



State Water Resources Control Board

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

ORDER NO. 2012-0006-DWQ
NPDES NO. CAS000002

Table with 2 columns: Description of order changes and Effective dates. Rows include adoption of 2009-0009-DWQ, effectiveness of 2009-0009-DWQ, effectiveness of 2010-0014-DWQ, expiration of 2009-0009-DWQ as amended, adoption of the current order, and effectiveness of the current order.

IT IS HEREBY ORDERED that this Order amends Order No. 2009-0009-DWQ. Additions to Order No. 2009-0009-DWQ are reflected in blue-underline text and deletions are reflected in red-strikeout text.

IT IS FURTHER ORDERED that staff are directed to prepare and post a conformed copy of Order No. 2009-000-DWQ incorporating the revisions made by this Order.

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on July 17, 2012.

AYE: Chairman Charles R. Hoppin
Vice Chair Frances Spivy-Weber
Board Member Tam M. Doduc
Board Member Steven Moore
Board Member Felicia Marcus

NAY: None

ABSENT: None

ABSTAIN: None

Handwritten signature of Jeanine Townsend
Jeanine Townsend
Clerk to the Board

CHANGES TO Order No. 2009-0009-DWQ

Fact Sheet, Section I.B.2 Court Decisions on Public Participation, Page 3

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

Fact Sheet, Section I.F Summary of Significant Changes in This General Permit, Page 5

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

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

Receiving Water Monitoring and Reporting: this General Permit requires some Risk Level 3 [and LUP Type 3](#) dischargers to monitor receiving waters and conduct bioassessments.

Fact Sheet, Section II.E.4, Discharge Prohibitions, Page 13

These authorized non-storm water discharges must:

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

Fact Sheet, Section II.F, Effluent Standards for All Types of Discharges, Page 13-19

1. Technology-Based Effluent Limitations

Permits for storm water discharges associated with construction activity must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require controls of pollutant discharges that utilize best available technology economically achievable (BAT) for toxic pollutants and non conventional pollutants and best conventional pollutant control technology (BCT) for conventional

pollutants. Additionally, these provisions require controls of pollutant discharges to reduce pollutants and any more stringent controls necessary to meet water quality standards. The U.S. EPA has already established such limitations, known as effluent limitation guidelines (ELGs), for some industrial categories. This is not the case with construction discharges. In instances where there are no ELGs the permit writer is to use best professional judgment (BPJ) to establish requirements that the discharger must meet using BAT/BCT technology. ~~This General Permit contains both narrative effluent limitations and new numeric effluent limitations for pH and turbidity, set using the best professional judgment (BPJ) equivalent to BAT and BCT (respectively).~~ This General Permit contains only narrative effluent limitations and does not contain numeric effluent limitations, except for Active Treatment Systems (ATS).

Order No. 2009-0009-DWQ, as originally adopted by the State Water Board on September 2, 2009, contained numeric effluent limitations for pH (within the range of 6.0 and 9.0 pH units) and turbidity (500 NTU) that applied only to Risk Level 3 and LUP Type 3 construction sites. The State Water Board adopted the numeric effluent limitations as technology-based effluent limitations based upon its best professional judgment. The California Building Industry Association, the Building Industry Legal Defense Foundation, and the California Business Properties Association (petitioners) challenged Order No. 2009-0009-DWQ in *California Building Industry Association et al. v. State Water Resources Control Board*. On December 27, 2011, the Superior Court issued a judgment and writ of mandamus. The Superior Court ruled in favor of the State Water Board on almost all of the issues the petitioners raised, but the Superior Court invalidated the numeric effluent limitations for pH and turbidity for Risk Level 3 and LUP Type 3 sites because it determined that the State Water Board did not have sufficient BMP performance data to support those numeric effluent limitations. Therefore, the Superior Court concluded that the State Water Board did not comply with the federal regulations that apply to the use of best professional judgment. In invalidating the numeric effluent limitations, the Superior Court also suspended two ancillary requirements (a compliance storm event provision and receiving water monitoring at Risk Level 3 and LUP Type 3 sites that violated the numeric effluent limitations) that related solely to the invalidated numeric effluent limitations.

As a result of the Superior Court's writ of mandamus, this Order no longer contains numeric effluent limitations for pH and turbidity, except for ATS. In addition, as a result of the Superior Court's writ of mandamus, the receiving water monitoring requirements for Risk Level 3 and LUP Type 3 sites were suspended until the State Water Board amended this Order to restore the receiving water monitoring requirements. As amended, this Order now requires Risk Level 3 and LUP Type 3 Dischargers with direct discharges to surface waters to conduct receiving water monitoring whenever their effluent exceeds specified receiving water monitoring triggers. The receiving water monitoring triggers were established at the same levels as the previous numeric effluent limitations (effluent pH outside the range of 6.0 and 9.0 pH units or turbidity exceeding 500 NTU). In restoring the receiving water monitoring requirements, the State Water Board determined that it was appropriate to require receiving water monitoring for these types of sites with direct discharges to surface waters that exceeded the receiving water monitoring triggers under any storm event scenarios, because these sites represent the highest threat to receiving water quality. An exceedance of a receiving water monitoring trigger does not constitute a violation of this General Permit. These receiving water monitoring requirements take effect on the effective date of the amendment to this Order.

