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Arnold Schwarzenegger
Governor

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

ORDER NO.
NPDES NO.

This Order was adopted by the State Water Resources Control Board on:	<Adoption Date>
This Order shall become effective on: (100 days after adoption if USEPA has no objection, or upon withdrawal of that objection.)	<Effective Date>
This Order shall expire on:	<Expiration Date>

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, Song Her, 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 <Adoption Date>.

AYE:

NO:

ABSENT:

ABSTAIN:

Song Her
Clerk to the Board

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**STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2007 - XX - DWQ
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT NO. CAR000002**

**WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION
ACTIVITY**

I. Findings

The State Water Resources Control Board (State Water Board) finds that:

1. The primary storm water pollutant at construction sites is sediment. Excess sediment can cloud the water, reducing 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 grease.
2. 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)). Federal regulations for controlling pollutants in storm water runoff discharges are promulgated by the U.S. Environmental Protection Agency (USEPA) (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. 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.
3. 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 separate storm sewer systems or other watercourses within their jurisdictions.

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4. The 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 Porter-Cologne Water Quality Control Act (California Water Code).
5. Pursuant to 40 CFR Part 131.12 and State Water Board Resolution No. 68-16¹, which incorporates the requirements of part 131.2 where applicable, the State Water Board considered anti-degradation, and finds that discharges in compliance with this General Permit are consistent with those provisions. Compliance with this General Permit will result in improvements in water quality.
6. This General Permit serves as an NPDES permit in compliance with CWA §402 and shall take effect 100 days after adoption by the State Water Board provided the Regional Administrator of the USEPA has no objection. If the USEPA Regional Administrator objects to its issuance, the General Permit shall not become effective until such objection is withdrawn.
7. 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.
8. This General Permit does not authorize discharges of fill or dredged material regulated by the U.S. Army Corps of Engineers under CWA Section 404 and does not constitute a waiver of water quality certification under CWA Section 401.
9. Modification of a site's runoff and sediment supply and transport characteristics (hydromodification) is a significant cause of degradation of the beneficial uses established for water bodies in California. Construction activities can cause hydromodification, and its effects can occur both during the construction phase and after construction is complete. Dischargers can avoid hydromodification due to such activities through better site design and construction activity practices. This General Permit requires all dischargers to maintain pre-development hydrologic characteristics, such as flow patterns, and surface retention and recharge rates, in order to minimize post-development impacts to offsite water bodies.
10. The State Water Board convened a 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 (ALs) are technically feasible for construction storm water

¹ Resolution No. 68-16 generally requires that existing water quality be maintained unless degradation is justified based on specific findings.

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discharges, however the panel had several reservations and concerns. The panel also concluded that numeric effluent limitations (NELs) are feasible for discharges from construction sites that utilize an Active Treatment System (ATS)². The State Water Board incorporated suggestions from the expert panel report into this General Permit, which includes ALs for pH, turbidity and Total Petroleum Hydrocarbons (TPH) and includes NELs for pH and for ATS discharges.

11. 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 a NEL for pH because it is feasible, regardless of storm size event, for the discharger to isolate, contain and, if necessary, treat storm water that comes in to contact with any of these construction materials. The pH NEL shall become effective 18 months after the adoption of this General Permit, unless the State Water Board finds prior to that time that a NEL for pH in storm water discharges from construction sites is not feasible at that time. Furthermore, this General Permit may be modified to include NELs for other parameters if the State Water Board finds that they are both feasible and necessary to protect receiving water quality.
12. The USEPA Phase II rule provided the State of California with the authority to waive NPDES coverage for small construction projects (between 1 and 5 acres in size) that also have a low risk of erosivity (determined by any site with a calculated "R Value" less than 5). The State Water Board will not waive coverage for these projects because they do pose some risk to water quality, but small construction projects with an "R Value" less than 5 during the clearing and mass grading phase of their project may be considered "low risk" and are subject to fewer requirements in the General Permit.
13. This General Permit establishes a turbidity AL of 500 NTU based on an analysis of data representing background conditions and actual construction site characteristics. The data for actual turbidity values shows that typical construction site runoff in California ranges from 15 NTU to 16,000 NTU (<http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-055.pdf>). Other sources indicate similar range of values. The USEPA estimated sediment loads as part of their effluent limitation guidelines for construction activities. These estimates also equate to approximately 500 NTU to 15,000 NTU.
14. This General Permit establishes ALs and NELs in order to ensure that dischargers apply appropriate technologies to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from construction-

² An ATS is a treatment system, which employs chemical coagulation, chemical flocculation, or electrocoagulation to aid in the reduction of turbidity caused by fine suspended sediment

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related storm water discharges. Low risk projects are exempt from the AL and NEL requirements in this General Permit. The ALs in this General Permit are not directly enforceable and do not constitute NELs.

15. Should it be determined that a pollutant level in a construction-related storm water or non-storm water discharge exceeds an AL, the discharger shall immediately implement additional Best Management Practices³ (BMPs) and revise their Storm Water Pollution Prevention Plan (SWPPP) as necessary to prevent pollutants in storm water or non-storm water discharges, or to substantially reduce pollutants consistently below ALs.
16. Should monitoring results indicate that a construction-related storm water or non-storm water discharge results in a NEL violation, the discharger shall electronically enter the analytical results into the Storm Water Annual Reporting Module (SWARM) and comply with any Regional Water Board enforcement action.
17. Receiving water monitoring for pH and turbidity are required for all sites meeting high risk criteria and for any site where consecutive effluent samples exceed ALs for any one of these parameters (pH, turbidity or TPH) at a single effluent sampling location.
18. This General Permit requires the submittal of an Action Level Exceedance Evaluation Report (ALEER) (Section IX.B.2.) when discharges of storm water or non-storm water result in two consecutive AL exceedances for any one parameter (pH, turbidity or TPH) at a single effluent sampling location.
19. Soils with more than 10% (by weight) of their 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, disruption of such 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) can prevent or reduce the release of fine particles from construction sites. Therefore, dischargers whose sites contain such soils must implement either an ATS or, alternatively, the source control measures specified in Section G to ensure that these fine particles are not released into receiving waters.
20. In many parts of California, rain events can occur at any time of the year. Therefore a Rain Event Action Plan (REAP) (Section XI) is necessary to ensure that active construction sites have adequate erosion and sediment controls

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.

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implemented prior to the onset of a storm event, even if construction is planned only during the “dry” season.

21. The risk of accelerated erosion and sedimentation from wind and water depends on a number of factors, including proximity to receiving water bodies, climate, cover, topography, soil type, and project size. The General Permit requires dischargers to identify site erosion and sedimentation risk and to take specific actions corresponding to the identified risk level.
22. Construction activity projects should be set back from streams and wetlands to reduce risks of water quality impacts both during and after construction. Although this General Permit does not prescribe setbacks, it recognizes the risk to natural stream stability and habitat function in the Sediment Transport Risk Worksheet (Attachment F). This General Permit intends for this risk calculation mechanism to facilitate compliance with Regional Water Board and local agency setback requirements, and to encourage greater voluntary setbacks wherever practicable.
23. 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 **mm/dd/yyyy**. The State Water Board has prepared written responses to all significant comments.
24. This General Permit regulates pollutants in discharges of storm water associated with construction activity (storm water discharges) to surface waters from construction projects that disturb one or more acres or are part of a common plan of development or sale that disturbs more than one acre.
25. This General Permit recognizes five distinct stages of construction activities. Each stage has activities that can result in different water quality impacts from different water quality pollutants. The primary pollutant of concern throughout all stages is sediment, caused by accelerated erosion.
 - a. Preliminary Stage (Pre-Construction Stage) – rough grading and/or disking, clearing and grubbing operations, and any soil disturbance prior to mass grading.
 - b. Mass Grading Stage – 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. Because mass grading disturbs large areas at one time, it is highly recommended that mass grading be done in phases to reduce the area exposed at any one time.
 - c. Streets and Utilities Stage – includes excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities

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including fire hydrants, public sanitary sewer systems, storm sewer system and other drainage improvements.

- d. Vertical Construction Stage – building construction from the installation of the foundation through the landscaping stage.
- e. Post-Construction Stage – Lifetime of the built and operating project, during which storm water BMPs are operating and must be maintained.

25. This General Permit requires dischargers to assess the overall risk of a project causing sediment discharge problems, and to place the project into one of three risk categories – low, medium or high risk. The risk is determined by filling out the Sediment Transport Risk Worksheet (Attachment F).

26. This General Permit establishes requirements based upon the project's overall risk to cause pollution. The table below summarizes the differences between the risk categories.

Table 1 - Summary of Risk Categories and Required Elements

Required Elements	Low Risk	Medium Risk	High Risk
Project Implementation Requirements	X (almost all)	X	X
Effluent Monitoring		X	X
ALs		X	X
Receiving Water Monitoring		X ⁴	X ⁵
Visual Monitoring	X	X	X
SWPPP		X	X
REAP	X	X	X
NELs for pH		X	X
Annual Report	X	X	X

27. 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. US EPA establishes water quality standards in the National Toxic Rule and the California Toxic Rule.

⁴ Receiving water monitoring is only required at medium risk sites when the discharge from any drainage area exceeds the AL for pH or turbidity or the NEL for pH for two consecutive storm events, medium risk dischargers shall sample receiving waters for the parameter(s) that consecutively exceeded the AL or NEL.

⁵ Receiving water monitoring is only required at high risk sites when the discharge from any drainage area exceeds the AL for pH or turbidity or the NEL for pH during any storm event, that discharger shall immediately sample receiving waters for the parameter(s) that exceeded the AL or NEL.

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28. This General Permit requires all dischargers to comply with applicable water quality standards for receiving waters. Dischargers are responsible for determining the receiving waters potentially impacted by their discharges, and for complying with all applicable water quality standards. Where a receiving water has a more conservative standard, a NEL stated in this permit may not be the most restrictive applicable requirement.
29. Dischargers located in a watershed where a Total Maximum Daily Load (TMDL) has been adopted by the Regional Water Board or USEPA, may be required by a separate Regional Water Board action to implement additional Best Management Practices (BMPs), conduct additional monitoring activities, and/or comply with an applicable waste load allocation and implementation schedule, or obtain a Regional Water Board permit specific to the area rather than this General Permit.
30. This General Permit requires all dischargers to visually inspect their sites before, during, and after all storm events (Attachment E).
31. This General Permit includes performance standards for new and redevelopment that are consistent with State Water Board Resolution No. 2005-0006, "Consideration Of A Resolution Adopting The Concept Of Sustainability As A Core Value For State Water Board Programs And Directing Its Incorporation." The requirement for all construction sites to match pre-project recharge will help ensure that communities in California built under coverage of this permit will at least have the same amount of groundwater recharge as they did before the project.
32. This General Permit requires all discharges to electronically submit all permit registration, termination, change of information, annual reporting, and other compliance documents through the State Water Board's website.
33. The following discharges are not required to obtain coverage under this General Permit:
 - a. Discharges on tribal Lands;
 - b. Areas that discharge to a combined sewer system;
 - c. Construction projects in the Lake Tahoe Hydrologic Unit⁶;
 - d. Construction projects that disturb less than one acre, unless part of a larger common plan of development or sale;

⁶ Discharges from construction projects in the Lake Tahoe Hydrologic Unit may be required to obtain coverage under the regional permit, Discharges Of Storm Water Runoff Associated With Construction Activity Involving Land Disturbance In The Lake Tahoe Hydrologic Unit El Dorado, Placer, And Alpine Counties.

