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ASBS Special Protections
Deadline: 9/1/06 5pm

September 1, 2006

Ms. Song Her
Clerk to the Board
Executive Office
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

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RE: Comment Letter – Areas of Special Biological Significance Special Protections

Dear Ms. Her:

The California Department of Transportation (Department) appreciates the opportunity to provide comments on the scope of the environmental information to be included in CEQA analysis to implement "Special Protections" for Areas of Special Biological Significance (ASBS). As requested in the public notice, we have focused our review on the content of the proposed Special Protections. In particular, we have considered the physical and practical consequences of the proposal in order to identify what facilities will likely be needed to comply with the performance standards.

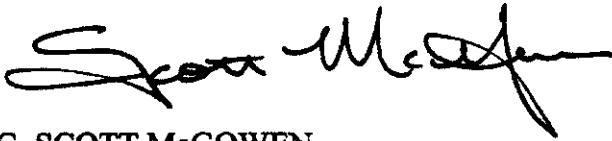
The Department is a linear municipal separate storm sewer system permittee, which uniquely faces the diversity and challenges of multiple Regional Boards, topography, geology and 57 miles of pristine coastline. Our primary concern is that the Special Protections establish numeric effluent limitations that are beyond the capability of source control Best Management Practices (BMPs) normally required for compliance with storm water permits, and also beyond the capability of current treatment technology more commonly used for water treatment facilities. This leaves diversion around the ASBS (cease discharge of storm water) as the most likely means of compliance with the requirements. The construction of advanced treatment units or diversions along the coast will have numerous reasonably foreseeable environmental impacts, which will necessitate a comprehensive environmental assessment and analysis.



Ms. Song Her
September 1, 2006
Page 2

Detailed comments are provided as an enclosure to this letter. If you have any questions, please contact me at (916) 653-4446, or Keith Jones at (916) 653-2351.

Sincerely,



G. SCOTT McGOWEN
Chief Environmental Engineer

Enclosure

c: Tam Doduc, Chair SWRCB
Board Members
Bruce Fujimoto, DWQ, SWRCB

ATTACHMENT

Department of Transportation Comments on Special Protections for Areas of Special Biological Significance

1. Overall objective of Special Protections

The Special Protections require stormwater runoff to attain a quality equivalent to that prior to any development along the coast. The Special Protections do this by using a stream from an undeveloped watershed as the compliance standard. However, most urban and highway stormwater discharges to Areas of Special Biological Significance (ASBS) were pre-existing when the ASBS were established. We question whether the compliance objective and the associated procedures are appropriate or even realistically achievable.

2. Use of a negative declaration rather than an EIR-equivalent document

As currently proposed, the Special Protections require at a minimum, the construction of numerous high-level treatment units in the coastal zone. These treatment units may also need pumping facilities and piping to consolidate flows for cost-effective treatment. More likely, stormwater runoff will need to be diverted around the ASBS because of the inability of available BMPs to achieve the new numeric limitations. New discharge locations will be needed outside the ASBS for discharge of the consolidated and diverted flows, and a significant change in pre-historic drainage patterns will result. Consequently, an Environmental Impact Report, or its functional equivalent is the appropriate level of analysis necessary to address the reasonably foreseeable means dischargers will need to undertake to comply with the proposed Special Protections.

As part of the CEQA process, it is essential that the environmental analysis identify the likely effluent limitations that will result from using Reference Streams to establish effluent limitations. Otherwise, it will not be possible to accurately project the environmental consequences of the Special Protections.

3. Establishment of new water quality standards

The Ocean Plan contains water quality objectives applicable to ocean waters including ASBS. The ASBS have an additional beneficial use related to preservation of natural water quality; however, this beneficial use is not reflected in the numeric or narrative objectives. We understand that Board staff believes that the Special Protections merely implement the beneficial use regarding natural water quality in ASBS. However, the Special Protections establish water quality objectives as well as effluent limitations that are not currently in the Ocean Plan.

The federal regulations implementing the Clean Water Act (40 CFR 131) and the Porter-Cologne Act identify specific procedures for setting water quality objectives. The Board has not followed these procedures and yet is establishing the following objectives through the Special Protections¹.

¹ The following material summarizes our understanding of the Special Protections. If this is not correct, the Special Protections need to be clarified.

New Water Quality Objectives and Effluent Limitations Applied to Storm Water Runoff to ASBS

<i>Where applied:</i>	<i>Water Quality Objectives applied to storm water</i>		
Storm water runoff prior to discharge <i>(effluent limitations)</i>	Ocean Plan Table B objectives	Reference Stream constituent concentrations	
Receiving water <i>(beyond the surf zone at discharge locations)</i>	Ocean Plan Table B objectives	Mouth of Reference Stream constituent concentrations	Ocean Plan Bacteria Standards

These objectives are new for the following reasons:

- **Runoff effluent limitations**
 - *Currently the Ocean Plan applies Table B objectives to the receiving water after initial dilution – see Ocean Plan III.C.3 page 13². The Special Protections, however, apply Table B objectives directly to the runoff without considering dilution. This use of Table B effectively creates a new type of objective not provided for in the Ocean Plan.*
 - *Constituent concentrations in a Reference Stream from an unimpacted watershed will be the basis for runoff effluent limitations. As shown in Table 1 below, these are expected to be much lower than limitations based on Table B. Using Reference Stream concentrations as objectives (applied without dilution) is also new and not provided for the Ocean Plan.*

