

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-7507
FAX (916) 653-7757
TTY (916) 653-4086

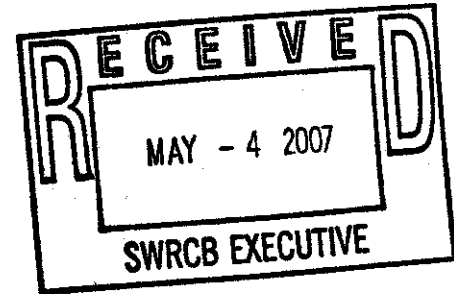
**Construction General
Permit – Stormwater**
Deadline: 5/4/07 5pm



*Flex your power!
Be energy efficient!*

May 4, 2007

Ms. Song Her
Clerk to the Board
State Water Resources Control Board
1001 "I" Street, 24th Floor
Sacramento, CA 95814
By E-mail: commentletters@waterboards.ca.gov



RE: Comment Letter – Preliminary Draft Construction General Permit

Dear Ms. Her:

The California Department of Transportation (Department) appreciates the opportunity to comment on the reissuance of the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activities (Construction General Permit). This Construction General Permit does not procedurally apply to storm water discharges from Department projects, as those issues are covered in the Caltrans Storm Water Permit. However, the Caltrans permit requires compliance with the substantive provisions of the Construction General Permit, and as such, the Department has a strong interest in its reissuance. As a major consumer of construction services, the Department is concerned about increased costs and potential delays to construction that may result from the adoption of this preliminary draft permit.

The Department offers a number of comments described in detail in the attachment. One concern is the introduction of major changes to the way construction projects are managed without first demonstrating how these same problems are not adequately addressed by the current general permit. A second concern focuses on the ability of construction sites, in compliance with the current permit, to comply with the proposed permit. This may mean additional treatment will need to be built to address pH, turbidity, and other constituents to achieve discharge concentrations without demonstrating a clear benefit to water quality vis-à-vis the risk to water quality.

The following enclosure contains our points of concern about the Preliminary Draft Construction General Permit. We hope these comments are helpful. If you have any questions, please call me at (916) 653-4446, or Keith Jones of my staff at (916) 653-4947.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Scott McGowen".

G. SCOTT MCGOWEN
Chief Environmental Engineer

ATTACHMENT

We offer the following general comments on the Fact Sheet and the Preliminary Draft Order of the Construction General Permit. We have separated the comments into general categories.

General Comments

1. **Need for revised permit** – The draft permit has not clearly established that the current permit is inadequate when the SWPPP is fully implemented. We believe existing problems at construction sites are the result of failure to implement (and lack of enforcement) rather than shortcomings in the current permit. Problem identification should precede major changes to the program.
2. **Risk assessment** – A stated innovation with this permit is the introduction of a “Risk Based Permitting Approach.” While sites have different requirements based on site-specific risk, the Fact Sheet does not identify the risk to waterways, which needs to be the basis for setting specific numeric action levels and permit limitations.
3. **Documentation requirements** – The proposed permit greatly increases documentation requirements. This places an excessive burden on permittees and also on the Regional Boards and MS4s. Streamlining these procedures would greatly benefit all entities mentioned.
4. **Management of program** – The Department executes many construction projects and would most likely need to request a program for certification to manage compliance (review, certify, and publication of SWPPPs) at contractor sites.

Procedural/Regulatory Issues

5. **Development of technology-based limitations following U.S. EPA procedures** – The draft permit introduces “technology-based” action levels, numeric effluent limitations, and mandatory controls (hydromodification). It is not clear from the permit that the technology-based effluent limits were established following EPA regulations for setting best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT). This process will need to be documented per 40 CFR 125.3(c) and (d) and include an assessment of feasibility and costs.
6. **Program-wide costs** – Water Code 13241 requires an economic assessment during the establishment of water quality objectives. This proposed permit establishes new WQOs to be applied at construction sites (e.g., pH in receiving water).
7. **Policy-making** – This permit significantly expands the scope of CGP to address water quality concerns beyond those associated with construction activities, such as hydromodification controls and numeric effluent limits. Such major changes should take place as part of a general policy-making process. In particular, applying hydromodification requirements outside of municipal areas is a major change that should be addressed as a new policy, rather than a simply a permit requirement. In 2005, the Board held workshops on the proposed *Policy for the Implementation of the Storm Water Program*. This policy-making effort is the appropriate mechanism for evaluating and introducing major changes to the storm water program, and should continue to be pursued by the SWRCB.