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- e. Discharges from small construction projects that are covered by the Statewide General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects, Order No. 2003-0007-DWQ.
- f. The construction of water lines, electrical utility lines, etc., as part of the oil and gas exploration, production, processing, treatment, and transmission projects. This exemption does not include construction associated with distribution lines that deliver natural gas to homes businesses, etc., and operate at relatively low pressures, or those pipelines that transport refined petroleum product and chemicals from refineries and chemical plants.⁷
- g. Discharges subject to a separate NPDES permit regulating storm water discharges associated with construction or other land disturbance activities.

IT IS HEREBY ORDERED that all dischargers subject to this General Permit shall comply with the following:

II. Conditions for Permit Coverage

A. Obtaining Permit Coverage

1. All dischargers requiring coverage under this General Permit shall electronically file all PRDs and submit payment of annual fees, according to the provisions in Section B. VII, below.

B. Revising Permit Coverage for Change of Acreage

1. The discharger may reduce or increase the total acreage covered under this General Permit when a portion of the original project within a multi-phase project is complete (See Section XII, Conditions for Termination of Coverage), and/or when ownership of a portion of the site is sold to a different entity, and/or new acreage, subject to this permit, is added to the project.
2. The discharger shall submit to its Regional Water Board a revised Notice of Intent, including a revised site map showing the portion of the site

⁷ On June 12, 2006, USEPA published a rule that exempts construction activities at oil and gas sites from the requirement to obtain an NPDES permit for stormwater discharges except in very limited instances. These amendments are consistent with the Energy Policy Act of 2005 signed by the President of the United States on August 8, 2005. This action also encourages voluntary application of best management practices for construction activities associated with oil and gas field activities and operations to minimize erosion and control sediment to protect surface water quality. The final rule became effective June 12, 2006.

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completed, portions still under construction, portions added, and evidence it has notified any new landowners of their need to obtain Permit coverage.

3. If the portion of the site completed is not stabilized, the current discharger is required to:
 - a. electronically submit the name, address, and telephone number of the new discharger(s), and
 - b. notify the new discharger(s) via certified mail of the requirement to obtain coverage under this General Permit. The new discharger(s) shall obtain coverage and comply with provisions of this General Permit.
 - c. electronically certify that the new discharger(s) have been sent the notification as described in II.B.3.b. above.
4. The current discharger shall submit the revised permit registration documents at least 5 business days prior to their next annual invoice period to obtain any reduction of annual fees. Annual invoice periods either begin on January, April, July or October 1st of each year.
5. If the project acreage subject to the annual fee has changed, dischargers shall mail a revised annual fee no less than seven days after electronically submitting the Permit Registration Documents (PRDs), which include a NOI, SWPPP, and SWPPP Compliance Checklist. Dischargers who fail to submit all PRDs will lose permit coverage.

III. Discharge Prohibitions

1. 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 Board.
2. Discharges of any material, except for the storm water and non-storm water dischargers specifically authorized by this General Permit or another NPDES permit, are prohibited.

IV. 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

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- excess of a reportable quantity listed in 40 CFR Part 117 and/or CFR Part 302.
2. Dischargers shall reduce 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.
 3. NEL for medium and high risk discharges:
 - a. The pH of storm water and non-storm water discharges shall at all times be within the ranges of 5.8-9.0 pH Units, 18 months after the adoption of this General Permit.
 4. NELs for discharges from an ATS:
 - a. Acute toxicity of ATS discharges shall have no significant difference, at the 95% confidence level, between the control⁸ discharge and 100 percent effluent (a t-test)⁹, applied as a monthly median of pass-fail tests.
 - b. Chronic toxicity of ATS discharges shall be equal to 1.0 TU_c, where TU_c = 100/NOEC.
 - c. The pH of ATS discharges shall at all times be within the ranges of 6.5-8.5 pH Units.
 - d. Turbidity of all ATS discharges shall be less than 10 NTU.

V. Action Levels (ALs)

1. The AL for pH shall be values outside the range of 6.5-8.5 pH units.
2. The AL for turbidity shall be values greater than 500 NTU.
3. The AL for TPH, as calculated for carbon range C₁₂ through C₂₈, shall be values greater than 15 mg/L.

⁸ The control sample shall be collected from an alternate storm water discharge location on site where an ATS is not being used. If an alternate storm water discharge location does not exist, the control shall be collected prior to any treatment.

⁹ A t-test is a statistical analysis comparing only two test concentrations (e.g., a control and 100% effluent.) The purpose of this test is to determine if the 100% effluent concentration is significantly different (at the 95% confidence level) from the control (i.e., the test passes or fails).

VI. Receiving Water Limitations

1. Storm water discharges and authorized non-storm water discharges shall not contain pollutants in quantities that cause a public nuisance in groundwater or surface water.
2. Storm water discharges and authorized non-storm water discharges shall 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).
3. Storm water discharges and authorized non-storm water discharges shall not cause foam at discharge locations.
4. Storm water discharges and authorized non-storm water discharges shall not cause deleterious physical impacts to directly connected receiving waters (for example, excessive channel bed and/or bank erosion).
5. Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely impact human health or the environment.
6. Storm water and non-storm water discharges from medium and high risk construction projects shall not be more than 0.2 standard units higher or lower than the pH of the receiving water.
7. Storm water discharges from an ATS shall not be more than 0.2 pH units higher or lower than the pH of the receiving water.

VII. Provisions

1. All dischargers requiring coverage under this General Permit shall electronically file all PRDs and submit payment of annual fees, according to the following schedule:
 - a. New dischargers requiring permit coverage on or after the adoption date [insert effective date of permit] shall electronically file all PRDs no later than 14 days prior to the commencement of construction activities or change of ownership, and mail the appropriate permit fee no later than seven days prior to the commencement of construction activities or change of ownership. Permit coverage shall not commence until the permit fee is received and the PRDs are accepted by the State Water Board.

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- b. Existing dischargers (those who were subject to State Water Board Order No. 99-08-DWQ) shall electronically file all PRDs no later than 90 days after the adoption date [insert adoption date of permit] of this General Permit. If the project acreage subject to the annual fee has changed, dischargers shall mail a revised annual fee no less than seven days after electronically submitting all PRDs or lose permit coverage.
2. During the period (100 days after the State Water Board's adoption) this permit is subject to review by the USEPA, 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 until this General Permit takes effect.
3. Existing dischargers shall make and implement necessary revisions to their SWPPP and Monitoring Program to reflect the changes in this General Permit in accordance with Section IX., Storm Water Pollution Prevention Plan, and Attachment E, Monitoring Program and Reporting Requirements in a timely manner but no later than 90 days after [insert adoption date of permit]. Dischargers shall continue to implement their existing SWPPP and Monitoring Program in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.
4. For existing dischargers, permit coverage under this General Permit shall commence on the date the electronic PRDs are administratively accepted by the State Water Board or Regional Water Boards or the effective date of the General Permit, whichever is later. For new dischargers, permit coverage shall commence on the date the PRDs are administratively accepted by the State Water Board and/or Regional Water Boards and the required permit fee has been submitted or the effective date of the General Permit, whichever is later.
5. A site-specific SWPPP shall be developed for the construction activity covered by this General Permit. The SWPPP shall be designed and implemented to ensure that storm water discharges and authorized non-storm water discharges do not cause or contribute to an exceedance of any applicable water quality standards. The SWPPP shall be kept available at the construction site at all times and shall be presented upon request by State and Regional Water Board staff members.
6. All dischargers shall develop and implement a Monitoring Program in accordance with Attachment E: Monitoring Program and Reporting Requirements.
7. All dischargers shall comply with all requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of storm water to separate storm sewer systems or other watercourses under their

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- jurisdiction, including applicable requirements in municipal storm water management programs subject to municipal separate storm sewer system NPDES permits.
8. Authorized non-storm water discharges may include those from potable sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, and uncontaminated ground water dewatering. Discharges of non-storm water are authorized only if discharges:
 - a. Do not cause or contribute to a violation of any water quality standard;
 - b. Do not violate any other provision of this General Permit;
 - c. Are not prohibited by a Basin Plan;
 - d. Have BMPs specifically included in the SWPPP and properly implemented to:
 - i. prevent or reduce the contact of non-storm water discharges with construction materials or equipment, and
 - ii. protect the receiving waters from velocities that cause scour or increase the turbidity downstream from the discharge (i.e., energy dissipation).
 - e. Do not contain significant quantities of pollutants;
 - f. Meet the NELs and ALs; and
 - g. The non-storm water discharges and sampling information are reported and described in the Annual Report.
 9. Discharges that do not meet the above requirements are not authorized by this General Permit and may be required by a Regional Water Board to be covered under a separate NPDES permit. The discharger shall notify the Regional Water Board of any non-storm water discharges not authorized by this General Permit to determine the need for a separate NPDES permit.
 10. This General Permit expires five years from the date of adoption.

VIII. Project Planning Requirements

A. Risk Category

1. The Discharger shall determine a risk category for the project using the methodology in Attachment F, Sediment Transport Risk Worksheet, prior to construction activities commencing. The risk category shall be noted on the NOI form and/or SWPPP Checklist.

B. Soil Analysis

1. The discharger shall complete a soil particle size analysis, using test method ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, to determine the percentages of sand, very fine sand, silt, and clay on the site. The percentage of particles less than 0.02 mm in diameter shall also be determined.
2. If fill material is brought onto the site, it shall be characterized using test method ASTM D-422.
3. At least one sample shall be taken per mapped soil unit on the site. Soil information can be obtained from a local Natural Resources Conservation Service (NRCS) Field Office, published soil surveys, or from the NRCS soils website (<http://soils.usda.gov>).

IX. Project Implementation Requirements

A. Compliance Determination for Numeric Effluent Limitations (NELs)

1. If the monitoring result is greater than the NEL, then the discharger is out of compliance.
2. When effluent monitoring indicates that a NEL listed in Table 2 is violated, the discharger shall electronically enter into SWARM the analytical results, which were in violation of the NEL, within 48 hours of receiving the results.

Table 2 – Numeric Effluent Limitations, Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Minimum Detection Limit	Reporting Units	Action Level	Numeric Effluent Limitation
pH	Field test with calibrated paper or portable instrument	0.2	pH units	6.5-8.5	5.8-9.0
Turbidity	EPA 0180.1 and/or field test with portable instrument	Not specified	NTU	500	10 (for ATS only)
TPH	DHS/EPA 8015M C ₁₂ -C ₂₈ (direct injection)	1.0	mg/L	15.0	Not Applicable

B. Action Levels (ALs)

Whenever effluent monitoring indicates that an AL listed in Table 2 is exceeded, the discharger shall immediately implement corrective actions if appropriate; conduct a construction site evaluation to determine whether pollutant source(s) associated with construction activity may have caused or contributed to the AL exceedance; and electronically enter monitoring results into SWARM within 48 hours of receiving the results. In the case of a turbidity exceedance, this evaluation shall include an estimation of the turbidity expected to occur under the actual rainfall conditions at the time of the exceedance, if the site were naturally vegetated, using the method presented in Attachment E. In addition, high risk sites shall immediately conduct receiving water monitoring as specified in Attachment E, and include such monitoring results in their SWARM submittal.