- **Receiving water objectives beyond the surf zone at the point of stormwater discharge**
 - *Constituent concentrations at the mouth of a Reference Stream from an unimpacted watershed are new objectives, which will be applied in ASBS.*
 - *The Ocean Plan Table B objectives in the receiving water will also be applied in a new manner contrary to current EPA and State policy. Currently MS4 stormwater permits apply the objectives in an iterative manner: exceedances trigger notification and possibly change to the Stormwater Management Plan. The Special Protections turn the Table B objectives into absolute receiving water objectives with no provision for implementing the iterative approach.*

² Ocean Plan: “Effluent limitations shall be imposed in a manner prescribed by the State Water Board such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial* dilution, except that objectives indicated for radioactivity shall apply directly to the undiluted waste* effluent.” [emphasis added]. In effect, the Special Protections ignore the Ocean Plan procedure for calculation of effluent limitations at III.C.4 and set the dilution factor at 0.

- *The Ocean Plan indicator bacteria objectives are also applied in a new manner. As with Table B, these bacteria objectives are applied directly rather than using the current iterative approach.*

The Special Protections go beyond an explanation of what is “natural” water quality and establish specific performance standards based on new objectives. The Board is required to follow the established procedures for promulgating water quality objectives. This is particularly important because these new objectives will potentially have major impacts on the dischargers and on the coastal environment.

The environmental analysis will need to clearly identify the possible objectives that will result from using designated Reference Streams as well as the effect of applying Table B directly to runoff without dilution. Identifying these objectives and their consequences in terms of reasonably foreseeable treatment measures or diversion is essential for completing CEQA.

4. Can urban runoff comply with the proposed effluent limitations?

The CEQA documents will need to assess impacts on the environment of the projects needed to address the Special Protections. The first step in this assessment is to determine if the current storm water runoff will comply with the proposed effluent limitations established by the Special Protections. Since very limited data is available regarding the quality of runoff into ASBS, we reviewed several extensive storm water data sets in California:

- *Statewide highway median values* - 635 samples for most constituents of concern were sampled at 46 different sites over three years.
- *Maximum event runoff concentrations from a highly urbanized area* (District 7-Los Angeles/Ventura County regions) – the intent is to identify the high range that will need to be addressed by controls.
- *Coastal runoff data collected by a citizen monitoring effort* – This effort organized in conjunction with the Monterey Marine sampled 23 storm water discharge locations.

Table 1 compares this runoff data with the two sets of numeric effluent limitations proposed in the Special Protections.

Ocean Plan Table B – Eight of the 21 constituents in Table B are shown in the table. Adequate monitoring data was not available to assess compliance with the others including acute and chronic toxicity, cyanide, etc.

Reference Stream Wet weather sampling results from 22 “natural” streams in southern California. Northern California streams may differ, however, these data are in general conformance with information on natural constituents available from other sources (EPA criteria documents, Tomales Bay bacteria TMDL, etc.).

Compliance with Ocean Plan Table B - As can be seen from the table, the statewide median highway stormwater runoff values do not exceed the objectives derived from Table B. However, individual storms may produce significant exceedances of the Table B values, particularly in urban areas, as shown by the maximum event data from District 7. The Central Coast “First Flush” program also showed significant exceedances. Concentrations of pollutants in storm

water runoff vary greatly depending on location, length of time to antecedent storm, and other factors.

Compliance with Reference (Natural) Stream – As expected, the concentrations for most constituents in natural waterways are significantly below the Ocean Plan standards. This makes the exceedances greater and compliance much more difficult. In other words, the concentrations of these constituents in the *Reference Stream* will be the controlling numeric limitations applied to stormwater runoff.

Greater than 90% reductions from high loadings will be the needed for a number of pollutants. For some pollutants, the necessary reductions may be two orders of magnitude.

Table 1 - Stormwater runoff compared with Ocean Plan Table B and Natural Streams

Constituents (ug/l unless noted)	Prospective Effluent Limitations for Stormwater		Reported Data on Stormwater Runoff		
	Natural Streams geometric flow weighted mean (1)	Ocean Plan Instantaneous Maximum	Urban Runoff Maxima (District 7 event mean conc. -max)	High-way Runoff (State-wide Median) (2)	Central Coast "First Flush" (3)
Arsenic	1.2	80	16.6	1.1	-
Cadmium	0.43	10	8.3	0.44	-
Chromium (tot)	5	- (4)	86	5.8	-
Copper	5.3	30	366	21.1	ND - 270
Lead	1.4	20	2086	12.7	ND - 58
Mercury	0.01	0.4	<0.2	0.026	-
Nickel	3.5	50	130	7.7	-
Zinc	21.5	200	1829	111	96 - 678
Ammonia - N	80	6000	2466	770	-
Phosphorus (tot)	70	Not table B (5)	NA	290	-
Fecal Coliform (/100ml)	207 (e. coli) (6)	Not table B (5)	NA	362 range: 23 - 6,000	100 - 242,000 (e. coli) (6)
Suspended solids (mg/l)	135	Not table B (5)	NA	59	15 - 645

- (1) Preliminary report: *Quantification of Natural Contributions During Wet and Dry Weather for Derivation of Load Allocations and Numeric Targets*; USEPA Contract No. CP97983901; Eric Stein, Vada Yoon; Southern California Coastal Water Research Project; October 15, 2005. The study sampled twenty-two sites in southern California.
- (2) This data is from the *Discharge Characterization Study Report*; CTSW-RT-03-065.51.42; runoff from coastal highways in rural areas may have lesser concentrations of these pollutants based on recent monitoring by the Department for the ASBS exception submittal.
- (3) Twenty-three urban outfalls monitored by the Monterey Bay Sanctuary Citizen Watershed Monitoring Network, October 2004 Posted at: <http://montereybay.noaa.gov/monitoringnetwork/pdf/ff2004.pdf>

- (4) The Table B objective is for hexavalent chromium not total chromium as is measured here. The exceedances by total chromium indicate that hexavalent chromium objectives from Table B and Reference Streams may also be exceeded.
- (5) Stormwater (prior to discharge) apparently has to comply only with Table B, not with other Ocean Plan requirements such as bacteria.
- (6) Generally, most fecal coliform are *e. coli*.