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

~~The numeric effluent limitations for pH and turbidity are based upon BPJ, which authorizes the State Water Board to issue a permit containing "such conditions as the Administrator determines are necessary to carry out the provisions of this Chapter" (CWA § 402(a)(1), 33 U.S.C. § 1342(a)(1).) Because the USEPA has not yet issued an effluent limit guideline for storm water, the State Water Board must use BPJ to consider the appropriate technology for the category or class of point sources, based upon all available information and any unique factors relating to the sources. In addition, the permitting authority~~

~~must consider a number of factors including the cost of achieving effluent reductions in relation to the effluent reduction benefits, the age of the equipment and facilities, the processes employed and any required process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and other such other factors as the State Water Board deems appropriate (CWA 304(b)(1)(B)).~~

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

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

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

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

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

pH ~~NEL~~ Receiving Water Monitoring Trigger

Given the potential contaminants, the minimum standard method for control of pH in runoff requires the use of preventive measures such as avoiding concrete pours during rainy weather, covering concrete and directing flow away from fresh concrete if a pour occurs during rain, covering scrap drywall and stucco materials when stored outside and potentially exposed to rain, and other housekeeping measures. If necessary, pH-impaired storm water from construction sites can be treated in a filter or settling pond or basin, with additional natural or chemical treatment required to meet pH limits set forth in this permit. The basin or pond acts as a collection point and holds storm water for a sufficient period for the contaminants to be settled out, either naturally or artificially, and allows any additional treatment to take place. The State Water Board considers these techniques to be equivalent to BCT. In determining the pH concentration ~~limit~~ trigger for discharges, the State Water Board used BPJ to set these limitations.

The chosen ~~limits were~~ trigger was established by calculating three standard deviations above and below the mean pH of runoff from highway construction sites¹ in California. Proper implementation of BMPs should result in discharges that are within the range of 6.0 to 9.0 pH Units.

Turbidity ~~NEL~~ Receiving Water Monitoring Trigger

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

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

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

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

Since the turbidity ~~NEL~~ receiving water monitoring trigger represents an appropriate threshold level expected at a site, compliance with this value does not necessarily represent compliance with either the narrative effluent limitations (as enforced through the BAT/BCT standard) or the receiving water limitations. In the San Diego region, some inland surface waters have a receiving water objective for turbidity equal to 20 NTU. Obviously a discharge up to, but not exceeding, the turbidity ~~NEL~~ receiving

¹ Caltrans Construction Sites Runoff Characterization Study, 2002. Available at: <http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-055.pdf>.

[water monitoring trigger](#) of 500 NTU may still cause or contribute to the exceedance of the 20 NTU standard. Most of the waters of the State are protected by turbidity objectives based on background conditions.

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

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

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

Table 2 - Results of Ecoregion Analysis

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

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

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

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

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

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

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

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

<p>Mean: 512.23 NTU Standard Deviation: 686.85 Margin of Error: 321.45 Confidence Interval: 190.78 NTU (Low) 833.68 NTU (High)</p>
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Based on a constructed 95% confidence interval, an ACL order turbidity measurement will be between 190.78 – 833.68 NTU. 500 NTU falls within this range. Using the same data set, a small-sample hypothesis test was also performed to test if the ACL turbidity data set contains enough information to cast doubt on choosing a 500 NTU as a mean. 500 NTU was again chosen due to its proposed use as an acceptable NEL value. The test was carried out using a 95% confidence interval. Results indicated that the ACL turbidity data set *does not* contain significant sample evidence to reject the claim of 500 NTU as an acceptable mean for the ACL turbidity population.

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

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

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

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

Compliance Storm Event

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

~~chosen due to its relative infrequent occurrence and the fact that the runoff volume associated with it is not as large as a 10-year, 24-hour storm event. The discharger shall determine this value using Western Regional Climate Center Precipitation Frequency Maps³ for 5-year 24-hour storm events in Northern and Southern California (note that these are expressed in tenths of inches—divide by 10 to get inches).~~
[While this General Permit no longer contains “compliance storm event” exceptions from technology-based NELs, the “compliance storm event” exception from the ATS NELs remain in effect. See Section K of this Fact Sheet, and Attachment F of this General Permit for more information.](#)

Fact Sheet, Section II.I.1, Traditional Construction Monitoring Requirements, Page 21

Table 4 - Required Monitoring Elements for Risk Levels

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

Fact Sheet, Section II.I.1.c, Effluent Monitoring, Page 23-24

Federal regulations⁴ require effluent monitoring for discharges subject to NALs ~~and NELs~~. Subsequently, all Risk Level 2 and 3 dischargers must perform sampling and analysis of effluent discharges to characterize discharges associated with construction activity from the entire area disturbed by the project. Dischargers must collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of ½ inch or more at the time of discharge.

Table 5 - Storm Water Effluent Monitoring Requirements by Risk Level

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

⁴ 40 C.F.R. § 122.44.

Risk Level 1 dischargers must analyze samples for:

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

Risk Level 2 dischargers must analyze samples for:

- i. pH and turbidity;
- ii. any parameters indicating the presence of pollutants identified in the pollutant source assessment required in Attachment D contained in the General Permit, and
- iii. any additional parameters for which monitoring is required by the Regional Water Board.

Risk Level 3 dischargers must analyze samples for:

- i. pH, turbidity ~~and SSC~~;
- ii. any parameters indicating the presence of pollutants identified in the pollutant source assessment required in Attachment E contained in the General Permit, and
- iii. any additional parameters for which monitoring is required by the Regional Water Board.

Fact Sheet, Section II.I.3, Receiving Water Monitoring, Page 26-27

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

a. Bioassessment Monitoring

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

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

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

Table 6 - Receiving Water Monitoring Requirements

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

4. Reporting Requirements

~~a. NEL Violation Report~~

~~All Risk Level 3 and LUP Type 3 dischargers must electronically submit all storm event sampling results to the State and Regional Water Boards, via SMARTS, no later than 5 days after the conclusion of the storm event. The purpose of the electronic filing of the NEL Violation Report is to 1) inform stakeholder agencies and organizations and the general public, and 2) notify the State and Regional Water Boards of the exceedance so that they can determine whether any follow-up (e.g., inspection, enforcement, etc.) is necessary to bring the site into compliance.~~

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

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

b. NAL Exceedance Report

All Risk Level 3 and LUP Type 3 dischargers must electronically submit all storm event sampling results to the State And Regional Boards, via the electronic data system, no later than 10 ~~5~~ days after the conclusion of the storm event.