Based upon the results of the site evaluation, the discharger shall submit its evaluation and demonstrate to the satisfaction of the Regional Water Board that:

1. the source(s) of the pollutants causing the exceedance of the AL are not related to the construction site's activities and no additional BMPs or SWPPP implementation measures are required to reduce or prevent pollutants in storm water discharges from causing exceedances of receiving water objectives. For turbidity, an adequate demonstration will have been made if the turbidity in the release was less than or equal to the turbidity estimated to occur under the actual rainfall conditions at the time of the exceedance, if the site were naturally vegetated, using the method presented in Attachment E, OR the turbidity in the release was less than or equal to the measured turbidity in the receiving water upstream of the point of discharge of storm water from the site. The demonstration must be submitted to the Regional Water Board within 48 hours from the

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discovery of the exceedance and must provide specific information describing the non-construction related source(s);

OR

2. the pollutant source(s) responsible for the exceedance of the AL have been identified and are related to construction activities; additional BMPs and/or SWPPP implementation measures as necessary to comply with receiving water objectives have been identified and implemented; and revised the SWPPP, as soon as is practicable but no later than seven days after the triggering determination. However, unless required to comply with receiving water objectives, no additional on-site activities or revision of the SWPPP with respect to sediment control will be required if the turbidity in the release was equal to or less than 1.2 times the turbidity estimated to occur under the actual rainfall conditions at the time of the exceedance, if the site were naturally vegetated, using the method presented in Attachment E, OR if the turbidity in the release was equal to or less than 1.2 times the actual turbidity measured in the receiving water upstream of the storm water discharge from the site.

In addition, if the discharger, State Water Board, or Regional Water Board determines that storm water discharges or non-storm water discharges have caused or contributed to AL exceedances for the same parameter (pH, turbidity or TPH) in two consecutive storm events within the same drainage area, the discharger shall:

- a. Continue to perform (high-risk sites) or commence (medium-risk sites) receiving water monitoring as described in Attachment E.
- b. Electronically submit an Action Level Exceedance Evaluation Report (ALEER) within 14-calendar days of receiving official results (e.g., field and/or laboratory) generated for pH, turbidity and TPH to the appropriate Regional Water Board. The ALEER shall include the site evaluation required above and a description and implementation schedule for additional BMPs and/or corrective actions taken to reduce the pollutants causing or contributing to the exceedance.
- c. If the Regional Water Board provides any written comments to revise the ALEER, SWPPP, and/or Monitoring Program the discharger shall address these comments within 14 days of receipt.

C. Erosion Control

1. The discharger shall provide appropriate soil cover for inactive¹⁰ areas of soils disturbed by construction activities that are not scheduled to be re-disturbed until the next stage of construction.
2. At a minimum, the discharger shall stabilize all active¹¹ disturbed areas regardless of time of year from all erosive forces, including rainfall, non-storm water runoff, and wind.
3. The discharger shall implement wind erosion (i.e. dust) control throughout all stages of construction. The discharger shall pay particular attention to soils in Wind Erodibility Groups (WEGs) 1 and 2.
4. The discharger shall stabilize all finished slopes, open space, utility backfill, and lots as soon as they have been completed.

D. Runon and Runoff Controls

1. The discharger shall effectively manage runon from offsite, all runoff through the site, and all runoff that discharges off the site.

E. Sediment Controls

1. The discharger shall design sediment controls based on the results of the soil particle size analysis. If the soils to be exposed contain more than 10% (by weight) particle sizes smaller than 0.02 mm (medium silt), the discharger shall either use an ATS or implement the source control requirements described below in Section VIII.G.
2. The discharger shall, at minimum, design sediment basins according to Attachment H.
3. For areas under active construction, the discharger shall implement erosion control BMPs (runoff control and soil stabilization) in conjunction with sediment control BMPs.
4. The discharger shall apply linear sediment controls along the toe, top, face, and at the grade breaks of exposed and erodible slopes to comply with sheet flow lengths in accordance with Table 3 below.

¹⁰ 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.

¹¹ Active areas of construction are areas undergoing disturbance.

Table 3 – Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-5%	300 feet
5-10%	150 feet
Over 10%	75 feet

5. The discharger shall, at all times, establish effective perimeter controls and stabilize all construction entrances/exits sufficient to control erosion and sediment discharges from the site.
6. At all times during the year, the discharger shall appropriately protect and maintain all storm drain inlets and perimeter controls, runoff control BMPs, and stabilized entrances/exits.
7. The discharger shall limit traffic to stabilized driveways.
8. The discharger shall consider additional site specific and seasonal conditions when selecting and designing sediment control BMPs.

F. Sediment Tracking Onto Roadways

1. The discharger shall use stabilized entrances/exits as the only access points for heavy equipment in order to prevent tracking of sediment onto public or private roadways.
2. On a daily basis or more frequently as necessary, the discharger shall inspect all public and private roads that receive storm water discharges from the project and sweep or vacuum roadways as necessary.

G. Active Treatment System (ATS)

1. If the soils to be exposed contain more than 10% (by weight) particle sizes smaller than 0.02 mm (medium silt), the discharger shall either deploy an ATS or comply with source control procedures described in Section VIII.G.
2. Thirty days before deploying an ATS, the discharger shall submit a supplemental report to the appropriate Regional Water Board for approval prior to discharge. This ATS Report shall include:
 - a. A description of the type of ATS to be used;
 - b. A description of each treatment process (e.g., collection, chemical injections, settling, filtration, polishing) to be used;

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- c. A description of the design capacity of the ATS, including all treatment cell sizing calculations showing that the cells are appropriately sized to capture and treat, within 48 hours, the range of expected site runoff from the smallest storms up to the runoff from 1.5 times the ten-year, 24-hour design storm event. The runoff calculations shall represent watershed conditions during the current construction stage.
 - i. This calculation shall include the total volume of water expected to discharge into the system, including run-on from adjacent properties and from undisturbed areas of the project site. Flow that is diverted around the construction site and which will not discharge into the system does not need to be included in the treatment cell sizing calculations.
 - ii. Other sizing criteria may be used that are site specific or treatment specific, but the system shall be capable of capturing and treating, within 48 hours, at least the runoff generated by the range of storms up to 1.5 times the volume of water generated by the local 10 year, 24 hour design storm event. If the system is not capable of capturing and treating at least the runoff generated by the range of storms up to 1.5 times the volume of water generated by the local 10 year, 24 hour design storm event within 48 hours the supplemental report must contain a justification for the adequacy of the system.
3. If a chemical additive is used, the discharger shall provide information in the supplemental report demonstrating that all additives will be removed prior to discharge of flow from the ATS, or that the discharge of chemical additives from the ATS in expected concentrations will not affect the survival of aquatic life in receiving waters or violate the NELs described in Section IV.3. Acceptable sampling, analysis and reporting methods are described in Attachment E.
4. Dischargers shall comply with the following ATS operation requirements:
 - a. Operators of an ATS shall be appropriately trained for the operation of equipment, process and additives used in the ATS.
 - b. In the event of a system malfunction, the ATS shall either have an automatic shut-off mechanism or a telemetry system that will immediately notify the operator of the system malfunction.
5. Dischargers shall comply with the following ATS compliance requirements:

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- a. The discharger shall sample the treated storm water for compliance with pH and turbidity limits as required in Attachment E.
- b. The discharger shall comply with any additional Monitoring and Reporting Requirements specified by the Regional Water Boards.
- c. The discharger shall direct all ATS discharges through a physical filter such as a vegetated swale and provide outlet protection to prevent erosion and scour of the embankment and channel.
- d. All sampling and analysis test results shall be recorded on a daily log and kept on site with the SWPPP. (See Attachment E).
- e. When effluent monitoring indicates that an ATS NEL is violated, the discharger shall electronically enter into SWARM the analytical results, which were in violation of the NEL, within 48 hours of receiving the results.

H. Source Control Option

1. If the soils to be exposed contain more than 10% (by weight) particle sizes smaller than 0.02 mm (medium silt), the discharger shall either comply with the following source control requirements or use an ATS:
 - a. Maintain vegetative cover as much as possible by developing the project in a phased approach to reduce the amount of exposed soil at any one time.
 - b. Limit the areas of active construction to five acres at any one time.
 - c. Provide 100 percent soil cover for all areas of inactive construction throughout the entire time of construction, on a year-round basis.
 - d. Provide appropriate perimeter control at all appropriate locations along the site perimeter and at all inlets to the storm drain system at all times during the rainy season.
 - e. Provide vegetated buffer strips between the active construction area and any water bodies.
 - f. Provide stabilized construction entrances and limit all vehicle and foot traffic to those entrances.

I. Good Housekeeping

1. The discharger shall implement good housekeeping measures for construction materials, which at a minimum shall consist of the following:
 - a. Conducting 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.
 - b. Covering and berming loose stockpiled construction materials (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).
 - c. Storing chemicals in watertight containers or in a bermed storage shed (completely enclosed), with appropriate secondary containment.
 - d. Minimizing contact of construction materials with precipitation.
 - e. Implementing BMPs to reduce or prevent the offsite tracking of loose construction and landscape materials.
2. The discharger shall implement good housekeeping for waste management, which at a minimum shall consist of the following:
 - a. Preventing disposal of any rinse/wash waters or materials into the storm drain system.
 - b. Berming sanitation facilities (e.g., Porta Potties) and preventing them from being kept within the curb and gutter or on sidewalks or adjacent to a storm drain.
 - c. Cleaning or replacing sanitation facilities and inspecting them regularly for leaks and spills.
 - d. Covering waste disposal containers when they are not in use and preventing them from overflowing.
 - e. Berming and securely protecting stockpiled waste material from wind and rain at all times unless actively being used.
 - f. Addressing procedures to deal with hazardous and non-hazardous spills.
 - g. A spill response and implementation plan shall be developed prior to commencement of construction activities. The plan shall include the following:

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- i. Equipment and materials for cleanup of spills shall be available on site and spills and leaks shall be cleaned up immediately and disposed of properly.
 - ii. Identify and train appropriate spill response personnel.
 - h. Lining and berming of concrete washout areas so there is no leakage or overflow into the underlying soil and onto the surrounding areas. Washout areas shall be positioned away from drain inlets or waterways and be clearly labeled.
3. The discharger shall implement good housekeeping for vehicle storage and maintenance, which at a minimum shall consist of the following:
 - a. Not allowing oil, grease, or fuel to leak in to the soil.
 - b. Placing all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.
 - c. Cleaning leaks immediately and disposing of leaked materials properly.
4. The discharger shall implement good housekeeping for landscape materials, which at a minimum shall consist of the following:
 - a. Covering and berming stockpiled materials such as mulches and topsoil.
 - b. Not applying any landscape material within 2 days before a forecasted rain event or during periods of precipitation.
 - c. Applying landscape material at quantities and applications rates according to manufacture recommendations or based on knowledgeable and experienced field personnel.
 - d. Stacking landscape material on pallets and covering, or storing away when not being used or applied.
5. The discharger shall conduct an assessment 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.
 - a. At a minimum, the discharger shall consider:

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- i. The quantity, physical characteristics (liquid, powder, solid, etc.), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.
- ii. The degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.
- iii. 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. Sampling, visual observation, and inspection records.
- v. Effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

J. Non-Storm Water Management

1. The discharger shall implement measures to control non-storm water discharges (e.g., spills, leakage and exposure of materials) during construction.
2. The discharger shall wash vehicles and streets in designated areas to prevent non-storm water discharges.
3. The discharger shall assign a Qualified SWPPP Practitioner (as defined in section IX) as responsible for ensuring that no materials other than storm water are discharged to receiving waters or storm drain systems (consistent with BAT/BCT).

K. New Development and Re-development Storm Water Performance Standards

1. The discharger shall, through the use of non-structural and structural measures, ensure that the post-development runoff volume approximates the pre-project runoff volume for areas covered with impervious surfaces. The discharger shall obtain Regional Water Board approval for the use of any structural control measures used to comply with this requirement.
2. For projects whose disturbed project area exceeds two acres, the discharger shall preserve the post-construction drainage divides for all drainage areas serving a first order stream¹² or larger and ensure that

¹² A first order stream is defined as a stream with no tributaries.

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post-project time of concentration is equal or greater than post-project time of concentration.