Other possible problem constituents – Because data is unavailable only partial comparisons are currently possible. In particular, data is needed to determine if runoff will have difficulty achieving the effluent limitations derived from Reference Streams and Table B for such parameters as acute and chronic toxicity, radioactivity, DDT, PCBs, organophosphate pesticides, pyrethroids, etc.

A full accounting of the impact of the new limitations is necessary to complete the CEQA process.

5. Can treatment bring runoff into compliance with Ocean Plan Table B and Reference Stream limitations

As shown in Table 1, storm water runoff will at times exceed Table B objectives and will almost always exceed Reference Stream concentrations for many constituents. The currently available treatment technologies such as sand filters generally address particulates. Figures 1 through 3 demonstrate treatment facility performance for eight different treatment controls (i.e., treatment BMPs). While some BMPs will provide for compliance with Table B objectives, none of the BMPs will achieve compliance with limitations based on a Reference Stream for these three pollutants.

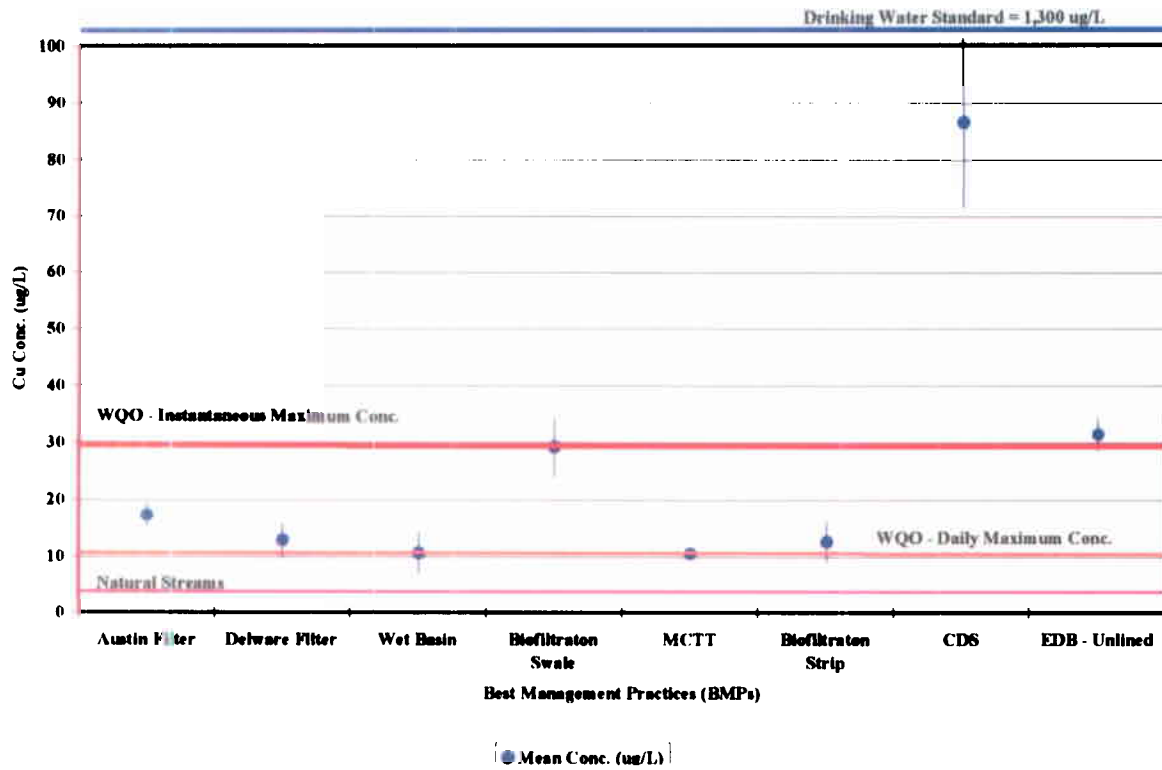
Figures 1 through 3 below show the mean effluent concentrations (for copper, lead and zinc) with the standard deviation for the various treatment BMP devices tested during the *BMP Retrofit Pilot Study*³. Shown on the chart are dark red and light red lines, which are the water quality objectives from the California Ocean Plan for instantaneous maximum and daily maximum. The pink lines show concentrations in natural streams from Table 1. For reference, drinking water limits for these constituents are shown in blue.

The copper chart (Figure 1) indicates that most BMPs can meet the instantaneous maximum but that only the Multi-Chambered Treatment Train (MCTT) consistently meets the daily maximum WQC. CDS units have been suggested as appropriate for ASBS but appear to not provide adequate removal. None of the BMPs meets limitations based on likely Reference Stream concentrations. Implementation of conventional treatment controls will not provide compliance with the copper limitations resulting from the Special Protections.