Fact Sheet, Section II.J.1.a, Overall Risk Determination, Page 30

In response to public comments, the Risk Level requirements have also been changed such that Risk Level 1 projects will be subject to minimum BMP and visual monitoring requirements, Risk Level 2 will be subject to NALs and some additional monitoring requirements, and Risk Level 3 projects will be subject to some additional requirements, [NALs](#) ~~NELs~~, and more rigorous monitoring requirements such as receiving water monitoring and in some cases bioassessment.

Fact Sheet, Section II.J.1.b, Effluent Standards, Page 30

~~Risk Level 2, and 3 dischargers are subject to numeric effluent standards comparable to the project's risk to water quality.~~ Risk Level 2 dischargers that pose a medium risk to water quality are subject to technology-based NALs for pH and turbidity. Risk Level 3 dischargers that pose a high risk to water quality are [also](#) subject to technology-based NALs ~~and technology-based NELs~~ for pH and turbidity.

Fact Sheet, Section II.J.2.b, Linear Effluent Standards, Page 35

All LUPs are subject to the narrative effluent limitations specified in the General Permit.

~~Type 2 and 3 LUPs are subject to NELs comparable to the project type's risk to water quality.~~ Type 2 [and Type 3](#) projects ~~that pose an intermediate risk to water quality are subject to technology-based NALs for pH and turbidity.~~ Type 3 projects posing a high risk to water quality are subject to technology-based NALs ~~and NELs~~ for pH and turbidity.

Order, Section I.H, Findings – Effluent Standards, Page 9-10

52. The State Water Board convened a blue ribbon panel of storm water experts that submitted a report entitled, "The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities," dated June 19, 2006. The panel concluded that numeric limits or action levels are technically feasible to control construction storm water discharges, provided that certain conditions are considered. The panel also concluded that numeric effluent limitations (NELs) are feasible for discharges from construction sites that utilize an ATS. The State Water Board has incorporated the expert panel's suggestions into this General Permit, which includes **both** numeric action levels (NALs) **and NELs** for pH and turbidity, and special numeric limits for ATS discharges.

Numeric Effluent Limitations

- ~~53. Discharges of storm water from construction activities may become contaminated from alkaline construction materials resulting in high pH (greater than pH 7). Alkaline construction materials include, but are not limited to, hydrated lime, concrete, mortar, cement kiln dust (CKD), Portland cement treated base (CTB), fly ash, recycled concrete, and masonry work. This General Permit includes an NEL for pH (6.0-9.0) that applies only at sites that exhibit a "high risk of high pH discharge." A "high risk of high pH discharge" can occur during the complete utilities phase, the complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations to the background pH of any discharges.~~
- ~~54. For Risk Level 3 discharges, this General Permit establishes technology-based, numeric effluent limitations (NELs) for turbidity of 500 NTU. Exceedances of the turbidity NEL constitutes a violation of this General Permit.~~
- ~~55. This General Permit establishes a 5 year, 24 hour (expressed in inches of rainfall) Compliance Storm Event exemption from the technology-based NELs for Risk Level 3 dischargers.~~

Determining Compliance with Numeric Limitations

56. This General Permit sets a pH NAL of 6.5 to 8.5, and a turbidity NAL of 250 NTU. The purpose of the NAL and its associated monitoring requirement is to provide operational information regarding the performance of the measures used at the site to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges. ~~The NALs in this General Permit for pH and turbidity are not directly enforceable and do not constitute NELs.~~ An exceedance of a NAL does not constitute a violation of this General Permit.
57. This General Permit requires dischargers with NAL exceedances to immediately implement additional BMPs and revise their Storm Water Pollution Prevention Plans (SWPPPs) accordingly to either prevent pollutants and authorized non-storm water discharges from contaminating storm water, or to substantially reduce the pollutants to levels consistently below the NALs. NAL exceedances are reported in the State Water Boards SMARTS system, and the discharger is required to provide an NAL Exceedance Report when requested by a Regional Water Board.
- ~~58. If run-on is caused by a forest fire or any other natural disaster, then NELs do not apply.~~
- ~~59. Exceedances of the NELs are a violation of this Permit. This General Permit requires dischargers with NEL exceedances to implement additional monitoring, BMPs, and revise their SWPPPs accordingly. Dischargers are required to notify the State and Regional Water Boards of the violation through the State Water Boards SMARTS system, and provide an NEL Violation Report sharing additional information concerning the NEL exceedance.~~

Order, Section I.J, Findings – Sampling, Monitoring, Reporting and Record Keeping, Page 11

63. For all Risk Level 3/[LUP Type 3](#) and Risk Level 2/[LUP Type 2](#) sites, this General Permit requires effluent monitoring for pH and turbidity. Sampling, analysis and monitoring requirements for effluent monitoring for pH and turbidity are contained in this General Permit.
64. Risk Level 3 [and LUP Type 3](#) sites [with effluent that exceeds the Receiving Water Monitoring Triggers in violation of the Numeric Effluent Limitations](#) contained in this General Permit and with direct discharges to receiving water are required to conduct receiving water monitoring. [An exceedance of a Receiving Water Monitoring Trigger does not constitute a violation of this General Permit.](#)
65. [This General Permit establishes a 5 year, 24 hour \(expressed in inches of rainfall\) as an exemptions to the receiving water monitoring requirements for Risk Level 3 and LUP Type 3 dischargers.](#)
66. [If run-on is caused by a forest fire or any other natural disaster, then receiving water monitoring triggers do not apply.](#)
67. For Risk Level 3 [and LUP Type 3](#) sites larger than 30 acres and with direct discharges to receiving waters, this General Permit requires bioassessment sampling before and after site completion to determine if significant degradation to the receiving water's biota has occurred. Bioassessment sampling guidelines are contained in this General Permit.