8. **Specifying manner of compliance** – Specification of numeric performance standards and means of attaining those standards appears contrary to Water Code section 13360 (*Manner of Compliance*): “No waste discharge requirement ... shall specify the ...manner in which compliance may be had with that requirement, ...and the person so ordered shall be permitted to comply with the order in any lawful manner.”
9. **Retroactive application** – The new permit should not apply to ongoing construction projects, (i.e., with a completed entitlement process). Projects with approved environmental documents should be “grandfathered;” otherwise it will be necessary to re-open the environmental process to address new design features and treatment facilities.
10. **Signatory requirements** – The Department initiates hundreds of projects each year with design responsibility vested in the project engineer. It is not practical to require signature by a principal elected official or a principal executive officer. The person in responsible charge of the project should be able to sign the permit documents.
11. **Basin Plan prohibitions** – This proposed permit includes the prohibitions in all the Regional Basin Plans. For example, the San Francisco Basin Plan in Table 4.1 prohibits all discharges to dead-end sloughs or which do not receive 10:1 dilution. Most storm water discharges fit this description. The Central Coast Basin Plan, as another example, prohibits discharge of all wastewater to a large section of the Monterey Bay coastline. These Basin Plan prohibitions were not developed with storm water in mind but will now be applicable. The proposed permit should address how compliance with these prohibitions will be achieved. Ideally, the proposed *Policy for the Implementation of the Storm Water Program* would identify which prohibitions are applicable and which are not. Otherwise, the permit creates widespread “technical” noncompliance which may not be enforced by the Water Boards but which may be enforced by third parties.
12. **Point of compliance** – The language is not clear on where Numeric Effluent Limitations (NELs) apply for pH (e.g., end of pipe, receiving water, mixing zone). Compliance should be within the receiving water to address natural buffering.
13. **NOI not applicable to Caltrans** – The Department should be listed as a discharger that will be covered by a separate permit for its construction activities. (*NOI and Instructions*).

Method of Calculating Action Levels (AL) and Numeric Effluent Limitations (NEL)

14. **Determination of pH ALs and NELs** – The permit-writers calculated **one standard deviation** (SD) above and below the mean pH of runoff from a group of Caltrans construction sites to determine the AL. Based on this approach, the permit specifies an acceptable range of **6.5 to 8.5** pH units. Unfortunately, this approach places many sites (including some of those surveyed) outside the acceptable range because of the selection of one SD.

For the NELs, the permit writers took the Caltrans data and **two standard deviations** above and below the mean pH resulting in an allowable range of **5.8 to 9.0** pH Units. Using two standard deviations places fewer sites in non-compliance but also is not based on risk.

This is important because the Caltrans data¹ on which these pH limitations are based ranged from 6 to 11.4 pH units – many sites with conventional BMPs in place will not comply. These sites will have to collect the runoff, install treatment tanks, apply chemicals to adjust the pH, and utilize monitoring equipment. The Fact Sheet provides no evidence that the construction site pH below or possibly above the proposed limits has caused a water quality problem. Obviously, non-stormwater discharges such as cement wastes must be kept out of the runoff but this issue can be addressed by mandatory BMPs. Using standard deviations in this way is not a valid approach for setting limitations and will result in well-managed sites being in violation due to natural variability.²

New Hydromodification Requirements

15. **Using MS4/Caltrans permits to address hydromodification** – The hydromodification objectives should be addressed through the MS4 permits where plans can be developed that include an analysis of the receiving water to determine the appropriateness of hydromodification controls. The CGP should note that the Department’s hydromodification requirements will be addressed in the Caltrans statewide permit, which establishes requirements for the development of a hydromodification program appropriate for linear right-of-way (ROW).
16. **Hydromodification/drainage patterns and roadways/highways** – Natural open drainage conveyances are generally incompatible with roadways and the necessary closed conduit systems will reduce the time of concentration. In addition, the hydromodification controls may not be feasible within certain linear construction situations, for example, construction of an additional traffic lane within an existing ROW.
17. **Board approval for structural devices** – It is not practical to obtain Board approval for the use of all structural devices used to reduce runoff volume. The Department has its own comprehensive and comprehensive testing and approval process.
18. **Discharge to lined channels** – In some locations, channels downstream of construction sites are concrete lined, or have been otherwise altered to accommodate increased flows compared to a natural condition. As in the Santa Clara program, hydromodification controls should not be required unless there is a potential for streambed scouring.
19. **Groundwater problems** – Groundwater recharge is a generally beneficial practice but may put freeway pavement at risk if the groundwater level is increased to the extent that structural stability is threatened. The permit should exempt a project from the recharge requirements if rising groundwater can have an adverse effect on the project design or adjacent properties.