³ These mean concentrations were documented in the *BMP Retrofit Pilot Study* and resulted from treating runoff equivalent to that presented for District 7. See: http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/new_technology/CTSW-RT-01-050.pdf

Figure 1 Copper Effluent Concentrations from BMPs versus WQO

Predicted Copper (Cu) Effluent Concentrations from BMPs vs. Water Quality Objectives (WQO) Concentrations of California Ocean Plan



Similar results are indicated for lead and zinc although the MCTT and the Delaware filter provided treatment that approached the needed pollutant removal to attain the limitations based on the Reference Stream for lead and zinc, respectively.

Figure 2 Lead Effluent Concentrations from BMPs versus WQO

Predicted Lead (Pb) Effluent Concentrations from BMPs vs. Water Quality Objectives (WQO)
Concentrations of California Ocean Plan

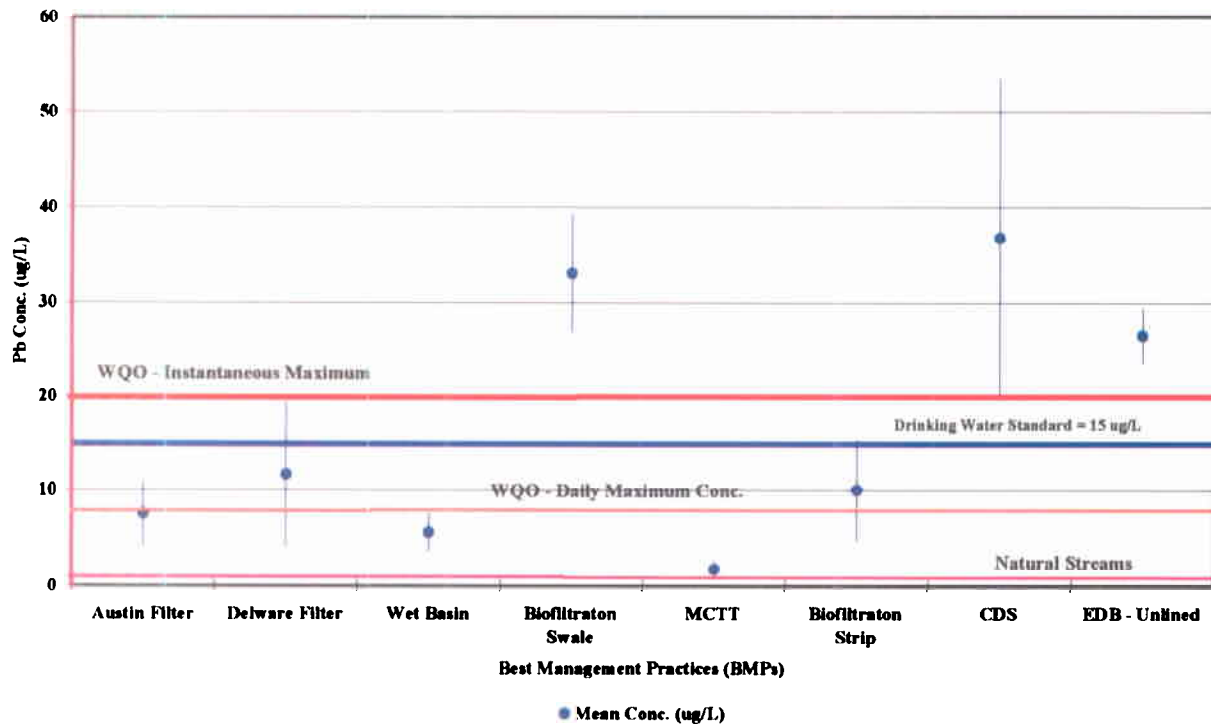
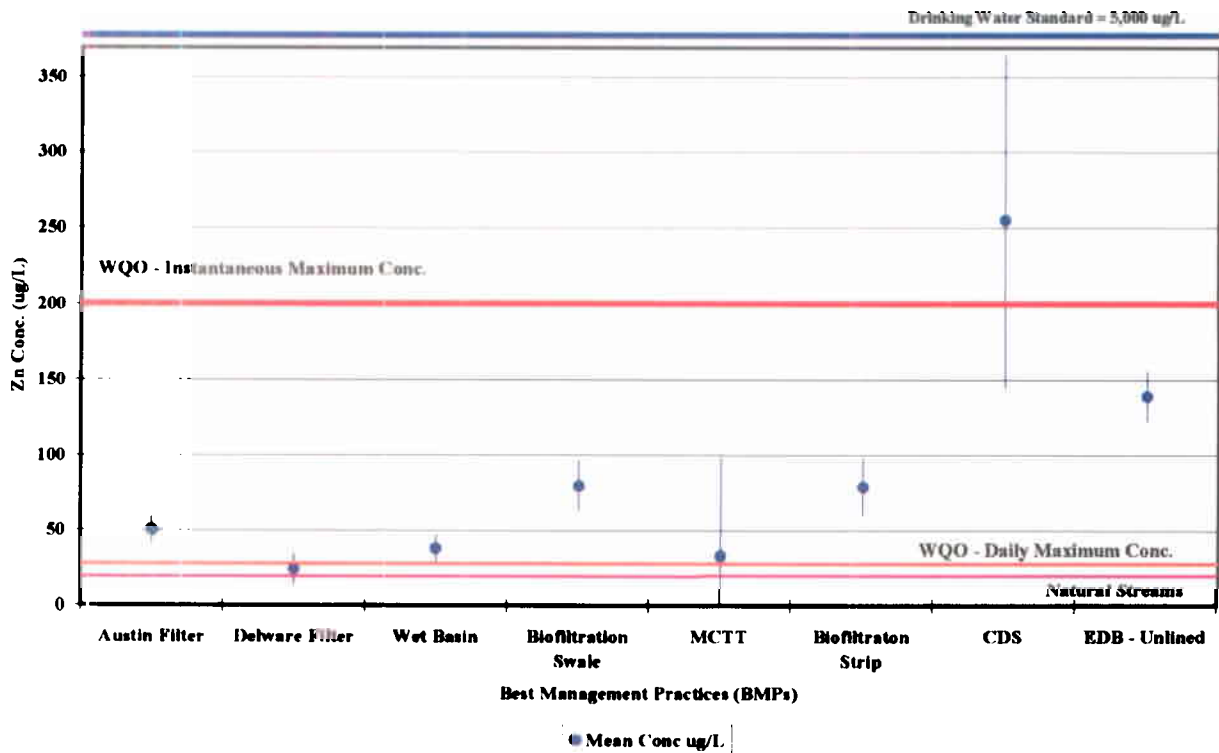