Order, Section III.C, Discharge Prohibitions, Page 20

Authorized non-storm water discharges may include those from de-chlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, uncontaminated ground water from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. The discharge of non-storm water is authorized under the following conditions:

1. The discharge does not cause or contribute to a violation of any water quality standard;
2. The discharge does not violate any other provision of this General Permit;
3. The discharge is not prohibited by the applicable Basin Plan;
4. The discharger has included and implemented specific BMPs required by this General Permit to prevent or reduce the contact of the non-storm water discharge with construction materials or equipment.
5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
6. The discharge is monitored and meets the applicable NALs ~~and NELs~~; and
7. The discharger reports the sampling information in the Annual Report.

Order, Section V, Effluent Standards & [Receiving Water Monitoring](#), Page 28-29

B. Numeric Effluent Limitations (NELs)

Table 1- ~~Numeric Effluent Limitations~~, Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level	Numeric Effluent Limitation
pH	Field test with calibrated portable instrument	Risk Level 2	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5	N/A
		Risk Level 3			lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Risk Level 2	1	NTU	250 NTU	N/A
		Risk Level 3			250 NTU	500 NTU

1. ~~Numeric Effluent Limitations (NELs):~~

a. ~~Storm Event, Daily Average pH Limits~~ – For Risk Level 3 dischargers, the pH of storm water and non-storm water discharges shall be within the ranges specified in Table 1 during any site phase where there is a "high risk of pH discharge."⁵

b. ~~Storm Event Daily Average Turbidity Limit~~ – For Risk Level 3 dischargers, the turbidity of storm water and non-storm water discharges shall not exceed 500 NTU.

2. ~~If daily average sampling results are outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file monitoring results in violation within 5 business days of obtaining the results.~~

3. ~~Compliance Storm Event:~~

~~Discharges of storm water from Risk Level 3 sites shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for Risk Level 3 discharges is the 5 year, 24 hour storm (expressed in tenths of an inch of rainfall), as determined by using these maps:~~

~~<http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif>
<http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif>~~

⁵ ~~A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.~~

~~Compliance storm event verification shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.~~

- ~~4. Dischargers shall not be required to comply with NELs if the site receives run-on from a forest fire or any other natural disaster.~~

C. Receiving Water Monitoring Triggers

1. The receiving water monitoring triggers for Risk Level 3 dischargers with direct discharges to surface waters are triggered when the daily average effluent pH values during any site phase when there is a high risk of pH discharge⁶ fall outside of the range of 6.0 and 9.0 pH units, or when the daily average effluent turbidity exceeds 500 NTU.
2. Risk Level 3 dischargers with direct discharges to surface waters shall conduct receiving water monitoring whenever their effluent monitoring results exceed the receiving water monitoring triggers. If the pH trigger is exceeded, the receiving water shall be monitored for pH for the duration of coverage under this General Permit. If the turbidity trigger is exceeded, the receiving water shall be monitored for turbidity and SSC for the duration of coverage under this general permit.
3. Risk Level 3 dischargers with direct discharges to surfaces waters shall initiate receiving water monitoring when the triggers are exceeded unless the storm event causing the exceedance is determined after the fact to equal to or greater than the 5-year 24-hour storm (expressed in inches of rainfall) as determined by using these maps:

<http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif>
<http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif>

Verification of the 5-year 24-hour storm event shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.

4. If run-on is caused by a forest fire or any other natural disaster, then receiving water monitoring triggers do not apply.

⁶ A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.

Attachment A, Section D.2, Discharge Prohibitions, Page 7

LUP dischargers are prohibited from discharging non-storm water that is not otherwise authorized by this General Permit. Non-storm water discharges authorized by this General Permit⁷ may include, fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, street cleaning, dewatering,⁸ uncontaminated groundwater from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. Such discharges are allowed by this General Permit provided they are not relied upon to clean up failed or inadequate construction or post-construction BMPs designed to keep materials on site. These authorized non-storm water discharges:

- a. Shall not cause or contribute to a violation of any water quality standard;
- b. Shall not violate any other provision of this General Permit;
- c. Shall not violate any applicable Basin Plan;
- d. Shall comply with BMPs as described in the SWPPP;
- e. Shall not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
- f. Shall be monitored and meets the applicable NALs ~~and NELs~~; and
- g. Shall be reported by the discharger in the Annual Report.

Attachment A, Section F, Effluent Standards & Receiving Water Monitoring, Page 14-15

~~2. Numeric Effluent Limitations (NELs)~~

Table 1. ~~Numeric Effluent Limitations~~, Numeric Action Levels, Test Methods, Detection Limits, and Reporting Units

Parameter	Test Method	Discharge Type	Min. Detection Limit	Units	Numeric Action Level	Numeric Effluent Limitation
pH	Field test with calibrated portable instrument	LUP Type 2	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5	N/A
		LUP Type 3			lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0

⁷ Dischargers must identify all authorized non-storm water discharges in the LUP's SWPPP and identify BMPs that will be implemented to either eliminate or reduce pollutants in non-storm water discharges. Regional Water Boards may direct the discharger to discontinue discharging such non-storm water discharges if determined that such discharges discharge significant pollutants or threaten water quality.

⁸ Dewatering activities may be prohibited or need coverage under a separate permit issued by the Regional Water Boards. Dischargers shall check with the appropriate Regional Water Boards for any required permit or basin plan conditions prior to initial dewatering activities to land, storm drains, or waterbodies.

Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	LUP Type 2	1	NTU	250 NTU	N/A
		LUP Type 3			250 NTU	500 NTU

~~a. Numeric Effluent Limitations (NELs):~~

~~i. Storm Event, Daily Average pH Limits – For LUP Type 3 dischargers, the daily average pH of storm water and non-storm water discharges shall be within the ranges specified in Table 1 during any project phase where there is a "high risk of pH discharge."⁹~~

~~ii. Storm Event Daily Average Turbidity Limit – For LUP Type 3 dischargers, the daily average turbidity of storm water and non-storm water discharges shall not exceed 500 NTU.~~

~~b. If a daily average sample result is outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file the results in violation within 5 business days of obtaining the results.~~

~~c. Compliance Storm Event:~~

~~Discharges of storm water from LUP Type 3 sites shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for LUP Type 3 discharges is the 5-year, 24-hour storm (expressed in tenths of an inch of rainfall), as determined by using these maps:~~

~~<http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif>~~

~~<http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif>~~

~~Compliance storm event verification shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.~~

~~d. Dischargers shall not be required to comply with NELs if the site receives run-on from a forest fire or any other natural disaster.~~

3. Receiving Water Monitoring Triggers

a. The receiving water monitoring triggers for LUP Type 3 dischargers with direct discharges to surface waters are triggered when the daily average effluent pH values during any site phase when there is a high risk of pH discharge¹⁰ fall outside of the range of 6.0 and 9.0 pH units, or when the daily average effluent turbidity exceeds 500 NTU.