¹ Data posted at: <http://www.dot.ca.gov/hq/env/stormwater/pdf/CTSW-RT-02-055.pdf>

² We note that the San Francisco Regional Board sets interim NPDES permit limitations for mercury by calculating the mean plus three standard deviations (typically using log-transformed data).

Treatment Requirements

20. **Design standards** – The ATS must treat the volume from 1.5 X 10-year event within 48 hours. A storm with a 10% chance of occurring in any given year is relatively rare, coupled with a 50% safety factor and an inter-event drain time of 48 hours, results in a very low probability of occurrence (equivalent to the 100-year storm in Orange Co.). A more appropriate criterion would be a 10-year storm with a 72-hour treatment time.
21. **Soil risk** – The point system (Attachment F) appears to place most sites in the ‘high risk’ category. The Fact Sheet does not provide an assessment of what percentage of sites will be high-risk. In addition, the risk assessment should address other factors besides particle size including soil cohesiveness (plasticity index). Finally, soil risk cannot be assessed using the proposed method in project locations with existing fill or imported soils.
22. **Post ATS treatment** –Effluent from an ATS system should not be required to go through a subsequent physical filter (such as a grassed swale). Water quality will not be improved below the 10 NTU ATS requirement, and it may actually worsen by going through the swale.
23. **ATS treatment flexibility** – The definition of an ATS assumes the addition of a chemical coagulant; however, some filter systems could meet the NELs without chemicals. Chemical use should be discouraged unless absolutely required. When no chemicals are used, the toxicity testing should be waived since it is used to address chemical toxicity.
24. **Non-storm water discharges** – Permittees must filter or treat all dewatering discharges. Treatment should not be required unless the dewatering flow is contaminated.
25. **Discharge to sanitary sewers** – (Page 55, Item 7.i.ii.) Wastewater agencies generally prohibit the discharge of storm water to separate sanitary sewer systems when they are at capacity. This option should not be listed without qualifications since it may not be viable.
26. **Sheet flow to a buffer** – (Page 76) Level spreaders rarely function as designed and can trap and hold nuisance water and create vector problems (they were tested as a part of the Department’s BMP Retrofit Pilot Program). Their use should be restricted or qualified.

Monitoring and Reporting

27. **Mobilization** –Monitoring should be initially targeted at a representative sampling of sites due to the difficulty in mobilizing for all discharge locations at a project site in a linear highway environment.
28. **Settling time in basin** – The text is not clear whether this refers to the drain time for the flow equalization basin for the ATS. The Fact Sheet provides no indication of whether information was gathered to ensure meeting the 48-hour treatment time criteria.

29. **Design storm exception** – (Visual Observation and Sample Collection Exceptions.) An exception for sampling should be allowed when the storm event has exceeded the design capacity of the BMPs (10-year, 24 hour storm).
30. **Annual Report submittal date** – Annual reports should be submitted in July concurrent with the annual certification, rather than January 1.

Other Comments

31. **Exposed soils** – The Fact Sheet does not describe how the 5-acre limit was selected. The Department successfully controls sites under 17 acres.
32. **Stabilization** – The text indicates that ‘all’ active construction areas must be stabilized from ‘all erosive forces’ presumably at all times. Clarify what is meant by ‘stabilized’ (i.e., application of a polymer) and when stabilization must occur (i.e., prior to a rain event?).
33. **Street washing** – Please clarify what is meant by “The discharger shall wash ... streets in designated areas...” (P. 24, Item J.2.).
34. **Sludge** – Definition needed.

Supplemental Comments on Compliance

The following discussion addresses two types of exceedances:

- Exceedances caused by the new limitations in the permit
 - Exceedances resulting from permit references to other limitations or standards. These are most likely inadvertent exceedances that were not intended by the permit writers. Although these exceedances may not result in enforcement by the Water Boards they do expose permittees to third party enforcement and prevent permittees from achieving full and unambiguous compliance.
35. **pH risk** – The permit places numeric limits on both high and low pH. High pH may be appropriate when concrete wastes are present but low pH number will be violated by normal rainfall or acidic soils. (Rainfall measurements in California in 2005 of pH ranged from 5.4 to 6.2.³). We suggest that concrete wastes be addressed by BMPs to ensure they do not enter the runoff.
 36. **Unknown ability to comply with permit ALs and NELs** – The proposed permit introduces numeric thresholds as action levels or effluent limitations. No assessment has been completed on how these limits will impact typical sites or if the selected numbers address real problems. Available information indicates non-compliance will be widespread.