Figure 3 Zinc Effluent Concentrations from BMPs versus WQO

Predicted Zn Effluent Concentrations from BMPs vs. Water Quality Objectives (WQO) Concentrations of California Ocean Plan



Other considerations in assessing the compliance after treatment:

- *Bacteria* - Disinfection of stormwater will almost certainly be required to consistently achieve bacteria levels present in the Reference Stream. Implementing disinfection on a standby basis is technically very difficult and would be prohibitively expensive. Thus it is reasonably foreseeable that the bacteria limitation by itself could force dischargers to divert their flows around ASBS or somehow otherwise terminate them to be in compliance with the current proposal.
- *Toxicity* - The Special Protections apply the Ocean Plan chronic toxicity objective (part of the Table B Aquatic Life objectives) directly to the stormwater runoff. Because of the sensitivity of the marine test organisms, this is a very difficult test to comply with in the absence of a dilution factor. Although data is not available, this test may present a significant hurdle to the discharge of runoff even with treatment.
- *Other constituents* - Compliance will also be difficult for dissolved constituents, which are not easily addressed by available treatment BMPs that are more effective at removing particulates.

**Influent concentration related to the preceding figures on
BMP treatment performance**
(taken from the *BMP Retrofit Pilot Study*, table 15-1)

	<i>Total (µg/L)</i>	<i>Dissolved (µg/L)</i>
Copper	76	18
Lead	79	8
Zinc	233	122

More data should be developed by the Board to fully assess whether stormwater runoff, with treatment, can achieve the proposed discharge standards for all the constituent limitations based on Table B and the Reference Streams. The technologies, if any, capable of meeting these limitations need to be identified. Does the Board have data that indicates these levels of treatment are feasible?

If treatment will not provide compliance, which appears to be the case based on just three constituents, then diversion is the only option. The impacts of diversion must be fully assessed in the environmental analysis.

6. Clarification of compliance requirements

As discussed earlier, the proposed Special Protections establish new requirements applicable to stormwater discharges into ASBS including:

Effluent limitations based on Ocean Plan Table B and a Reference Stream.

Receiving water limitations applicable after mixing and based on Table B, a Reference Stream, and the Ocean Plan bacteria standards.

Tables 2 and 3 attempt to clarify which specific parameters are regulated based on the type or category of runoff.

These tables represent our understanding of what is being required by the Special Protections. We request that the Board verify or correct them as appropriate so that we can understand the new requirements.

Note In the tables below, the discharge categories have different compliance requirements because the Special Protections specify that different sets of constituents will be monitored for each category. In other words, we have presumed that if a constituent is not monitored for a category then that constituent is not applicable as a compliance standard. Similarly, if a constituent is being monitored in both the runoff and the Reference Stream (or has a Table B objective) we have assumed that the numbers will be compared and used for compliance.

We also note that the Special Protections allow the Regional Boards to increase the monitoring requirements. If this occurs then more pollutants will become regulated. The environmental documents will need to be based on a clear description of the proposed requirements and resulting impacts.

Table 2 - Effluent limitations applicable to stormwater discharge categories prior to discharge

Discharger Category (based on pipe diameter and source)	Runoff cannot exceed objectives in Ocean Plan Table B (<i>instantaneous maximum</i> for aquatic life objectives and <i>30-day</i> for others?)	Runoff cannot exceed concentrations in Reference Stream (comparison basis unknown)
MS4 pipe dia <0.5 m	none (<i>i.e., no monitoring required</i>)	none
MS4 pipe dia ≥ 0.5 m outfalls	Acute toxicity	O&G, Sett. Solids, TSS, turbidity, pH (<i>Table A constituents</i>) Acute Toxicity Indicator bacteria
MS4 pipe ≥ 1m, also agricultural, industrial outfalls	Arsenic, Cadmium, Chromium (Hex), Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Cyanide, Chlorine Residual, Ammonia, Chronic Toxicity, Phenolic Compounds (non-chlorinated), Chlorinated Phenolics, Endosulfan, Endrin, HCH, Radioactivity (<i>Table B aquatic life objectives</i>) PAHs	<u>Same as above plus</u> Arsenic, Cadmium, Chromium (Hex), Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Cyanide, Chlorine Residual, Ammonia, Chronic Toxicity, Phenolic Compounds (non-chlorinated), Chlorinated Phenolics, Endosulfan, Endrin, HCH, Radioactivity (<i>Table B aquatic life objectives</i>) PAHs Organophosphate pesticides, pyrethroids
Dischargers with more than 10 outfalls per ASBS <i>single largest outfall ≥ 1m</i>	<u>Same as above plus</u> DDT, PCBs	<u>Same as above plus</u> DDT, PCBs, dissolved oxygen, salinity, temperature

Based on Time Schedule Order #2: “Starting after one year of the effective date of these Special Protections, storm runoff waste discharges having concentrations of measured constituents in excess of Table B, and in excess of the applicable reference stream, must be controlled...” The specific constituents listed are those that must be measured and therefore are assumed part of the compliance program. [Our interpretation of the meaning of the statement may be incorrect – The Board proposal needs clarification.]