⁹ ~~A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.~~

¹⁰ A period of high risk of pH discharge is defined as a project's complete utilities phase, complete vertical build phase, and any portion of any phase where significant amounts of materials are placed directly on the land at the site in a manner that could result in significant alterations of the background pH of the discharges.

- b. LUP Type 3 dischargers with direct discharges to surface waters shall conduct receiving water monitoring whenever their effluent monitoring results exceed the receiving water monitoring triggers. If the pH trigger is exceeded, the receiving water shall be monitored for pH for the duration of coverage under this General Permit. If the turbidity trigger is exceeded, the receiving water shall be monitored for turbidity and SSC for the duration of coverage under this General Permit.

- c. LUP Type 3 dischargers with direct discharges to surface waters shall initiate receiving water monitoring when the triggers are exceeded unless the storm event causing the exceedance is determined after the fact to equal to or greater than the 5-year 24-hour storm (expressed in inches of rainfall) as determined by using these maps:

<http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif>
<http://www.wrcc.dri.edu/pcpnfreq/sca5y24.gif>

Verification of the 5-year 24-hour storm event shall be done by reporting on-site rain gauge readings as well as nearby governmental rain gauge readings.

- d. If run-on is caused by a forest fire or any other natural disaster, then receiving water monitoring triggers do not apply.

Attachment A, Section J, LUP Type-Specific Requirements, Page 20-21

1. Effluent Standards

- b. Narrative – LUP dischargers shall comply with the narrative effluent standards below.
 - i. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.
 - ii. LUP dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.
- c. Numeric – LUP Type 1 dischargers are not subject to a numeric effluent standard
- d. Numeric –LUP Type 2 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU.
- e. Numeric – LUP Type 3 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU. ~~In addition, LUP Type 3 dischargers are subject to a pH NEL of 6.0-9.0 and a turbidity NEL of 500 NTU.~~

Attachment A, Section M.4, LUP Type 2&3 Monitoring and Reporting Requirements, Page 36-38

- b. LUP Type 2 & 3 Storm Water Effluent Monitoring Requirements

Table 4. LUP Type 2 & 3 Effluent Monitoring Requirements

LUP Type	Frequency	Effluent Monitoring
2	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	Turbidity, pH, and non-visible pollutant parameters (if applicable)
3	Minimum of 3 samples per day characterizing discharges associated with construction activity from the project active areas of construction.	turbidity, pH, suspended sediment concentrations (SSC)¹⁴ (only if turbidity NEL exceeded), plus and non-visible pollutant parameters (if applicable)

- i. LUP Type 2 & 3 dischargers shall collect storm water grab samples from sampling locations characterizing discharges associated with activity from the LUP active areas of construction. At a minimum, 3 samples shall be collected per day of discharge.
- ii. LUP Type 2 & 3 dischargers shall collect samples of stored or contained storm water that is discharged subsequent to a storm event producing precipitation of ½ inch or more at the time of discharge.
- iii. LUP Type 2 & 3 dischargers shall ensure that storm water grab sample(s) obtained be representative of the flow and characteristics of the discharge.
- iv. LUP Type 2 & 3 dischargers shall analyze their effluent samples for:
 - (1) pH and turbidity
 - (2) Any additional parameter for which monitoring is required by the Regional Water Board.

~~v. LUP Type 3 dischargers that have violated the turbidity daily average NEL shall analyze subsequent effluent samples for turbidity and SSC.~~

c. LUP Type 2 & 3 Storm Water Effluent Sampling Locations

- i. LUP Type 2 & 3 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire disturbed project or area.
- ii. LUP Type 2 & 3 dischargers may monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to exceedance of NALs ~~or NELs (applicable to Type 3).~~
- iii. LUP Type 2 & 3 dischargers shall select analytical test methods from the list provided in Table 5 below.
- iv. LUP Type 2 & 3 dischargers shall ensure that all storm water sample collection preservation and handling shall be conducted in accordance with the “Storm Water Sample Collection and Handling Instructions” below.

¹⁴ ~~Suspended Sediment Concentration monitoring is required for any Type 3 area that exceeds its turbidity NEL.~~

d. LUP Type 3 Receiving Water Monitoring Requirements

- i. In the event that an LUP Type 3 discharger's effluent ~~violates an applicable NEL~~ exceeds the receiving water monitoring triggers of 500 NTU turbidity or pH range of 6.0-9.0, contained in this General Permit and has a direct discharge to receiving waters, the LUP discharger shall subsequently sample Receiving Waters (RWs) for turbidity, pH (if applicable) and SSC for the duration of coverage under this General Permit. In the event that an LUP Type 3 discharger utilizing ATS with direct discharges into receiving waters discharges effluent that exceeds the NELs in this permit, the discharger shall subsequently sample RWs for turbidity, pH (if applicable), and SSC for the duration of coverage under this General Permit.
- ii. LUP Type 3 dischargers that meet the project criteria in Appendix 3 of this General Permit and have more than 30 acres of soil disturbance in the project area or project section area designated as Type 3, shall comply with the Bioassessment requirements prior to commencement of construction activity.
- iii. LUP Type 3 dischargers shall obtain RW samples in accordance with the requirements of the Receiving Water Sampling Locations section (Section M.4.cd of this Attachment).

e. LUP Type 3 Receiving Water Sampling Locations

- i. **Upstream/up-gradient RW samples:** LUP Type 3 dischargers shall obtain any required upstream/up-gradient receiving water samples from a representative and accessible location as close as possible to and upstream from the effluent discharge point.
- ii. **Downstream/down-gradient RW samples:** LUP Type 3 dischargers shall obtain any required downstream/down-gradient receiving water samples from a representative and accessible location as close as possible to and downstream from the effluent discharge point.
- iii. If two or more discharge locations discharge to the same receiving water, LUP Type 3 dischargers may sample the receiving water at a single upstream and downstream location.

