of the United States is a violation of the CWA and the California Water Code.

Section II(A)(2) Conditions for Permit Coverage, page 14

2. The ~~utility company, municipality, or other public or private company or agency that owns or operates the linear underground/overhead project~~ Legally Responsible Person is responsible for obtaining coverage under the General Permit where the construction of pipelines, utility lines, fiber-optic cables, or other linear underground/overhead projects will occur across several properties unless the LUP construction activities are covered under another construction storm water permit.

Section II(C)(4) Conditions for Permit Coverage, page 18

4. When an LRP with active General Permit coverage transfers its LRP status to another person or entity that qualifies as an LRP, the existing LRP shall inform the new LRP of the General Permit's requirements. ~~When an LRP owns property with active General Permit coverage, and the LRP sells the property, or a parcel thereof, to another person, that person shall become an LRP with respect to whatever parcel was sold. The existing LRP shall inform the new LRP of the General Permit's requirements~~. In order for the new LRP to continue the construction-activity on its parcel of property, the new LRP, or the new LRP's approved signatory, must submit PRDs in accordance with this General Permit's requirements.

Section IV(I) – Special Provisions pages 24-25

I. Electronic Signature and Certification Requirements

1. All Permit Registration Documents (PRDs) and Notices of Terminations (NOTs) shall be electronically signed, certified, and submitted via SMARTS to the State Water Board. Either the Legally Responsible Person (LRP), as defined in Appendix 5 – Glossary, or a person legally authorized to sign and certify PRDs and NOTs on behalf of the LRP (the LRP's Approved Signatory, as defined in Appendix 5 - Glossary) must submit all information electronically via SMARTS.

   a. The LRP's Approved Signatory must be one of the following:

      i. For a corporation: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

      ii. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

      iii. For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA);

      iv. For the military: Any military officer who has been designated.

      v. For a public university: An authorized university official

b. 2. Changes to Authorization. If an aApproved sSignatory's authorization is no longer accurate, a new authorization satisfying the requirements of paragraph (a) of this section must be submitted via SMARTS prior to or together with any reports, information or applications to be signed by an aApproved sSignatory.

2. 3. All Annual Reports, or other information required by the General Permit (other than PRDs and NOTs) or requested by the Regional Water Board, State Water Board, U.S. EPA, or local storm water management agency shall be certified and submitted by the LRP or the LRP's aApproved sSignatory as described above.

Attachment A, Section E(9) - Special Provisions pages 10-11

8. Electronic Signature and Certification Requirements

a. All Permit Registration Documents (PRDs) and Notices of Termination (NOTs) shall be electronically signed, certified, and submitted via SMARTS to the State Water Board. Either the Legally Responsible Person (LRP), as defined in Appendix 5-Glossary, or a person legally authorized to sign and certify PRDs and NOTs on behalf of the LRP (the LRP's Approved Signatory, as defined in Appendix 5-Glossary) must submit all information electronically via SMARTS. ~~For Linear Underground/Overhead projects, the Legally Responsible Person is the person in charge of the utility company, municipality, or other public or private company or agency that owns or operates the LUP. The LRP's Approved Signatory must be one of the following:~~

~~i For a corporation: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:~~

~~(1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or~~

~~(2) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;~~

~~ii For a partnership or sole proprietorship: a general partner or the proprietor, respectively; or~~

~~iii For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).~~

b. Changes to Authorization. If an ~~a~~Approved ~~s~~Signatory's authorization is no longer accurate, a new authorization satisfying the requirements of paragraph (a) of this section must be submitted via SMARTS prior to or together with any reports, information or applications to be signed by an ~~a~~Approved ~~s~~Signatory.

c. All SWPPP revisions, annual reports, or other information required by the General Permit (other than PRDs and NOTs) or requested by the Regional Water Board, State Water Board, USEPA, or local storm water management agency shall be certified and submitted by the LRP or the LRP's ~~a~~Approved ~~s~~Signatory ~~as described above~~.

Appendix 5 – Glossary

Approved Signatory
A person who has been authorized by the Legally Responsible Person ~~legal authority~~ to sign, certify, and electronically submit Permit Registration Documents, ~~and~~ Notices of Termination ~~on behalf of the Legally Responsible Person~~, and any other documents, reports, or information required by the General Permit, the State or Regional Water Board, or U.S. EPA. The Approved Signatory must be one of the following:

1. For a corporation or limited liability company: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation or limited liability company; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

3. For a municipality, State, Federal, or other public agency: a principl~~e~~al executive officer, ranking elected official, city manager, council president, or any other authorized public employee with managerial responsibility over the construction or land disturbance project (including, but not limited to, project manager, project superintendent, or resident engineer);

4. For the military: any military officer or Department of Defense civilian, acting in an equivalent capacity to a military officer, who has been designated;

5. For a public university: an authorized university official;

6. For an individual: the individual, because the individual acts as both the Legally Responsible Person and the Approved Signatory; or

7. For any type of entity not listed above (e.g. trusts, estates, receivers): an authorized person with managerial authority over the construction or land disturbance project.

Legally Responsible Person

The Legally Responsible Person (LRP) will typically be the project proponent. The categories of persons or entities that are eligible to serve as the LRP are set forth below. For any construction or land disturbance project where multiple persons or entities are eligible to serve as the LRP, those persons or entities shall select a single LRP. In exceptional circumstances, a person or entity that qualifies as the LRP may provide written authorization to another person or entity to serve as the LRP. In such a circumstance, the person or entity that provides the authorization retains all responsibility for compliance with the General Permit. Except as provided in category 2(d), a contractor who does not satisfy the requirements of any of the categories below is not qualified to be an LRP.

The following persons or entities may serve as a LRP:

1. ~~The~~ A person, company, agency, or other entity that possesses a real property interest (including, but not limited to, fee simple ownership, easement, leasehold, or other rights of way) in the land ~~who possesses the title of the land or the leasehold interest of a mineral estate~~ upon which the construction or land disturbance activities will occur for the regulated site. ~~For linear underground/overhead projects, it is in the person in charge of the utility company, municipality, or other public or private company or agency that owns or operates the LUP.~~

2. In addition to the above, the following persons or entities may also serve as an LRP:

   a. For linear underground/overhead projects, the utility company, municipality, or other public or private company or agency that owns or operates the LUP;

   b. For land controlled by an estate or similar entity, the person who has day-to-day control over the land (including, but not limited to, a bankruptcy trustee, receiver, or conservator);

   c. For pollution investigation and remediation projects, any potentially responsible party that has received permission to conduct the project from the holder of a real property interest in the land; or

   d. For U.S. Army Corp of Engineers projects, the U.S. Army Corps of Engineers may provide written authorization to its bonded contractor to serve as the LRP, provided, however, that the U.S. Army Corps of Engineers is also responsible for compliance with the general permit, as authorized by the Clean Water Act or the Federal Facilities Compliance Act.