**Table 3 - Receiving water limitations applicable to stormwater discharge categories
(beyond the surf zone)**

Discharger Category (based on pipe diameter and source)	Discharge site concentrations cannot exceed <u>Ocean Plan objectives (Table B and indicator bacteria)</u>	Discharge site concentrations cannot exceed concentrations at the mouth of the <u>Reference Stream</u>
MS4 pipe dia <0.5 m	None	None
MS4 pipe dia. ≥ 0.5 m outfalls	<i>(note: receiving water monitoring is not required by the Board for these discharge categories therefore no objectives currently apply; Regional Boards can request additional monitoring)</i>	<i>(see note)</i>
MS4 pipe ≥ 1m, also agricultural, industrial outfalls		
Discharger with more than 10 outfalls per ASBS <i>single largest outfall ≥ 1m</i>	Indicator bacteria [<i>total and fecal coliform and enterococcus</i>] Arsenic, Cadmium, Chromium (Hex), Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Cyanide, Chlorine Residual, Ammonia, Acute & Chronic Toxicity, Phenolic Compounds (non-chlorinated), Chlorinated Phenolics, Endosulfan, Endrin, HCH, Radioactivity (<i>Table B aquatic life objectives</i>) <i>(instantaneous maximum for storms and six month median for dry weather)</i> PAHs, DDT, PCBs	O&G, Sett. Solids, TSS, turbidity, pH (<i>Table A constituents</i>) Arsenic, Cadmium, Chromium (Hex), Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Cyanide, Chlorine Residual, Ammonia, Acute & Chronic Toxicity, Phenolic Compounds (non-chlorinated), Chlorinated Phenolics, Endosulfan, Endrin, HCH, Radioactivity (<i>Table B aquatic life objectives</i>) PAHs, DDT, PCBs Organophosphate pesticides, pyrethroids, dissolved oxygen, salinity, temperature ⁴

Based on Time Schedule Order: “Stormwater effluent runoff must be controlled to protect natural water quality in the ASBS receiving water, and to be comparable to background levels, as determined in each Region by comparison to reference streams. In no event shall natural water quality in the ASBS receiving water, during storm events, exceed the instantaneous maximum for Table B constituents. In no event, during the dry season, shall water quality in the ASBS exceed the six month median for Table B constituents, as a result of the discharges subject to these Special Protections....” Also, from page 5: “For constituents other than indicator bacteria, natural water quality will be determined using the approved reference monitoring station. For indicator bacteria, the Ocean Plan bacteria objectives will be used.” The specific constituents listed are those that must be monitored.

⁴ Apparently pH, salinity and temperature in the reference stream cannot be exceeded (?).

7. Schedule viability (Time Schedule Order)

In addition to the feasibility of attaining the new limitations, we have two additional concerns regarding the Time Schedule Order. The proposed Order will require that dischargers attain a 25% per year reduction for any runoff constituent concentrations in excess of Ocean Plan Table B or the Reference Stream concentrations. "Natural" levels must be achieved within five years.

- a) Most controls are not constructed in a piece-meal manner. For example, a sand filter to reduce particulates is not constructed in 25% increments: it is either operational or not operational. The Order should provide a final deadline and possible interim steps such as completing planning. The incremental reduction approach is not viable.
- b) The Order requires that the discharges come into compliance with the discharge limitations within 5 years of the effective date. It is not reasonable to expect the permittees to acquire funding, complete planning and design, receive the needed permits, and complete construction in this time interval. In particular, the necessary CEQA analysis as well as the need for Coastal Plan and related approvals may take years due to the sensitivity of construction in the coastal zone. Since diversion appears to be the only means for achieving compliance, the Time Schedule Order needs to take this into account as well.

8. Scientific basis for using an unimpacted stream as a compliance standard

We are unaware of any precedent for establishing effluent limitations and receiving water standards based on constituent concentrations in a stream in an undeveloped watershed⁵. In addition to the procedural issues addressed above, we have the following technical concerns regarding this approach:

- a) *Data requirements* - How many samples are needed from the runoff and from the *Reference Stream* to establish an effluent limitation and determine compliance? Obviously, storms vary in strength and watershed conditions change year-to-year. However, the proposed Time Schedule Order states that beginning one year after the effective date of the Special Protections, the discharger must begin making reductions in measured constituents "in excess of the applicable reference stream." This strongly implies that the Reference Stream-based effluent limitations are established with one year or less of monitoring. Will this short monitoring period establish a valid basis for the new effluent limitations used for compliance purposes and for identifying the need for treatment facilities? Can the Board provide information of where this approach has been tried elsewhere and was it successful?
- b) *Appropriateness of using a Reference Stream* – The perennial stream used as a Reference Stream for compliance purposes is likely to have different constituents from stormwater runoff because of the source of the water. Perennial streams receive much of their flow from groundwater. Stormwater runoff is exclusively surface flow. The chemistry and biology will be different for these reasons. For example, even in an undeveloped area,

⁵ Some TMDLs use unimpacted watersheds as the basis for identifying acceptable *frequencies* of exceedances.

stormwater runoff may carry more bacteria than a stream because of proportionately more contact with surface areas and natural bacteria sources.