Attachment A, Section M.4, LUP Type 2&3 Monitoring and Reporting Requirements, Page 41

- xii. Refer to the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP) ~~Quality Assurance Management Plan (QAMP)~~ for more information on sampling collection and analysis. See http://www.waterboards.ca.gov/water_issues/programs/swamp/¹²
~~QAMP Link:~~
~~http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml~~

¹² Additional information regarding ~~QAMP~~ can be found at ~~<http://mpsl.mlml.calstate.edu/swgacompare.htm>~~ SWAMP's QAPrP can be found at: http://www.waterboards.ca.gov/water_issues/programs/swamp/.

Attachment A, Section M.4, LUP Type 2&3 Monitoring and Reporting Requirements, Page 42-43

Table 5. Test Methods, Detection Limits, Reporting Units and Applicable NALs/~~NELs~~

Parameter	Test Method	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Levels	Numeric Effluent Limitation (LUP Type 3) <u>Receiving Water Monitoring Trigger</u>
pH	Field test with calibrated portable instrument	Type 2 & 3	0.2	pH units	Lower = 6.5 upper = 8.5	Lower = 6.0 upper = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Type 2 & 3	1	NTU	250 NTU	500 NTU
SSC	ASTM Method D 3977-97 ¹³	Type 3 if NEL <u>Receiving Water Monitoring Trigger</u> is exceeded	5	Mg/L	N/A	N/A
Bioassessment	(STE) Level I of (SAFIT), ¹⁴ fixed-count of 600 org/sample	Type 3 LUPs > 30 acres	N/A	N/A	N/A	N/A

i. LUP Type 2 & 3 Monitoring Methods

i. The LUP Type 2 or 3 discharger's project M&RP shall include a description of the following items:

- (1) Visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures.

¹³ ASTM, 1999, Standard Test Method for Determining Sediment Concentration in Water Samples: American Society of Testing and Materials, D 3977-97, Vol. 11.02, pp. 389-394

¹⁴ The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

- (2) Sampling locations, and sample collection and handling procedures. This shall include detailed procedures for sample collection, storage, preservation, and shipping to the testing lab to assure that consistent quality control and quality assurance is maintained. Dischargers shall attach to the monitoring program a copy of the Chain of Custody form used when handling and shipping samples.
 - (3) Identification of the analytical methods and related method detection limits (if applicable) for each parameter required in Section M.4.f above.
- ii. LUP Type 2 & 3 dischargers shall ensure that all sampling and sample preservation be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses shall be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of field analysis conducted by the discharger for turbidity and pH, all analyses shall be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services (SSC exception). The LUP discharger shall conduct its own field analysis of pH and may conduct its own field analysis of turbidity if the discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis.

j. LUP Type 2 & 3 Analytical Methods

LUP Type 2 & 3 dischargers shall refer to Table 5 above for test Methods, detection Limits, and reporting Units.

- i. **pH:** LUP Type 2 & 3 dischargers shall perform pH analysis on-site with a calibrated pH meter or pH test kit. The LUP discharger shall record pH monitoring results on paper and retain these records in accordance with Section M.4.o, below.
- ii. **Turbidity:** LUP Type 2 & 3 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1. The results shall be recorded in the site log book in Nephelometric Turbidity Units (NTU).
- iii. **Suspended sediment concentration (SSC):** LUP Type 3 dischargers exceeding their ~~turbidity NEL~~, [Receiving Water Monitoring Trigger](#) shall perform SSC analysis using ASTM Method D3977-97.
- iv. **Bioassessment:** LUP Type 3 dischargers shall perform bioassessment sampling and analysis according to Appendix 3 of this General Permit.

Attachment A, Section M.4, LUP Type 2&3 Monitoring and Reporting Requirements, Page 45

~~n. NEL Violation Report~~

- ~~i. All LUP Type 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 5 days after the conclusion of the storm event.~~

- ~~ii. In the event that a LUP Type 3 discharger has violated an applicable NEL, the discharger shall submit an NEL Violation Report to the State Water Board no later than 24 hours after the NEL exceedance has been identified.~~
- ~~iii. The LUP Type 3 discharger shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity.~~
- ~~iv. The LUP Type 3 discharger shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the violation report is filed.~~
- ~~v. The LUP Type 3 discharger shall include in the NEL Violation Report:
 - ~~(1) the analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit"); and~~
 - ~~(2) the date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation.~~
 - ~~(3) Description of the current on-site BMPs, and the proposed corrective actions taken to manage the NEL exceedance.~~~~
- ~~vi. Compliance Storm Exemption:—
In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event (see Section F.2.c of this Attachment), the LUP Type 3 discharger shall report the on-site rain gauge and nearby governmental rain gauge readings for verification.~~

Attachment D, Section I, Risk Level 2 Monitoring and Reporting Requirements, Page 10-11

2. Objectives

The CSMP shall be developed and implemented to address the following objectives:

- a. To demonstrate that the site is in compliance with the Discharge Prohibitions and applicable Numeric Action Levels (NALs)/~~Numeric Effluent Limitations (NELs)~~ of this General Permit.
- b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives.
- c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges.
- d. To determine whether BMPs included in the SWPPP/Rain Event Action Plan (REAP) are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

Attachment D, Section I.5.d, Risk Level 2 – Storm Water Discharge Water Quality Sampling Locations, Page 13

Effluent Sampling Locations

- d. Risk Level 2 dischargers shall monitor and report site run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs ~~or NELs~~.