³ See isopleths developed by the National Atmospheric Deposition Program/National Trends Network at <http://nadp.sws.uiuc.edu/isopleths/maps2005/phlab.pdf>

Effluent Action Levels and Limitations

Constituent	Action levels (ALs)	Numeric effluent limitations		CT Construction Site Monitoring	
		Medium & High Risk Sites	Active Treatment Systems (ATS)	1998 – 1999	2000 – 2001
pH	6.5 – 8.5	5.8 – 9.0	6.5 – 8.5	6.4 - 11	6 – 9.7
pH	-	≤0.2 above/ below receiving water	-	-	-
Turbidity NTU	> 500	-	<10	15 – 16,000	NM
Total Petrol. Hydrocarbons (TPH) mg/l	>15 C ₁₂ – C ₂₈	-	-	<5 – 23 mg/l oil & grease (1)	NM
Acute toxicity	-	-	control = 100% effl.	NM	NM
Chronic Toxicity	-	-	1.0 TUc,	NM	NM

NM – not measured

- (1) Carbon range - Diesel Range Organics (DRO) is defined as the carbon range between C10 and C28. O&G test (418.1) extracts potentially C-8 to C-70. Therefore, all there is some overlap, the TPH and O&G tests are not directly comparable.

37. **Required compliance with drinking water standards: iron and aluminum** – Some exceedances will be caused by concentrations of natural soil constituents – iron and aluminum – which are regulated by water quality objectives based on the drinking water (tap) standards. Some Regional Boards have applied the drinking water standards to surface waters. This table assumes a value of 100 mg/l for TSS, which is conservative.⁴

⁴ The 2000-2001 Annual Data Report identified a construction site runoff TSS range of 21 to 1700 mg/l, with a mean of 490 mg/l.

Runoff Exceedances due to Natural Soil Constituents

Constituent	Background Concentration in California Soils (Average) (UC Riverside, 1996)	Concentration in Runoff (assuming TSS = 100 mg/l)	Water Quality Objectives (Drinking Water) (from SF Basin Plan, Table 3-5)
Iron	3.7%	3.7 mg/l	0.2 mg/l
Aluminum	7.3%	7.3 mg/l	0.3 mg/l

38. **Exceedances of other objectives based on Drinking Water Standards** – Other objectives derived from the drinking water standards will also likely cause widespread noncompliance because they are much lower than the ALs and NELs.

Water Quality Standards⁵ Compared with Numeric Limitations in the Draft Construction General Permit

Constituent	WQO based on Drinking Water	NEL in proposed permit	Numeric Effluent Limitation
Turbidity (NTU)	5.0	500	10 (for ATS only)
pH	6.5-8.0	6.5-8.5	5.8-9.0
TDS	500.0	–	–

39. **Exceedances due to CTR objectives and bacteria standards** – Comparison with the California Toxics Rule and other Basin Plan objectives for bacteria also show likely exceedances. The permit requires compliance with all standards.

⁵ From San Francisco Basin Plan (Table 3-5)

Compliance of Construction Sites with Typical CTR & Bacteria WQS

Constituent	Typical Receiving Water Standards		CT Construction Sites	
	<i>1-hour average</i>	<i>4-day average</i>	1998 – 1999	2000 – 2001
Copper, diss. ug/l	13	9	<2 – 25	1.8 – 30
Lead, diss ug/l	65	2.5	<0.5 – 15	<1 – 37
<i>REC-1 (Water Contact Recreation)</i>				
Fecal Coliform MPN/100 ml	<200 log mean REC1	<400 90 th percentile	2 – 5000	NM
Total Coliform MPN/100 ml	Median < 240	No sample > 10,000	2 – 270,000	NM

Copper, lead assumes hardness = 100 mg/l as CaCO3

Dioxin is also ubiquitous in storm water runoff and, if measured, will potentially constitute and significant exceedance problem.⁶

40. **pH variation** – The basis for the selection of a maximum deviation of 0.2 pH units is not explained or justified. The restriction on pH variance should not be linked to the risk of the construction project, but rather be based on risk to the receiving water.

⁶ The San Francisco Regional Board completed a dioxin survey (1997), which included both permanent waterways and storm water conveyances. (Posted at: <http://www.swrcb.ca.gov/rwqcb2/download/DioxinStormwaterSurvey1997.pdf>)