3. For projects whose disturbed project area exceeds 50 acres, the discharger shall preserve pre-construction drainage patterns by distributing their non-structural and structural controls within all drainage areas serving first order streams or larger and ensuring that post-project time of concentration is equal or greater than post-project time of concentration.
4. The discharger shall demonstrate compliance with these requirements by submitting with their NOT a map and worksheets in accordance with the instructions in Attachment G.

L. Inspection, Maintenance and Repair

1. A Qualified SWPPP Practitioner shall conduct inspections and perform sampling and analysis at the discharger's project location.
2. The discharger shall perform Inspections and observations weekly, and at least once each 24-hour period during extended storm events, to identify BMPs that need maintenance or failed to operate as intended.
3. Upon identifying failures or other shortcomings, the discharger shall implement repairs or design changes to BMPs as soon as possible, based on field conditions.
4. For each inspection required, the discharger 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 in Project Implementation Requirement L.
5. The checklist shall remain onsite with the SWPPP. At a minimum, an inspection checklist shall include:
 - a. Inspection date.
 - b. Weather information: estimate of beginning of storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall (inches).
 - c. A description of any inadequate BMPs.
 - d. If it is possible to safely access during inclement weather, list observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls.

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Otherwise, list result of visual inspection at relevant outfall, discharge point, or downstream location and projected required maintenance activities.

- e. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.
- f. Corrective actions required, including any changes to SWPPP necessary and implementation dates.
- g. Photographs taken during the inspection, if any.
- h. Inspector's name, title, and signature.

M. Training and Qualifications

1. All persons responsible for implementing requirements of this General Permit shall be appropriately trained. This includes those personnel responsible for installation, inspection, maintenance, and repair of BMPs. Training should be both formal and informal, occur on an ongoing basis, and should include training/workshops offered by the State Water Board, Regional Water Board, or other recognized agencies or professional organizations. Those responsible for preparing, amending and certifying SWPPPs and REAPs shall comply with the requirements in Section IX and X.

X. Storm Water Pollution Prevention Plan (SWPPP)

A. SWPPP Preparation, Implementation and Oversight

1. All SWPPPs shall be written, amended and certified by a Qualified SWPPP Developer. A Qualified SWPPP Developer shall have one of the following registrations or certifications:
 - a. A California registered civil engineer,
 - b. A California registered geologist,
 - c. A California registered landscape architect,
 - d. A professional hydrologist registered through the American Institute of Hydrology,
 - e. A certified professional soil scientist registered through the Soil Science Society of America,

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- f. A certified professional in erosion and sediment control registered through Certified Professional in Erosion and Sediment Control, Inc.,
- g. A certified professional in storm water quality registered through Certified Professional in Erosion and Sediment Control, Inc., or
- h. A certified professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies.

AND

Effective two years after the adoption date of this General Permit, shall have attended a State Water Board-sponsored or approved Qualified SWPPP Developer training course.

- 2. The SWPPP shall be 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.
- 3. The SWPPP shall list the name and telephone number of the Qualified SWPPP Practitioner(s). A Qualified SWPPP Practitioner is any staff 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.
- 4. Effective two years from the date of adoption of this General Permit, a Qualified SWPPP Practitioner shall be either a Qualified SWPPP Developer or shall have attended a State Water Board-sponsored or approved Qualified SWPPP Practitioner training course.
- 5. The SWPPP shall list the name of any “duly authorized representative” and the legal agreement or other mechanism that provides this authority from the owner.
- 6. The SWPPP shall include a list of names of all contractors, subcontractors, and individuals responsible for implementation of the SWPPP. This list shall include telephone numbers and addresses. Specific areas of responsibility of each subcontractor and emergency contact numbers shall also be included.
- 7. The SWPPP and each amendment shall be signed by the discharger (landowner) or his/her duly authorized representative and the SWPPP

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shall include a listing of the date of initial preparation and the date of each amendment.

8. Low risk projects do not have to comply with this section (Section X. of this General Permit).

XI. Rain Event Action Plan (REAP)

1. The discharger shall develop and implement a Rain Event Action Plan (REAP) designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event. A likely precipitation event is any weather pattern that is forecasted to have a 30% 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>).
2. All REAPs shall be written and certified by a Qualified SWPPP Practitioner.
3. The REAP shall be a written document specific for each rain event.
4. The REAP shall be onsite and available during the applicable event and for at least one year following the conclusion of that event.
5. The REAP shall describe all actions that will be taken to comply with provisions of Sections III, IV and V of this General Permit during the forecasted event. This shall, at a minimum, include or refer to the relevant requirements from Sections VI, VII and VIII of this General Permit.
6. All projects shall ensure that the amount of soil exposed during an event does not exceed what can be adequately protected by deploying standby erosion control and sediment control measures prior to the event.

XII. Conditions for Termination of Coverage

1. When construction is complete¹³ or ownership has been transferred, the discharger shall electronically file a NOT, a final site map, and photos (as necessary) in accordance with Attachment E. Filing a NOT certifies that all State and local requirements have been met in accordance with the General Permit. A construction project is considered complete only when all portions of the site have been transferred to a new owner; or the following conditions have been met:

¹³ A construction project is deemed complete only when all planned construction activities are completed, final stabilization has occurred and all construction-related equipment and any temporary BMPs are removed from the site.

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- a. There is no potential for construction related storm water pollution.
 - b. All elements of the SWPPP have been completed, including final stabilization¹⁴.
 - c. Construction materials and waste have been disposed of properly.
 - d. Compliance with the New and Re-development Standards in Section K of this General Permit has been demonstrated.
 - e. Post-construction storm water management measures have been installed and a satisfactory long-term maintenance plan has been established, and
 - f. The site is in compliance with all local storm water management requirements.
2. The discharger shall demonstrate final stabilization for the purposes of submitting a termination application is satisfied when all soil disturbing activities are completed and when the following criteria are met:
- a. The vegetative cover is self-sustaining and at least 70% of the soil is uniformly covered by live, actively growing plant matter in contact with the soil¹⁵. The remaining exposed soil (30%) shall be partially covered by fallen plant litter or standing dead plant litter. Proper maintenance of plant ground cover should result in near 100% coverage after the second growing season. Perennial vegetation may include grasses, ground covers, shrubs, or a combination.

OR:

- b. Equivalent stabilization measures have been employed. These measures include the use of such BMPs as reinforced channel liners

¹⁴ "Final Stabilization" means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas not covered by permanent structures.

¹⁵ Where background native vegetation covers less than 100% of the surface, such as in arid areas, the 70% coverage criteria is adjusted as follows:

If, on undisturbed sites, the native vegetation covers 50% of the ground surface, 70% of 50% (.70 X .50 = .35) would require 35% total uniform vegetative surface coverage. This coverage shall be self-sustaining and at least 35% of the soil shall be uniformly covered by live actively growing plant matter in contact with the soil. The remaining exposed soil (65%) should be partially covered by fallen plant litter or standing dead plant litter.

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stabilized with vegetation, or other erosion resistant soil coverings or treatments such as compost, rolled erosion control products, or mulch.

OR:

- c. Storm water discharges from all stabilized areas contain turbidity less than 40 NTU.

XIII. Regional Water Quality Control Board (Regional Water Board) Authorities

1. Regional Water Boards may review permit registration documents (PRDs) and reject or accept permit coverage of applications or require formal Regional Water Board permit application approval.
2. Regional Water Boards shall review comments provided from the public on new permit applications within the 90-day public review period. Based upon the public comments and Regional Water Board review of the permit application submittal, Regional Water Boards may take actions that include, but are not limited to: rescinding permit coverage, requiring public hearings or formal Regional Water Board permit approvals, requesting dischargers to revise their SWPPP and Monitoring Programs within a specified time period, or take no action.
3. 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 REAPs, 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.
4. 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.
5. Regional Water Boards may impose additional requirements on dischargers to satisfy TMDL implementation requirements or to satisfy provisions in their Basin Plans.
6. Regional Water Boards may require revisions to SWPPPs, REAPs, and Monitoring Programs.
7. Regional Water Boards may require dischargers to retain records for more than three years.

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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 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.
10. Regional Water Boards may direct the discharger to reevaluate the risk category for their project.
11. Regional Water Boards may terminate coverage under this General Permit for dischargers who incorrectly determine their risk category (e.g., they determine themselves to be low risk when they are actually a medium risk project).

ATTACHMENT A: Glossary

Active Areas of Construction

Active areas of construction are areas undergoing disturbance (e.g., clearing, grubbing, and grading, etc.).

Action Level (AL)

The action level is used to determine if best management practices are effective; it is not an effluent limit. If any storm water sample exceeds the action level, then the discharger shall evaluate the BMPs and their adequacy and take the necessary corrective actions.

Active Treatment System (ATS)

An ATS is 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

A chemical stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect observed within 96 hours or less is considered acute.

Best Available Technology Economically Achievable (BAT)

As defined by USEPA, 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. 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, technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, oil and grease. The BCT is established in light of a two-part "cost reasonableness" test which compares the cost for an industry to reduce its pollutant discharge with the cost to a POTW for similar levels of reduction of a pollutant loading. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find limits which are reasonable under both tests before establishing them as BCT.

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.

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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 to waters of the United States. 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.

Coagulation

Clumping of particles in a discharge to settle out impurities, often induced by chemicals such as lime, alum, and iron salts.

Chain of Custody (COC) Form

The COC Form is a 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.

Chronic Toxicity

The ability of a substance or a mixture of substances to cause harmful effects over an extended period of time. Expressed as toxic units chronic (TUc), $TUc = 100/NOEC$, where NOEC is the No Observed Effect Concentration.

Direct Discharge

Discharge that is routed directly to a surface water of the state via a pipe, channel, or ditch (including a municipal storm sewer system), or via surface runoff.

Discharger

The discharger is the person or entity subject to the Construction General Permit.

Effluent

A discharge to a body of water from a point source.

Erosion

The process, in 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

Refers to water quality testing performed in the field with portable field-testing kits or meters.

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Field Tracking Form (FTF)

A form, which serves as a guide to sampling crews for obtaining sampling information and to prescribe and document sample collection information in the field. The FTF usually contains sample identifiers, sampling locations, requested analyses, Quality Control (QC) sample identifiers, special instructions, and field notes.

Final Stabilization

Requires that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas not covered by permanent structures.

First Order Stream

A stream with no tributaries.

Flocculants

A substance that interacts with suspended particles and bind them together to form flocs. Flocculants such as mucus are secreted naturally by living organisms. Synthetic flocculants are often used to remove particulates from water.

Good Housekeeping BMPs

BMPs that seek 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.

High Risk

A construction project that receives a calculated value of greater than 200 when using the Sediment Transport Worksheet (Attachment F).

Holding Time

Holding time is specified by the analytical method and is the elapsed time between the time the sample is collected and the time the analysis must be initiated.

Hydromodification

Alteration of the hydrologic characteristics of coastal and noncoastal waters, which in turn could cause degradation of water resources. Hydromodification can cause excessive erosion and/or sedimentation rates, causing excessive turbidity, streambank downcutting, and/or excessive deposition within the stream channel.

Inactive Areas of Construction

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.

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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.

Lethal-Concentration for 50% Mortality (LC₅₀)

The toxicant concentration that would cause death in fifty percent (50%) of the test population.

Likely Precipitation Event

Any weather pattern that is forecasted to have a 30% or greater chance of producing precipitation in the project area.

Low Risk

A construction project that receives a calculated value of less than or equal to 100 when using the Sediment Transport Worksheet (Attachment F).

Mass Grading Stage

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. Because mass grading disturbs large areas at one time it is preferable that mass grading be done in phases to reduce the area exposed at any one time.

Medium Risk

A construction project that receives a calculated value between 101 and 199 using the Sediment Transport Worksheet (Attachment F).