Attachment D, Section I.7, Risk Level 2- Storm Water Sample Collection and Handling Instructions, Page 14

- a. Risk Level 2 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.
- b. Risk Level 2 dischargers shall ensure that testing laboratories will receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory), and shall use only the sample containers provided by the laboratory to collect and store samples.
- c. Risk Level 2 dischargers shall designate and train personnel to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP).¹⁵

¹⁵ Additional information regarding SWAMP's QAPrP ~~and QAMP~~ can be found at http://www.waterboards.ca.gov/water_issues/programs/swamp/.
QAPrP: http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf.
~~QAMP: http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml.~~

Attachment E, Section A.2, Effluent Standards, Page 1

2. ~~Numeric~~ –Risk Level 3 dischargers are subject to a pH NAL of 6.5-8.5, and a turbidity NAL of 250 NTU. ~~In addition, Risk Level 3 dischargers are subject to a pH NEL of 6.0-9.0 and a turbidity NEL of 500 NTU.~~

Attachment E, Section I, Risk Level 3 Monitoring and Reporting Requirements, Page 10

Table 2- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
3	X	X	X	X	X	X	X ¹⁶

Attachment E, Section I.2, Risk Level 3 Monitoring and Reporting Requirements, Page 11

2. Objectives

The CSMP shall be developed and implemented to address the following objectives:

- a. To demonstrate that the site is in compliance with the Discharge Prohibitions and applicable Numeric Action Levels (NALs) ~~/Numeric Effluent Limitations (NELs)~~ of this General Permit.

Attachment E, Section I.4.e, Risk Level 3- Water Quality Sampling and Analysis, Page 13

- e. Risk 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than ~~5~~ 10 days after the conclusion of the storm event.

Attachment E, Section I.4.f, Risk Level 3- Water Quality Sampling and Analysis, Page 13

- ~~f. Risk Level 3 discharger sites that have violated the turbidity daily average NEL shall analyze subsequent effluent samples for all the parameters specified in Section I.4.e, above, and Suspended Sediment Concentration (SSC).~~

Receiving Water Monitoring Requirements

- g. In the event that a Risk Level 3 discharger's ~~effluent exceeds~~ ~~violates an NEL~~ the daily average receiving water monitoring trigger of 500 NTU turbidity or the daily average pH range 6.0-9.0 contained in this General Permit and has a direct discharge into receiving waters, the Risk Level 3 discharger shall subsequently sample receiving waters (RWs) for ~~all parameter(s) required in Section I.4.e above~~ turbidity, pH (if applicable), and SSC for the duration of coverage under this General Permit. If a Risk Level 3 discharger utilizing ATS with direct discharges into receiving waters discharges effluent that exceeds the NELs in this permit, the discharger shall subsequently sample RWs for turbidity, pH (if applicable), and SSC for the duration of coverage under this General Permit.

¹⁶ When ~~NEL~~ receiving water monitoring trigger is exceeded.

- h. Risk Level 3 dischargers disturbing 30 acres or more of the landscape and with direct discharges into receiving waters shall conduct or participate in benthic macroinvertebrate bioassessment of RWs prior to commencement of construction activity (See Appendix 3).
- i. Risk Level 3 dischargers shall obtain RW samples in accordance with the Receiving Water sampling location section (Section I.5), below.

Attachment E, Section I.5, Risk Level 3- Storm Water Discharge Water Quality Sampling Locations, Page 13-14

Effluent Sampling Locations

- a. Risk Level 3 dischargers shall perform sampling and analysis of storm water discharges to characterize discharges associated with construction activity from the entire project disturbed area.
- b. Risk Level 3 dischargers shall collect effluent samples at all discharge points where storm water is discharged off-site.
- c. Risk Level 3 dischargers shall ensure that storm water discharge collected and observed represent¹⁷ the effluent in each drainage area based on visual observation of the water and upstream conditions.
- d. Risk Level 3 dischargers shall monitor and report site run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs ~~or NELs~~.
- e. Risk Level 3 dischargers who deploy an ATS on their site, or a portion on their site, shall collect ATS effluent samples and measurements from the discharge pipe or another location representative of the nature of the discharge.
- f. Risk Level 3 dischargers shall select analytical test methods from the list provided in Table 3 below.
- g. All storm water sample collection preservation and handling shall be conducted in accordance with Section I.7 "Storm Water Sample Collection and Handling Instructions" below.

Receiving Water Sampling Locations

- h. **Upstream/up-gradient RW samples:** Risk Level 3 dischargers shall obtain any required upstream/up-gradient receiving water samples from a representative and accessible location as close as possible and upstream from the effluent discharge point.
- i. **Downstream/down-gradient RW samples:** Risk Level 3 dischargers shall obtain any required downstream/down-gradient receiving water samples from a representative and accessible location as close as possible and downstream from the effluent discharge point.

¹⁷ For example, if there has been concrete work recently in an area, or drywall scrap is exposed to the rain, a pH sample shall be taken of drainage from the relevant work area. Similarly, if sediment-laden water is flowing through some parts of a silt fence, samples shall be taken of the sediment laden water even if most water flowing through the fence is clear.

- j. If two or more discharge locations discharge to the same receiving water, Risk Level 3 dischargers may sample the receiving water at a single upstream and downstream location.