- c) *Identification of the Reference Stream* – In each Region, runoff from a “watershed with minimal anthropogenic impacts” is used as the basis for comparison with stormwater effluent. What criteria have been used to identify such watersheds? Do they even exist in each Region? Since some development exists virtually everywhere, what are the minimum or maximum thresholds for the categories typically used to categorize land use: commercial, industrial, high density residential, low density residential, water/wetlands, grass/pasture, agricultural, and forest. Have any acceptable streams been identified by the Board?

Clarification of the technical issues above is necessary for an assessment of impacts in the environmental analysis.

9. Scientific basis for biological comparisons

The Special Protections require permittees perform a quantitative survey of benthic marine life near the discharge and at a reference site. In addition, a bioaccumulation study must be conducted within immediate proximity to representative discharge sites and at reference stations. We have two questions regarding this data:

- a) Will these data be used for compliance purposes? In other words, will the permittee have to demonstrate that the discharge does not cause increased bioaccumulation or decreased numbers of benthic organisms or decreased diversity at the discharge location?
- b) Is the comparison meaningful: Marine biota differs in major ways from point to point along the coast. How will the monitoring program distinguish between differences attributable to the stormwater and differences due to diverse morphology, substrate, local geology, temperature, currents, etc?

10. Scientific basis for sediment comparisons

Permittees also will be required to sample subtidal sediment at or near the mouths of the reference streams and at the discharge outfalls. These samples will be analyzed for large variety of parameters ranging from radioactivity to pyrethroids and OP pesticides. We have similar questions regarding this sampling effort as we did for the biological sampling.

- a) Will this data be used for compliance purposes?
- b) Is the comparison meaningful due to the natural variation discussed above?
- c) A discharge of intermittent runoff is likely to differ significantly from a perennial stream (i.e., the Reference Stream) in its impact on sediment because they are different types of waterways. Is this a valid basis for comparison?

11. Which Ocean Plan limitations are to be used for compliance?

The Special Protections are not clear regarding which Ocean Plan limitations are to be used for compliance purposes for evaluating the runoff. This is a critical issue because the “*Daily Maximum*” objectives are generally 2.5 times more restrictive than the “*Instantaneous Maximum*” objectives. The Special Protections clearly specify use of the *Instantaneous Maximum* objectives for evaluating the discharge in the receiving water after dilution in the surf zone.

However, the Special Protections are silent on what objectives are to be applied to the runoff before discharge. For assessing compliance problems in Table 1 we have assumed it is the Board’s intent to use the *Instantaneous Maximum* values for assessing the runoff. However, this required runoff assessment includes the parameters for acute and chronic toxicity. These two parameters do not have objectives for *Instantaneous Maximum* but they do for *Daily Maximum*.

These questions need answers:

- For evaluating the runoff (pre discharge), does the Board intend to use *Instantaneous Maximum* for most of the Table B but *Daily Maximum* for the two toxicity parameters? Or, perhaps *Daily Maximum* values are to be used to assess the discharge for all the effluent limitations?
- The Special Protections are clear in applying the *Instantaneous Maximum* values to the receiving water sampling results but some of the monitored parameters do not have *Instantaneous Maximum* objectives: indicator bacteria, PAHs, DDT, and PCBs. Which objectives are to be used for these parameters?
- The receiving water and the effluent must also be sampled for additional parameters including those in Table A (TSS, grease & oil, settleable solids, turbidity, pH), DO, salinity, temperature, OP pesticides, and pyrethroids. None of these has *Instantaneous Maximum* objectives, and some do not have objectives at all. What objectives or other criteria will be used?

12. Sample compositing

There is also a contradiction between the Special Protections and the Ocean Plan regarding the use of composited samples. Special Protections provision 5.a. requires that samples collected from the Reference Streams must use flow weighted sampling. Provision 6.d., similarly requires that permittees with more than ten outfalls, such as the Department, must use flow weighted composites for runoff samples. Typically, the results of flow-weighted sampling are compared with Ocean Plan objectives for “Daily Maximum” or even longer compliance periods as required in the Ocean Plan. In Section III.C.4., the Ocean Plan specifies:

- g. *The daily maximum shall apply to flow weighted 24-hour composite samples.*
- h. *The instantaneous maximum shall apply to grab sample determinations.*
- i. *If only one sample is collected during the time period associated with the water quality objective (e.g., 30-day average or 6-month median), the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.*

However, in the proposed Time Schedule Order, the proposal states that, “In no event shall natural water quality in the ASBS receiving water, during storm events, exceed the instantaneous maximum for Table B constituents.” This clarifies the intent that the receiving water limitations are based on the Table B *Instantaneous Maximum* objectives (when available) but this appears to conflict with the Ocean Plan requirements that flow weighted composites be compared with the daily maximum values and that only grab samples are to be applied to the *Instantaneous Maximum* values.

As noted above, the use of specific sets of objectives (*Instantaneous Maximum* or *Daily Maximum*) have a major impact on whether the runoff with treatment can comply with the Special Protections. The environmental analysis must resolve these issues.

13. Policy regarding run-on and commingled discharges

The Coastal Highway is down gradient of many of the stormwater sources that discharge into ASBS. In some locations, such as Malibu for example, the vast majority of runoff is from upgradient sources. The Department does not have enforcement powers against these sources nor can it block the drainage system to prevent these upgradient flows from passing through the Department’s drainage facilities in the right-of-way. The policy needs to clearly specify that the individual sources are responsible for their own runoff and for compliance with the Special Protections.