Non-Storm Water Discharges

Non-storm water 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.

pH

The pH is 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

A subset of BMPs including structural and non-structural controls which detain, retain, filter, or educate to prevent the release of pollutants to surface waters during the final functional life of development.

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Preliminary Stage (Pre-Construction Stage)

Rough grading and/or disking, clearing and grubbing operations, or any soil disturbance prior to mass grading.

Qualified SWPPP Developer

An individual who is properly qualified to develop and certify a Storm Water Pollution Prevention Plan (SWPPP).

Qualified SWPPP Practitioner

Any person 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.

R Factor

The 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

A written document, specific for each rain event, designed to protect all exposed portions of the site within 48 hours of any likely precipitation event.

Reference Sample

A sample taken from an undisturbed part of the construction site or from an undisturbed site immediately upstream from a construction site. The reference sample is used for comparison with samples taken from the active construction site. It is the same set of samples that is referred to as an uncontaminated sample in the Permit.

Runoff Control BMPs

Measures used to divert runoff from offsite and runoff within the site. Examples include perimeter swales, dikes, and check dams.

Sampling and Analysis Plan

A document that describes how the samples will be collected and 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).

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Sediment

Sediment is 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

The 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. Also called settling.

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

The settleable solids (SS) test measures the 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.

Silt

Silt consists of soil particles between 0.05mm and 0.002mm in size. (For the purposes of its use here, it also includes clay, which is categorized by a particle size less than 0.002mm.)

Sheet Flow

Flow that occurs overland in areas where there are no defined channels where the water spreads out over a large area at a uniform depth.

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. Certain soil amendments may not be visible in site runoff. Soil amendments likely to fall in this category include lime, cementitious binders, chlorides, emulsions, polymers, soil stabilizers, and tackifiers applied as a stand-alone treatment (i.e., without mulch). Some of these products may bind with the soil, and thus be visible. Plant fibers (such as straw or hay), wood and recycled paper fibers (such as mulches and matrices), bark or wood chips, green waste or composted organic materials, and biodegradable or synthetic blanket fibers are soil amendments that are likely to be visible in storm water runoff.

Storm Event

A qualifying storm event is any event that produces 0.5 inches or more precipitation with a 48 hour or greater period between storm events.

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Streets and Utilities Stage

Includes 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.

Suspended Sediment Concentration (SSC)

The suspended sediment concentration (SSC) test measures 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.

T-test

A statistical analysis comparing only two test concentrations (e.g., a control and 100% effluent.) The purpose of this test is to determine if the 100% effluent concentration is significantly different (at the 95% confidence level) from the control (i.e., the test passes or fails).

Total Suspended Solids (TSS)

Suspended solids in a water sample include inorganic substances, such as soil particles and organic substances, such as algae, aquatic plant/animal waste, particles related to industrial/sewage waste, etc. The total suspended solids (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, growth anomalies.

Turbidity

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 scattering of light increases with a greater suspended load. Turbidity is commonly measured in Nephelometric Turbidity Units (NTU).

Vertical Construction Stage

Building construction from the installation of the foundation through the landscaping stage.

Water Quality Objectives (WQO)

As defined by the California Water Code, water quality objectives are the 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.

ATTACHMENT B: Standard Provisions for All NPDES Permits

I. Standard Provisions – Permit Compliance

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. 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 Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all 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 Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which 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. (40 C.F.R. § 122.41(m)(1)(ii).)

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2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, 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 occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. Notice:
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset

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does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. Standard Provisions – Permit Action

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. Standard Provisions – Monitoring

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. Standard Provisions – Records

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

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4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. Standard Provisions – Reporting

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

For a corporation, select only the following:

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) 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 (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty

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of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, select only the following:

3. All permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipality, State, federal, or other public agency, select only the following:

4. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)
5. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

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6. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
7. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 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, the information submitted is, to the best of my knowledge and belief, 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.” (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that

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are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).); or

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. Standard Provisions – Enforcement

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. Additional Provisions – Notification Levels

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

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1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):
 - a. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):
 - a. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(2)(i));
 - b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii));
or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

**ATTACHMENT C:
NOI and Instructions**

NOTICE OF INTENT (NOI) TO COMPLY WITH THE TERMS
OF THE GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH CONSTRUCTION ACTIVITY

GENERAL INSTRUCTIONS

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 Activities Storm Water Permit (General Permit). Construction activity, which is a part of a larger common area of development or sale must also be permitted. (For example, if 0.75 acres of a 5-acre subdivision is disturbed by construction activities, and the remaining 4.25 acres is to be developed at a future date, the property owner must obtain a General Storm Water Permit for the 0.75-acre project). Construction activity includes, but is not limited to: clearing, grading, demolition, excavation, construction of new structures, and reconstruction of existing facilities involving removal and replacement that results in soil disturbance. This includes construction access roads, staging areas, storage areas, stockpiles, and any off-site areas, which receive run-off from the construction project such as discharge points into a receiving water. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

The owner of the land where the construction activity is occurring is responsible for obtaining a permit. Owners may obtain coverage under the General Permit by filing a NOI in accordance with the following instructions. Coverage for construction activity conducted on easements (e.g., pipeline construction) or on nearby properties by agreement or permission, or by an owner or lessee of a mineral estate (oil, gas, geothermal, aggregate, precious metals, and/or industrial minerals) entitled to conduct the activities, shall be obtained by the entity responsible for the construction activity. Linear construction projects which will have construction activity occurring in one or more than one Regional Water Board should contact the State Water Resources Control Board at the number listed below prior to submitting an NOI application for specific information related to the use of the NOI form.

Construction Activity Not Covered By This General Permit

Storm water discharges in the Lake Tahoe Hydrologic Unit will be regulated by a separate permit(s) adopted by the California Regional Water Quality Control Board, Lahontan Region, and will not be covered under the State Water Resources Control Board's (SWRCB) General Permit. Storm water discharges on Indian Lands will be regulated by the U.S. Environmental Protection Agency.

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How to Apply

All Permit Registration Documents (PRDs), which include a NOI, SWPPP, and SWPPP Compliance Checklist must be electronically filed using the California Integrated Water Quality System (<http://www.waterboards.ca.gov/ciwqs>) and the appropriate permit fee must be sent to the State Water Board.

Once the PRDs are electronically submitted, please remit the application fee to:

Standard Mail:

State Water Resources Control Board
Division of Water Quality
Attn: Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977

Overnight Mail:

State Water Resources Control Board
Division of Water Quality
Storm Water Section
1001 I Street - Attn 15th Floor
Sacramento, CA 95814

When to Apply

Property owners proposing to conduct construction activities subject to this General Permit must file a Notice of Intent prior to the commencement of construction activity.

Fees

The annual fee is based on the total disturbed acreage of the construction project as per the fee schedule adopted by the State Water Board. Acreage is rounded to the nearest whole acre and fee rounded to the nearest dollar amount. A list of fees by acre is located at http://www.waterboards.ca.gov/stormwtr/const_fees.html

Questions?

If you have any questions on completing the NOI please call the State Water Board at (916) 341-5536.

ATTACHMENT D:
Storm Water Pollution Prevention Plan (SWPPP) Requirements

1. The SWPPP shall include any and all information needed to demonstrate compliance with all requirements in Section VIII, Project Planning Requirements of the General Permit.
2. Project Description and Map
 - a. The SWPPP shall include a narrative description of pollutant sources and BMPs that cannot be adequately communicated or identified on the site map.
 - b. The SWPPP shall include a narrative description of preconstruction control practices to reduce sediment and other pollutants in storm water discharges.
 - c. The SWPPP shall specify the construction site surface area: the size (in acres or square feet), the runoff coefficient before and after construction, and the percentage that is impervious (e.g., paved, roofed, etc.) before and after construction.
 - d. The SWPPP shall include a copy of the NOI and the Waste Discharge Identification (WDID) number. The WDID number shall be added to the SWPPP when it is received.
 - e. The SWPPP shall include a construction activity schedule that describes all major activities or construction stages at the site, the proposed time frame to conduct those activities, and the subsequent changes made to the Good Housekeeping BMPs.
 - f. The SWPPP shall include a vicinity map and project site map(s). The project site map(s) shall do all the following:
 - i. If applicable, show the locations of any direct discharge from the construction site into a Section 303(d) listed water body (see <http://www.stormwater.water-programs.com/>) or to a conveyance that discharges into a 303(d) listed water body and show the designated sampling locations.
 - ii. Outline all inactive areas of soil disturbance including cut or fill areas, which will be stabilized by temporary or permanent erosion control measures for all phases of construction.
 - iii. Outline all active areas of soil disturbance, cut, or fill.
 - iv. Show the locations of all runoff control BMPs.

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- v. Show the locations of all erosion control BMPs.
 - vi. Show the locations of all sediment control BMPs.
 - vii. Show the locations of all temporary on-site drainages that carry concentrated flow,
 - viii. If applicable, show the location of the ATS and the sediment basin(s)/treatment cell(s) location(s) on the site.
 - ix. Include the locations of non-storm water discharges.
 - x. Show the drainage patterns into each on-site storm water inlet point or receiving water.
 - xi. Show the location of sensitive habitats, watercourses or other features which are not to be disturbed
 - xii. Show the locations of all post-construction BMPs.
 - xiii. Show areas designated for the storage of soil or waste, vehicle storage and service areas, construction material loading, unloading, and access areas, equipment storage, cleaning, and maintenance areas, storage of landscaping materials, fueling areas, and areas used to store and transfer water for compaction and dust control.
3. Erosion Control
- a. The SWPPP shall include a proposed schedule for the implementation and maintenance of erosion control measures and a description of the erosion control practices, including appropriate design details and a time schedule. The discharger shall consider the full range of erosion control BMPs. The discharger shall consider any additional site-specific and seasonal conditions when selecting and implementing appropriate BMPs.
 - b. The SWPPP shall include a description of the BMPs to reduce wind erosion at all times for the areas of active construction, with particular attention paid to stockpiled materials.
4. Runon and Runoff Controls
- a. The SWPPP shall include calculations for anticipated runon, and describe, including appropriate design details, all BMPs implemented to divert off-site drainage around or through the construction project.

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- b. The SWPPP shall include a location of any diversion conveyance system and a description of materials used.
- c. The SWPPP shall include information on contamination or pollution of diverted storm water, if there is information that it may be polluted.
- d. The SWPPP shall include the volume and velocity of the discharge from the conveyance. The volume and velocity of the discharge shall not exceed the carrying capacity of the receiving water, and velocity dissipation at the outfall may be required.

5. Sediment Controls

- a. The SWPPP shall include a copy of the results from the particle size analysis. In addition, the SWPPP shall include the percentage of particles less than 0.02 mm in diameter.
- b. The SWPPP shall include a proposed schedule for deployment and maintenance of sediment control BMPs.

6. Sediment Tracking

- a. The SWPPP shall include a description and location of BMPs designed to discourage sediment tracking activities; include measures to restrict traffic on disturbed lots and areas to minimize the tracking of sediment onto paved streets.
- b. The SWPPP shall specify daily or more frequently as necessary, inspection, sweeping, and/or vacuuming procedures for public and private roads; maintain sampling records; include a discussion of maintenance of such stabilized construction entrances.

7. ATS (Active Treatment System)

- a. The SWPPP shall describe the type of ATS to be used.
- b. The SWPPP shall describe each treatment process (e.g., collection, chemical injections, settling, filtration, polishing) to be used.
- c. The SWPPP shall describe the ATS's design capacity, including the treatment cell sizing calculations using 1.5 times the volume of the 10 year, 24-hour design storm event, and demonstrate that the ATS will appropriately capture and treat, within 48 hours, the range of storms from all of those storms more frequent than 1.5 times the 10 year, 24-hour design storm even up to that design storm event.
 - i. This calculation shall include the total volume of water expected to discharge into the ATS, including run-on from adjacent properties and flow from

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undisturbed areas of the project site that are anticipated to flow into the system given the current stage of construction.