Attachment E, Section I.7, Risk Level 3- Storm Water Sample Collection and Handling Instructions, Page 15

- a. Risk Level 3 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.
- b. Risk Level 3 dischargers shall ensure that testing laboratories will receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory), and shall use only the sample containers provided by the laboratory to collect and store samples.
- c. Risk Level 3 dischargers shall designate and train personnel to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan (QAPrP).¹⁸

Attachment E, Section I.9.d, Risk Level 3 – Analytical Methods, Page 17

- a. Risk Level 3 dischargers shall refer to Table 3 below for test methods, detection limits, and reporting units.
- b. **pH:** Risk Level 3 dischargers shall perform pH analysis on-site with a calibrated pH meter or a pH test kit. Risk Level 3 dischargers shall record pH monitoring results on paper and retain these records in accordance with Section I.14, below.
- c. **Turbidity:** Risk Level 3 dischargers shall perform turbidity analysis using a calibrated turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable test methods include Standard Method 2130 or U.S. EPA Method 180.1. The results will be recorded in the site log book in Nephelometric Turbidity Units (NTU).
- d. **Suspended sediment concentration (SSC):** Risk Level 3 dischargers [that exceed the turbidity Receiving Water Monitoring Trigger](#) shall perform SSC analysis using ASTM Method D3977-97.
- e. **Bioassessment:** Risk Level 3 dischargers shall perform bioassessment sampling and analysis according to Appendix 3 of this General Permit.

Attachment E, Section I.10.b, Risk Level 3 – Non-Storm Water Discharge Monitoring Requirements, Page 18

- b. Effluent Sampling Locations:
 - i. Risk Level 3 dischargers shall sample effluent at all discharge points where non-storm water and/or authorized non-storm water is discharged off-site.

¹⁸ Additional information regarding SWAMP's QAPrP [and QAMP](#) can be found at http://www.waterboards.ca.gov/water_issues/programs/swamp/.

QAPrP: http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf
QAMP: http://www.waterboards.ca.gov/water_issues/programs/swamp/qamp.shtml

- ii. Risk Level 3 dischargers shall send all non-storm water sample analyses to a laboratory certified for such analyses by the State Department of Health Services.
- iii. Risk Level 3 dischargers shall monitor and report run-on from surrounding areas if there is reason to believe run-on may contribute to an exceedance of NALs ~~or NELs~~.

Attachment E, Section I.15, Risk Level 3- NAL Exceedance Report, Page 20

- a. ~~In the event that any effluent sample exceeds an applicable NAL,~~ Risk Level 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 10 days after the conclusion of the storm event. The Regional Boards have the authority to require the submittal of an NAL Exceedance Report.

Attachment E, Section I.16, Risk Level 3- NEL Violation Report, Page 21

- ~~a. Risk Level 3 dischargers shall electronically submit all storm event sampling results to the State Water Board no later than 5 days after the conclusion of the storm event.~~
- ~~b. In the event that a discharger has violated an applicable NEL, Risk Level 3 dischargers shall submit an NEL Violation Report to the State Water Board within 24 hours after the NEL exceedance has been identified.~~
- ~~c. Risk Level 3 dischargers shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity in this General Permit.~~
- ~~d. Risk Level 3 dischargers shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the annual report is filed.~~
- ~~e. Risk Level 3 dischargers shall include in the NEL Violation Report:
 - ~~i. The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit");~~
 - ~~ii. The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation; and~~
 - ~~iii. A Description of the current onsite BMPs, and the proposed corrective actions taken to manage the NEL exceedance.~~~~
- ~~f. Compliance Storm Exemption – In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event, Risk level 3 discharger shall report the on-site rain gauge reading and nearby governmental rain gauge readings for verification.~~

Attachment E, Section I, Risk Level 3 Monitoring and Reporting Requirements, Page 23

Table 3 – Risk Level 3 Test Methods, Detection Limits, Reporting Units and Applicable NALs/~~NELs~~

Parameter	Test Method / Protocol	Discharge Type	Min. Detection Limit	Reporting Units	Numeric Action Level	Numeric Effluent Limitation	Receiving Water Monitoring Trigger
Ph	Field test with calibrated portable instrument	Risk Level 3 Discharges	0.2	pH units	lower NAL = 6.5 upper NAL = 8.5	lower NEL = 6.0 upper NEL = 9.0 N/A	lower limit = 6.0 upper limit = 9.0
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Risk Level 3 Discharges other than ATS	1	NTU	250 NTU	500 NTU N/A	500 NTU
		For ATS discharges	1	NTU	N/A	10 NTU for Daily Weighted Average & 20 NTU for Any Single Sample	10 NTU for Daily Weighted Average & 20 NTU for Any Single Sample
SSC	ASTM Method D 3977-97 ¹⁹	Risk Level 3 (if NEL Receiving Water Monitoring Trigger exceeded)	5	mg/L	N/A	N/A	N/A
Bioassessment	(STE) Level I of (SAFIT), ²⁰ fixed-count of 600 org/sample	Risk Level 3 projects > 30 acres	N/A	N/A	N/A	N/A	N/A

¹⁹ ASTM, 1999, Standard Test Method for Determining Sediment Concentration in Water Samples: American Society of Testing and Materials, D 3977-97, Vol. 11.02, pp. 389-394.

²⁰ The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

Attachment F, Section I, ATS Effluent Discharge, Page 5-7

I. ATS Effluent Discharge

1. ATS effluent shall comply with all provisions and prohibitions in this General Permit, specifically the NELs.
2. NELs for discharges from an ATS:
 - a. Turbidity of all ATS discharges shall be less than 10 NTU for daily flow-weighted average of all samples and 20 NTU for any single sample.
 - b. Residual Chemical shall be < 10% of MATC²¹ for the most sensitive species of the chemical used.
3. If an analytical effluent sampling result ~~is outside the range of pH NELs (i.e., is below the lower NEL for pH or exceeds the upper NEL for pH) or~~ exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file the results in violation within 24-hours of obtaining the results.

²¹ The Maximum Allowable Threshold Concentration (MATC) is the allowable concentration of residual, or dissolved, coagulant/flocculant in effluent. The MATC shall be coagulant/flocculant-specific, and based on toxicity testing conducted by an independent, third-party laboratory. The MATC is equal to the geometric mean of the NOEC (No Observed Effect Concentration) and LOEC (Lowest Observed Effect Concentration) Acute and Chronic toxicity results for most sensitive species determined for the specific coagulant. The most sensitive species test shall be used to determine the MATC.