14. Other monitoring issues - First flush

Item 7 of the Special Protections states:

“Runoff and receiving water samples must be collected, if possible, during a storm event that is greater than 0.1 inch and at least 72 hours from the previously measurable storm event. ... Alternatively, storm water samples must be collected during the first hour of discharge from the first storm event of the wet season, and for 5(a), 5(b), 6(d), and 6(e) above at least two other storm events in the wet season.”

Does the Board mean “Additionally” rather than “Alternatively.” Is the intent that the first storm always be sampled or is this optional?

15. Ban on new outfalls

The Special Protections ban new outfalls and discharge locations, however, these are essential in some cases:

- The Department may need to separate its flows from discharges that are currently co-mingled. In this case a new outfall is required.
- Solutions to meeting the ASBS special protections may require modified or additional outfalls.
- During roadway reconstruction maintaining the existing discharge location may require additional piping and pumping facilities.

- New treatment facilities will be required to meet the performance requirements. Adequate space may not be available at the location of the original outfall to construct a sand filter or other treatment because the only available space may be some distance away. Returning the treated flow to the original outfall location wastes funds and provides no environmental benefit.

Consequently, this ban on new outfalls imposes a major constraint. The environmental analysis must directly assess these reasonably foreseeable impacts.

16. Designated design storm

Hydraulic facilities, including conveyance, pumping, and treatment facilities must have a design basis. Storm water runoff facilities are generally based on a design storm. The Board has not identified the design storm associated with its proposed Special Protections. Is the design storm one-year, 5-years, or 100-years? The Special Protections need to recognize that storms with runoff exceeding that of the design storm will not comply with the specified numeric criteria for runoff and receiving water.

17. Requirements for “upstream discharges” – *The Crystal Cove case*

Discharges of runoff to streams tributary to ASBS “must be controlled to maintain natural water quality conditions in the ASBS.” How will this provision be implemented? Currently, some ongoing diversion projects such as those at Crystal Cove are taking runoff and discharging it to streams tributary to ASBS. At the August 2 workshop, Board staff indicated that these current (and Board approved) diversion projects may not be acceptable, i.e., should we cease these practices or activities? The Board policy needs to be clarified.

18. Direct impacts of sampling program

Permittees such as the Department with more than ten outfalls will need to provide flow-weighted composites. Many of the discharge locations are remote and installations at roadsides or in Reference Streams will be reasonably complex. The sampling facilities will in some cases be placed in pristine locations with associated impacts on the aesthetic quality of the area. This installation of composite sampling equipment, including safe egress will cause impacts that need to be assessed and disclosed.

19. Costs and benefits

As discussed above, the Special Protections apply very restrictive performance standards to stormwater runoff. These standards will require either a very high level of treatment or diversion away from the ASBS. These options will be very costly and will potentially have significant and non-mitigated impacts in the coastal zone. The State Water Board has not identified any environmental problems associated with the current stormwater discharges from State highways other than the fact that the runoff is not “natural.” The Board has also not shown that water quality in ASBS beyond the surf zone deviates from “natural water quality.” (We also note that this term is yet to be defined.)

Significant public expenditures should result in public benefits such as identifiable environmental improvements. We have seen no evidence that the necessary expenditures will have such environmental benefits. If specific water quality problems do exist they should be targeted.

20. Alternative approaches for managing ASBS

During the hearings on the Special Protections, the Board staff recommended that interested parties submit suggestions regarding alternative approaches. We offer the following suggestions:

Modification of the Ocean Plan - The Board should reconsider modification of the Ocean Plan as was originally proposed by the Board in the *Informational Document* issued in late 2003 for the January 23, 2004 scoping meeting. This proposal removed the absolute ban on storm water discharges and replaced it with a provision allowed continued discharges not adversely affecting the ASBS. The current proposal to maintain "natural water quality" equivalent to some prehistoric state is simply not feasible. We note that the Department supported the overall concept of modifying the Ocean Plan as proposed in 2003:

We support the use of special conditions for these [ASBS] discharges as specified in Marine Managed Areas Improvement Act (AB 2800). The Act provides that discharges may continue where they do not adversely impact the ASBS/SWQPA. This approach is preferable to the interpretation that such discharges are prohibited by the current Ocean Plan. [*Letter of January 28, 2004 from the California Department of Transportation to the SWRCB*]

The current approach is to use temporary exceptions from the Ocean Plan to address all storm water runoff into the ASBS. This is a procedurally awkward approach for addressing discharges which are neither temporary nor exceptional.

Problem identification should be the first step – As we have suggested in previous letters, the first step in initiating a new compliance program should be problem identification. What negative environmental impact are we trying to correct other than a presumed violation of a newly interpreted Ocean Plan prohibition? The Board has presented no evidence showing that storm water runoff from highways causes detectable changes in ASBS water quality.

Any new programs and regulatory efforts should be directed at solving any identified environmental problems.

San Diego triad approach – The proposed San Diego MS4 permit uses a triad approach for determining the priority and level of responses for apparent exceedances of numeric criteria. The following factors are assessed:

- Chemical characteristics
- Toxicity
- Biological community

Exceeding the chemical numeric criteria is relatively lower priority. If toxicity is present then the discharge receives a higher priority and if the biological community is impacted, the highest priority response is required. The triad approach appears a reasonable method for determining the priority for spending public monies by focusing on substantiated problems.