- ii. Other sizing criteria may be used that are site specific or treatment specific, but the system shall be capable of capturing and treating, within 48 hours, at least the runoff generated by the range of storms up to 1.5 times the volume of water generated by the local 10 year, 24 hour design storm event. If the system is not capable of capturing and treating at least the runoff generated by the range of storms up to 1.5 times the volume of water generated by the local 10 year, 24 hour design storm event within 48 hours the supplemental report must contain a justification for the adequacy of the system.
 - d. The SWPPP shall describe the sampling protocol.
 - e. The SWPPP shall describe the methodology for the field tests as well as the laboratory tests.
 - f. The SWPPP shall contain the sampling frequencies (contained in Attachment E) and Q/A Q/C protocols.
 - g. The SWPPP shall include information regarding the laboratory selected to conduct sampling and analysis.
 - h. The SWPPP shall include the name and phone number of the responsible party assigned to conduct sampling and analysis and to maintain sampling records.
 - i. The SWPPP shall include a contingency plan to immediately correct any problems from operational failures and upsets. The contingency plan must include at least one of the following corrective measures:
 - i. Temporary storage sized to handle all reasonable failure scenarios,
 - ii. Discharge to a sanitary sewer if available and pre-approved by the sewer authority,
 - iii. Discharge to an infiltration system with no discharge to surface water, or,
 - iv. Truck hauling for proper disposal until the problem is corrected. If this corrective action is used, all contact information for the hauler and the disposal site shall be contained in the SWPPP.
8. Source Control Option
- a. The SWPPP shall contain a copy of the soil analysis report.

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- b. The SWPPP shall show areas of existing vegetation that will not be disturbed; show calculations illustrating how each phase disturbed is less than five (5) acres, and how all disturbed phases will be fully stabilized prior to disturbance of the subsequent phase.
- c. The SWPPP shall list soil cover BMPs that will provide 100% soil cover on inactive areas.
- d. The SWPPP shall show all: perimeter controls; vegetative buffer strips; locations of stabilized construction entrances; and discharge locations from areas of active construction through vegetated swales or strips.
- e. The SWPPP shall describe the sampling protocol for pH, turbidity, and Total Petroleum Hydrocarbons (TPH); maintain sampling records.

9. Good Housekeeping

- a. The SWPPP shall include a narrative assessment of all areas of construction activity and potential construction pollutant sources which are likely to occur at the construction site and a description of each BMP implemented at the construction site. BMPs should be included to minimize or eliminate the exposure of storm water to construction materials, equipment, vehicles, waste storage areas, and service areas.
- b. The BMP narrative description shall include, for each BMP:
 - i. The type of pollutants the BMP is designed to reduce or prevent.
 - ii. The frequency, time(s) of day, or conditions when the BMP is scheduled for implementation.
 - iii. Identification of the individual and/or position responsible for implementing the BMP.
 - iv. The procedures (including maintenance procedures) and/or instructions to implement the BMP.
 - v. The equipment and tools necessary to implement the BMP, and,
 - vi. Appropriate design details for the BMP.

10. Non-Storm Water Management

- a. The SWPPP shall include a description of all authorized non-storm water discharges to receiving waters that are proposed for the construction project.

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- b. The SWPPP shall describe elements of the site that may contribute pollutants to storm water, (e.g., toxic materials that are known to have been treated, stored, disposed, spilled, or leaked onto the construction site, and native soils such as serpentinite).
- c. The SWPPP shall describe the BMPs implemented to minimize the exposure of storm water to contaminated soil or toxic materials.
- d. The SWPPP shall list the materials to be used or produced during the construction activity.
- e. The SWPPP shall describe the BMPs for control of discharges from waste handling and disposal areas and methods of on-site storage and disposal of construction materials and construction waste.
- f. The SWPPP shall describe the BMPs designed to minimize or eliminate the exposure of storm water to construction materials, equipment, vehicles, waste storage areas, concrete wash out areas, or service areas.
- g. The SWPPP shall describe the anticipated handling of hazardous and non-hazardous waste and spills.
- h. The SWPPP shall describe the precautions taken to minimize landscaping materials from coming in contact with storm water.
- i. The SWPPP shall describe why each non-storm water discharge is infeasible to eliminate.
- j. The SWPPP shall include an explanation of the technical basis used to select control measures.
- k. The SWPPP shall include a description of the technology to be used to filter or treat dewatering discharge from sediment basin(s) or trap(s) and shall identify the location of the discharge in the SWPPP.
- l. The SWPPP shall include the name and contact number of the qualified individual assigned the responsibility for ensuring that no materials other than storm water are discharged to receiving waters or storm drain systems.

11. New Development and Re-development Storm Water Performance Standards

- a. The SWPPP shall include the calculations used to demonstrate compliance with the standards listed in Section VIII.J of the General Permit.

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- b. The SWPPP shall include a description of the operation and maintenance of control practices that will be used after construction is completed, including short and long term funding sources and the responsible party.
- c. The SWPPP shall include all appropriate plans, calculations, design details, and narrative description necessary to demonstrate the project has met the General Permit's storm water treatment and hydromodification requirements (Section IX.K).

12. Training and Qualifications

- a. The SWPPP shall include documentation of all training for listed individuals responsible for SWPPP preparation, implementation, and permit compliance.
- b. The SWPPP shall include documentation of all training for listed individuals responsible for BMP installation, inspection, maintenance, and repair.
- c. The SWPPP shall include documentation of all training for listed individuals responsible for overseeing, revising, and amending the SWPPP.

ATTACHMENT E: Monitoring Program and Reporting Requirements

A. Implementation Schedule

1. All dischargers subject to the General Permit (cite Order No.) shall develop and implement a Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Attachment. 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 SWPPP, included as an appendix or separate SWPPP chapter.
2. When a change of ownership occurs for all or any portion of the construction site prior to completion or stabilization, the new discharger(s) (responsible party(ies)) shall comply with these requirements as of the date the ownership change occurs.

B. Objectives

1. The CSMP shall be developed and implemented to address the following objectives:
 - a. To demonstrate that the site is in compliance with the requirements (e.g. Discharge Prohibitions, ALs, and NELs) of this General Permit;
 - b. To determine whether immediate corrective actions, additional BMP implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges; and
 - c. To determine whether BMPs included in the SWPPP/REAP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.
2. The discharger shall develop written site-specific CSMPs that include all monitoring procedures and instructions, location maps, forms, and checklists as required in this attachment.

C. Non-storm Water Discharge Inspections

1. The discharger shall visually observe each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

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2. One visual observation shall be conducted quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observations are only required during daylight hours (sunrise to sunset).
3. Visual observations shall document the presence or evidence of any non-storm water discharge, pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. The discharger shall maintain on-site records indicating the personnel performing the visual observations, 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. The SWPPP shall be revised, as necessary, and implemented in accordance with Section IX of the General Permit and Attachment D.

D. Storm Event Related Inspections

1. The discharger shall visually observe storm water discharges at all discharge locations within one business day after each inch of precipitation from a storm event.
2. The discharger shall record any storm event that produce less than 1/2 inch of precipitation.
3. The discharger shall visually observe the discharge of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of 1/2 inch or more at the time of discharge. The discharger is only required to visually observe such discharges if they occur under daylight conditions. 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.
4. Within 48 hours of each anticipated storm event, the discharger shall visually observe (1) all storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources and implement appropriate corrective actions, (2) all BMPs to identify whether they have been properly implemented in accordance with the SWPPP/REAP and implement corrective actions, and (3) any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard. For the purpose of this General Permit, an anticipated storm event is defined as any storm event with at least a 30% chance of precipitation as predicted by the National Weather Service for the local climate zone.
5. For the visual observations described in D.1 and D.3 above, the discharger shall observe the presence or absence of floating and suspended materials, a sheen

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on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

6. Within two business days after each storm event that produces precipitation of 1/2 inch or more, the discharger shall conduct a post storm event inspection to (1) identify whether BMPs were adequately designed, implemented, and effective, (2) identify additional BMPs and revise the SWPPP accordingly, and (3) photograph each drainage area discharge location and structural BMPs.
7. The discharger shall 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. As necessary, the SWPPP shall be revised to incorporate additional BMPs to reduce or prevent pollutants in storm water discharges in accordance with Section IX of this General Permit and Attachment D.

E. Sampling and Analysis

1. A discharger with either a medium or high risk construction project shall collect storm water samples from each drainage area within one business day after the initial 1/2 inch of measured precipitation from a storm event, and every one inch thereafter. The discharger shall collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of 1/2 inch or more at the time of discharge.
2. A discharger with either a medium or high risk construction project shall analyze samples for:
 - a. pH, turbidity and TPH;
 - b. Parameters indicating the presence of pollutants identified in the pollutant source assessment required in Section IX.I.5 contained in the General Permit. The discharger shall modify these additional parameters in accordance with any updated SWPPP pollutant source assessment;
 - c. Any additional parameters for which monitoring is required by the Regional Water Board.

Receiving Water Monitoring Requirements

3. When the discharge from any drainage area at a high risk site exceeds the AL for pH or turbidity or the NEL for pH during any storm event, that discharger shall immediately sample receiving waters for the parameter(s) that exceeded the AL or NEL.

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4. When the discharge from any drainage area at a medium risk site exceeds the AL for pH or turbidity or the NEL for pH for two consecutive storm events, medium risk dischargers shall sample receiving waters for the parameter(s) that consecutively exceeded the AL or NEL.
5. Receiving waters shall be sampled both immediately upstream and downstream of each discharge location. If two or more discharge locations discharge to the same receiving water, dischargers may sample the receiving water at a single upstream and downstream location.

ATS Monitoring Requirements

5. Any discharger who deploys an ATS on their site shall conduct the following monitoring each 24 hour period of ATS operation:
 - a. Operational Monitoring:
 - i. pH, turbidity (in NTU), and temperature (in degrees Celsius) of storm water influent,
 - ii. Total volumes of influent and treated and discharged storm water effluent (in gallons),
 - iii. Start and end time of each discharge event,
 - iv. Flow rate (average hourly, in gallons per hour),
 - v. Type and amount of chemical(s) used for pH adjustment (if applicable),
 - vi. Amount of chemical additive (if applicable) added as primary dosing in the treatment cells/settling basins (dose of chemical in kg/gallon),
 - vii. Amount of chemical additive (if applicable) added after primary settling (dose of chemical in kg/gallon),
 - viii. Amount of chemical additive (if applicable) added as a polishing dose following primary settling (dose of chemical in kg/gallon), and
 - ix. Settling time in basins.
 - b. Compliance Monitoring:
 - i. pH and turbidity of the storm water effluent,
 - ii. pH of the receiving water, and

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- c. Toxicity Monitoring: effluent shall be tested for acute and chronic toxicity. 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 E113¹⁶.
 - i. Acute and chronic toxicity tests shall be conducted with the following species and protocols.
 - (a). 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.
 - (b). The method to be used in the chronic toxicity testing shall be “Survival and Reproduction Test Method 1002.0, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, USEPA-821-R-02-013” for Fathead minnow, *Pimephales promelas* or Rainbow trout, *Oncorhynchus mykiss* may be used as a substitute for fathead minnow, Daphnid, *Ceriodaphnia dubia*, and an algal species.
 - ii. 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.
 - iii. At a minimum, bioassays shall be performed on the first five batches (or on/off cycle) and on every tenth batch thereafter, or as otherwise approved by the Regional Water Board. Any discharge that exceeds the acute or chronic toxicity effluent limit shall be immediately reported to the Regional Water Board.
 - iv. Results from acute and chronic toxicity testing shall be reported as shown in Table E -1.

¹⁶ http://www.dhs.ca.gov/ps/ls/elap/pdf/FOT_Desc.pdf

Table E - 1: Reporting Values for Acute and Chronic Toxicity

Description of Reporting Values	96-hour Acute	7-day Chronic
% survival in 100% concentration	Yes	Yes
Lethal concentration 50% (LC ₅₀)	Yes	Yes
No-Observed Effect Concentration (NOEC reproduction)	<i>Not Applicable</i>	Yes
Lowest Observed Effect Concentration (LOEC)	Yes	Yes
Pass/ fail test for Acute Toxicity	Yes	<i>Not Applicable</i>
Toxic Unit for chronic effects (TU _C)*	<i>Not Applicable</i>	Yes

*TU_C equals 100/NOEC

F. Storm Water Sampling Locations

1. The discharger shall perform sampling of storm water discharges from all drainage areas associated with construction activity. The storm water discharge collected and observed shall represent the worst quality storm water discharge in each drainage area based on visual observation of the water and upstream conditions. 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 muddy water is flowing through some parts of a silt fence, samples shall be taken of the muddy water even if most water flowing through the fence is clear.
2. The discharger may monitor and report run-on from surrounding areas if they believe run-on may contribute to exceedance of AL s or NELs.
3. In addition, a discharger who deploys an ATS on their site shall collect ATS effluent samples and measurements from the discharge pipe or another location representative of the nature of the discharge.
4. The discharger shall select analytical test methods from the list provided in Table 2 “Numeric Effluent Limitations, Action Levels, Test Methods, Detection Limits, and Reporting Units” contained in the General Permit.
5. All storm water sample collection preservation and handling shall be conducted in accordance with Section H “Storm Water Sample Collection and Handling Instructions” below.

Receiving Water Sampling Locations

6. Receiving waters shall be sampled both immediately upstream and downstream of each drainage location that exceeded the ALs and/or NELs. If two or more

discharge locations discharge to the same receiving water, dischargers may sample the receiving water at a single upstream and downstream location.

G. Visual Observation and Sample Collection Exceptions

1. The discharger shall be prepared to collect samples and conduct visual observations until the minimum requirements of Sections D. and E above are completed. The discharger is not required to physically collect samples or conduct visual observations under the following conditions:
 - a. During dangerous weather conditions such as flooding and electrical storms;
 - b. Outside of scheduled site operating hours.
2. If the discharger does not collect the required samples or visual observations due to these exceptions, an explanation shall be included in their SWPPP and in the Annual Report why the sampling or visual observations were not conducted

H. Storm Water Sample Collection and Handling Instructions

Refer to Table 2 in the General Permit for Numeric Effluent Limitations, Action Levels, Test Methods, Detection Limits, and Reporting Units.

1. 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, sample container labels, blank chain of custody forms, and sample preservation instructions.
2. 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). Options are to either deliver the samples to the laboratory, arrange to have the laboratory pick them up, or overnight ship them to the laboratory.
3. 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.
4. To prevent sample contamination, do not touch, or put anything into the sample containers before collecting storm water samples.
5. Do not overfill sample containers. Overfilling can change the analytical results.
6. Tightly screw the cap of each sample container without stripping the threads of the cap.

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7. 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.
8. 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 shipping container. Samples should be kept as close to 4° C (39° F) as possible until arriving at the laboratory. Do not freeze samples.
9. 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.
10. Upon shipping/delivering the sample containers, obtain both the signatures of the persons relinquishing and receiving the sample containers.
11. The discharger shall designate and train personnel to collect, maintain, and ship samples in accordance with the above sample protocols and good laboratory practices.
12. The discharger should refer to the Surface Water Ambient Monitoring Program's (SWAMP) Quality Assurance Management Plan (QAMP) for more information on sampling collection and analysis which can be found at <http://www.waterboards.ca.gov/swamp/index.html>¹⁷

I. Monitoring Methods

1. The projects monitoring program shall include a description of the following items:
 - a. Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.
 - b. 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.

¹⁷ Additional information regarding QAMP can be found at <http://mpsi.mlml.calstate.edu/swqacompare.htm>.

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- c. Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section E above.
2. All sampling and sample preservation shall 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 dischargers' 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. The discharger 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.

J. Watershed Monitoring Option

1. If a discharger is part of a qualified regional watershed-based monitoring program they may be eligible for relief from the requirements in Sections E and F above. The State 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.

K. Records

1. Records of all storm water monitoring information and copies of all reports (including Annual Reports) required by this General Permit shall be retained for a period of at least three years. They shall be retained on-site while construction is ongoing. These records shall include:
 - a. The date, place, time of facility inspections, sampling, visual observations, and/or measurements, including precipitation;
 - b. The individual(s) who performed the facility inspections, sampling, visual observations, and or measurements;
 - c. The date and approximate time of analyses;
 - d. The individual(s) who performed the analyses;

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- e. A summary of all analytical results from the last five years, the method detection limits and reporting units, and the analytical techniques or methods used;
- f. Quality assurance/quality control records and results;
- g. Non-storm water discharge inspections and visual observations and storm water discharge visual observation records (see Section C and D above);
- h. Visual observation and sample collection exception records (see Section C, D, E.5, F.4, and G above);
- i. The certification required in Section IX.B.1.b and report required in Section IX.B.2. of the General Permit; and
- j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections.

L. Annual Report

1. Low, medium and high risk dischargers shall prepare and electronically submit an annual report no later than January 1 of each year using the Storm Water Annual Report Module (SWARM).
2. Each Annual Report shall be certified in accordance with the Standard Provisions for Construction Activity. (Attachment B, Sections I and J).
3. 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.
4. The Annual Report shall include a summary and evaluation of all sampling and analysis results, original laboratory reports, a summary of all corrective actions taken during the compliance year, identification of any compliance activities or corrective actions that were not implemented.
5. The Annual Report shall include all records and reports specified in Section K.1.h. and K.1.i. above, and the analytical method, method reporting unit, and method detection limit of each analytical parameter. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit."

M. Action Level Exceedance Reporting and the ALEER

1. Medium and high risk dischargers shall prepare and electronically submit exceedances and, if necessary, an ALEER using the Storm Water Annual Report Module (SWARM).
2. Each ALEER shall be certified in accordance with the Standard Provisions. (Attachment B, Sections I and J).
3. The Discharger shall retain an electronic or paper copy of each ALEER for a minimum of three years after the date the annual report is filed.
4. The ALEER shall include:
 - a. a summary and evaluation of all sampling and analysis results;
 - b. original laboratory reports;
 - c. a summary of all corrective actions taken in response to the triggering exceedance(s);
 - d. identification of any compliance activities or corrective actions that were not implemented;
 - e. for turbidity exceedances, use the [Turbidity MUSLE](#) worksheet (or an equivalent, alternative form/worksheet) to calculate the ratio of measured effluent turbidity (using the triggering value) to MUSLE-estimated turbidity. The MUSLE equation shall be used with a C factor of 0.003; and
 - f. any additional records and reports related to the exceedance(s) and required actions.

**ATTACHMENT F:
 Sediment Transport Risk Worksheet¹**

1. Proximity to Receiving Water	Points
Is the site or any construction activities in a stream channel, wetland, lake, vernal pool, or marine near-shore habitat?	
Yes	100
Is the site or any construction activities	
<ul style="list-style-type: none"> • within 100 feet of a wetland, lake, vernal pool, or marine near-shore habitat, or • within a streamway² or 100-year floodplain (whichever is larger), or • have runoff routed directly to a surface water of the state via a pipe, channel, or ditch? 	
Yes	50
No	0
2. Area of site to be cleared and/or graded	
1 acre to 5 acres ³	25
5 acres or more	50
3. Will the site be cleared and graded outside of the designated rainy seasons⁴ and will Erosivity Index⁵ (R) be less than 5?	
Yes	0
No	100

¹ Assign points based on the dominant soil (>50%) or most critical condition that affects 10% or more of the site.

² Streamway is the width (in feet) necessary to accommodate existing and future meander pattern of a stream. Calculated as $171DA^{0.55}$ for stream drainage area (DA in square miles) < 10 square miles, $125DA^{0.55}$ for DA 10-100 square miles, and $53DA^{0.55}$ for DA > 100 square miles.

³ or less than 1 acre but part of a common development.

⁴ see page 291 in <http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-008.pdf>

⁵ Erosivity index can be obtained at <http://ei.tamu.edu>. Erosivity index and R factor are synonymous.

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4. **Erodibility Index (RKLS/T) of site**^{5,6,7,8}
- | | |
|---|-----|
| $\frac{RKLS}{T}$ for shortest sheet flow length, minimum slope ≥ 8 | 100 |
| $\frac{RKLS}{T}$ for minimum LS factor < 8 , maximum LS factor > 8 | 50 |
| $\frac{RKLS}{T}$ for maximum LS factor < 8 | 0 |
5. **Runoff potential of dominant soils**^{1,9}
- | | |
|-------------------------|----|
| Hydrologic Soil Group A | 0 |
| Hydrologic Soil Group B | 10 |
| Hydrologic Soil Group C | 20 |
| Hydrologic Soil Group D | 40 |
6. **If you are using sediment basins, will they be sized according to the standard in Attachment K?**
- | | |
|------------------|----|
| Yes | 0 |
| Not using basins | 0 |
| No | 25 |

Total Score	Sediment Transport Risk
≤ 100	Low
101-199	Medium
≥ 200	High

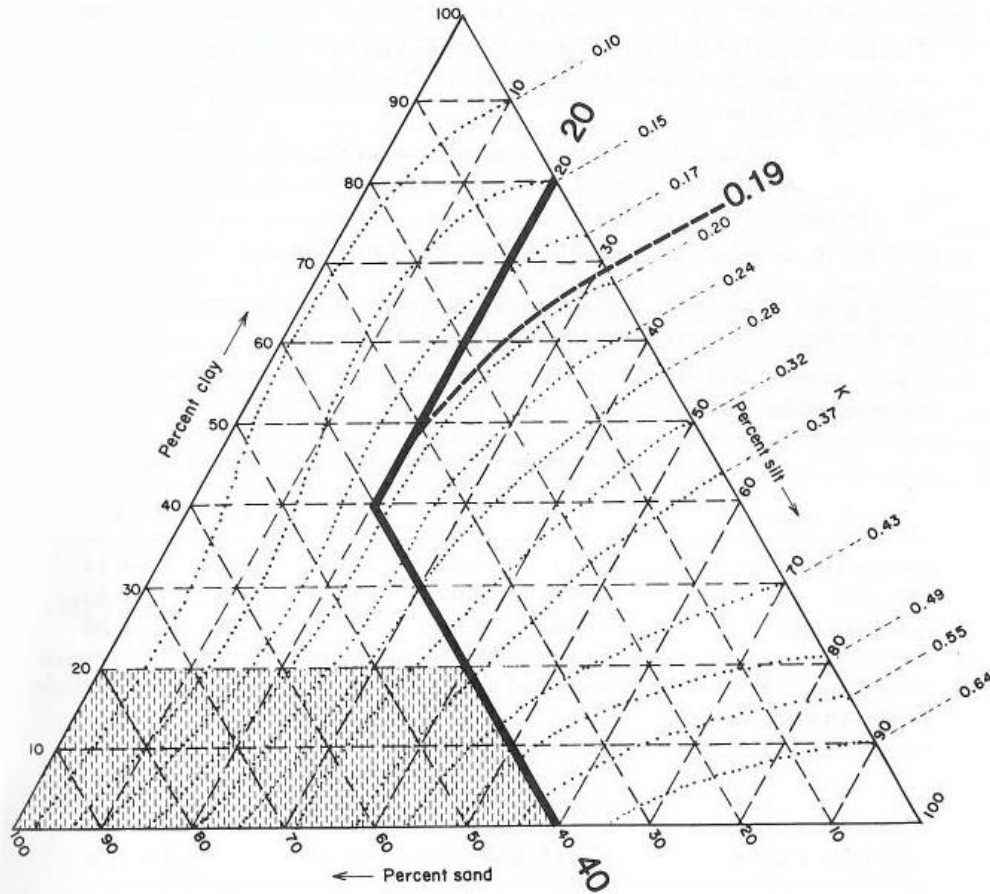
⁶ K factor is during construction. Obtain K factor from the NRCS or use nomograph (below).

⁷ LS factor can be obtained using table (below).

⁸ Soil tolerance (T) can be obtained from a local Natural Resources Conservation Service (NRCS) Field Office, published soil surveys, or from the NRCS soils website (<http://soils.usda.gov>).

⁹ Hydrologic soil groups can be obtained from a local Natural Resources Conservation Service (NRCS) Field Office, published soil surveys, or from the NRCS soils website (<http://soils.usda.gov>).

Nomograph to Estimate Values for K Factor



from Goldman (1986)

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K Value Correction Factors

Organic Matter: Add or subtract correction factor to K value as indicated in the following table.

K value	Correction factor when percent organic matter is				
	0	1	2	3	4
Greater than 0.40	+0.14	+0.07	0	-0.07	-0.14
0.20-0.40	+0.10	+0.05	0	-0.05	-0.10
Less than 0.20	+0.06	+0.03	0	-0.03	-0.06

Rock Content: Rock content is defined as the percent (by volume) of soil particles greater than 2 mm.

Unadjusted K value from the nomograph above	K values adjusted for rock content as follows		
	15-35%	35-60%	60-75%
0.10	0.05	0.05	0.02
0.15	0.10	0.05	0.02
0.17	0.10	0.05	0.02
0.20	0.10	0.05	0.02
0.24	0.15	0.10	0.05
0.28	0.15	0.10	0.05
0.32	0.17	0.10	0.05
0.37	0.20	0.10	0.05
0.43	0.24	0.15	0.10
0.49	0.28	0.15	0.10
0.55	0.32	0.17	0.10
0.64	0.37	0.20	0.15

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LS Factors for Construction Sites (From NRCS 1997-"Conservation Planning with the RUSLE")

Sheet Flow Length (ft)	Average Watershed Slope (%)																			
	0.2	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0	30.0	40.0	50.0	60.0
<3	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.32	0.35	0.36	0.38	0.39	0.41	0.45	0.48	0.53	0.58	0.63
6	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.32	0.37	0.41	0.45	0.49	0.56	0.64	0.72	0.85	0.97	1.07
9	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.32	0.38	0.45	0.51	0.56	0.67	0.80	0.91	1.13	1.31	1.47
12	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.32	0.39	0.47	0.55	0.62	0.76	0.93	1.08	1.37	1.62	1.84
15	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.32	0.40	0.49	0.58	0.67	0.84	1.04	1.24	1.59	1.91	2.19
25	0.05	0.07	0.10	0.16	0.21	0.26	0.31	0.36	0.41	0.45	0.57	0.71	0.85	0.98	1.24	1.56	1.86	2.41	2.91	3.36
50	0.05	0.08	0.13	0.21	0.30	0.38	0.46	0.54	0.62	0.70	0.91	1.15	1.40	1.64	2.10	2.67	3.22	4.24	5.16	5.97
75	0.05	0.08	0.14	0.25	0.36	0.47	0.58	0.69	0.80	0.91	1.20	1.54	1.87	2.21	2.86	3.67	4.44	5.89	7.20	8.37
100	0.05	0.09	0.15	0.28	0.41	0.55	0.68	0.82	0.96	1.10	1.46	1.88	2.31	2.73	3.57	4.59	5.58	7.44	9.13	10.63
140	0.05	0.09	0.17	0.32	0.48	0.65	0.82	1.00	1.18	1.36	1.83	2.38	2.93	3.49	4.59	5.96	7.28	9.77	12.03	14.04
150	0.05	0.09	0.17	0.33	0.50	0.68	0.86	1.05	1.24	1.43	1.92	2.51	3.09	3.68	4.85	6.30	7.70	10.35	12.75	14.89
200	0.06	0.10	0.18	0.37	0.57	0.79	1.02	1.25	1.49	1.72	2.34	3.07	3.81	4.56	6.04	7.88	9.67	13.07	16.16	18.92
250	0.06	0.10	0.19	0.40	0.64	0.89	1.16	1.43	1.71	1.99	2.72	3.60	4.48	5.37	7.16	9.38	11.55	15.67	19.42	22.78
300	0.06	0.10	0.20	0.43	0.69	0.98	1.28	1.60	1.92	2.24	3.09	4.09	5.11	6.15	8.23	10.81	13.35	18.17	22.57	26.51
400	0.06	0.11	0.22	0.48	0.80	1.14	1.51	1.90	2.30	2.70	3.75	5.01	6.30	7.60	10.24	13.53	16.77	22.95	28.60	33.67
600	0.06	0.12	0.24	0.56	0.96	1.42	1.91	2.43	2.98	3.52	4.95	6.67	8.45	10.26	13.94	18.57	23.14	31.89	39.95	47.18
800	0.06	0.12	0.26	0.63	1.10	1.65	2.25	2.89	3.57	4.24	6.03	8.17	10.40	12.69	17.35	23.24	29.07	40.29	50.63	59.93
1000	0.06	0.13	0.27	0.69	1.23	1.86	2.55	3.30	4.11	4.91	7.02	9.57	12.23	14.96	20.57	27.66	34.71	48.29	60.84	72.15

ATTACHMENT G: New and Re-development Performance Standard Worksheet

The discharger shall submit with their NOT the minimum amount of information (e.g., maps, worksheets, etc.) required to demonstrate compliance with the requirements.

Map Instructions

The discharger must submit a small-scale topographic map of the site shall be prepared to show the existing contour elevations and the pre- and post-construction drainage divides. If the project is required to demonstrate compliance with the "distributed controls" requirements, the map should show how these controls are distributed after construction is complete. Recommended scales include 1 in. = 20 ft., 1 in. = 30 ft., 1 in. = 40 ft., or 1 in = 50 ft. The suggested 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.

Worksheet Instructions

The discharger has the option of using the attached spreadsheet ([Volume calculator.xls](#), instructions below) or a more sophisticated, watershed process based model (e.g. SWMM, HSPF) to determine the required volume.

In [Volume calculator.xls](#) and on the Worksheet titled "Volume Calculator," you must complete the worksheet for each sub-drain area identified in the "drainage distribution" section.

- Step 1: Enter the total area of project (acres) in cell B5.
- Step 2: Enter the sub-watershed area (acres) in cell B6.
- Step 3: Enter the existing amount of impervious area (acres) in cell B11.
- Step 4: Enter the proposed additional amount of impervious area (acres) in cell B13.
- Step 5: Enter the 85th percentile storm event (P_{85}) for the project area (in inches)¹⁸ in cell B16.
- Step 6: Determine the mean annual precipitation (P_{annual}) for the project area (in inches)¹⁹ in cell B17.
- Step 7: Enter the area credit claimed for [non-structural](#) practices in cells L14 through L19 and complete the appropriate credit certification worksheet(s). Volume that cannot be addressed using non-structural practices must be captured in structural practices and approved by the Regional Water Board.

¹⁸ The 85th percentile storm event can be obtained from Appendix D in the California Best Management Practice New and Redevelopment Handbook (available at www.cabmphandbooks.com). The Handbook refers to the 85th percentile storm event as P6.

¹⁹ Mean annual precipitation can be obtained from Appendix D in the New and Redevelopment Handbook, Natural Resources Conservation Service (NRCS) Field Offices, or local public works and flood control agencies.

Non-structural Practices Available for Crediting - Complete All Applicable Worksheets

Tree Canopy Cover

- Within 5 years of planting, the total tree canopy covers 75% of the area to be claimed.

Downspout Disconnections

- Downspouts and any extensions must extend at least six feet from a basement and two feet from a crawl space or concrete slab.
- Downspouts shall be at least 10 feet away from the nearest impervious area to eliminate "reconnection".
- The length of the disconnection shall be at least 75 feet.
- Where a gutter/downspout system is not used or when other roof runoff devices (e.g. rain chains) are used, the roof runoff shall drain as sheet flow from the structure or drain to a planter box or landscaped area.

Impervious Area Disconnection

- The maximum contributing impervious flow path length shall be 75 feet.
- The length of the disconnection shall be equal to or greater than the contributing length. A storage device (e.g. French drain, bioretention area, gravel trench) may need to be implemented to achieve the required disconnection length.
- The impervious area to any one discharge location cannot exceed 1,000 square feet.

Sheet flow to Streamway/Buffer

- Runoff shall enter the streamway or buffer as sheet flow. The maximum contributing length shall be 150 feet for pervious areas and 75 feet for impervious areas.
- The contributing overland slope shall be 5% or less, or a level spreader shall be used.

Vegetated Swales

- All vegetated swales must be 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).
- The maximum flow velocity for runoff for the 85th percentile rainfall event shall be less than or equal to 1.0 foot per second.

Permeable Pavers

- There are a number of design considerations related to the use of permeable pavers, including the load requirement (e.g. vehicular), hydraulic requirements, and local climate of the installation.

See <http://www.lowimpactdevelopment.org/epa03/pavespec.htm> for more detail.

ATTACHMENT H: Sediment Basin Sizing

Sediment basins shall, at a minimum, be designed for a 90% reduction of suspended soil particles having a diameter of 0.02 mm or larger. The following equations are used to determine the appropriate surface area and length to width ratio to achieve the target 90% reduction.

The net effectiveness of the basin is calculated by:

Equation 1: $NE_{eff} = AE_{eff} \times PEG$

Where:

NE_{eff} = Net effectiveness of basin (90%)

AE_{eff} = Apparent effectiveness = $20(L/W_e) - (L/W_e)^2$ (L and W_e are the particle flow distance and effective basin width, respectively (ft))

PEG = Percent of particles that are equal to or greater than the design-size particle (%)

Once the PEG value is determined from the particle size analysis, it is possible to determine how effective a sediment basin will be for a 90% reduction of the suspended soil particles having a diameter of 0.02 mm or larger (the apparent effectiveness). From the apparent effectiveness, one can determine the appropriate length-to-width ratio using Figure H-1.

The next step is to calculate the runoff to the basin from a 2-year, 24-hour storm event and compare it to 3,600 cubic feet per acre draining to the basin. The greater of the two runoff volumes is then used to size a perforated riser to discharge the runoff volume over a 24- to 72-hour period. Specific guidance on sizing perforated risers is contained in the California Best Management Practice Construction Handbook (available at www.cabmphandbooks.com). Average depth and outlet depth of the basin shall be 2.2 ft and 2.0 ft, respectively. Local vector control regulations may apply. Sediment basins may be fenced if safety (worker or public) is a concern.

The design discharge and the particle settling velocity are used in Equation 1 to find the minimum water surface area of a basin.

Equation 2: $A_s = 1.2Q_{out}/V_s$

Where:

A_s = Minimum water surface area of basin (ft²)

Q_{out} = design discharge from the basin (cfs)

V_s = the settling velocity of the finest particle size determined from a soil particle size analysis or 0.02 mm (medium silt)

Once the minimum surface area is known, basin length and width can be calculated using Equations 3 and 4.

Equation 3: $L = \{(L/W_e) \times A_s\}^{0.5}$

Equation 4: $W_e = A_s / L$

Figure H-1
Apparent Effectiveness of a Sediment Basin

