UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

AUG 08 2011

Reply to:
WTR-5

John H. Madigan
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street
Oakland, CA 94612

Re.: Hayward Marsh (NPDES Permit No. CA0038636, Order No. R2-2011-XXXX)

Dear Mr. Madigan:

We have reviewed the subject draft National Pollutant Discharge Elimination System ("NPDES") permit for Hayward Marsh. We appreciate the considerable effort by Regional Water Board staff that has gone into development of the draft permit and supporting documentation. We commend the Regional Water Board's ongoing effort to reissue permits with up-to-date requirements in a timely manner. Our comments on the draft permit are detailed, below.

Discharge Point E-1 effluent limits for fecal coliform

The 2006 permit specifies fecal coliform effluent limits for the inlet to Basin 1 of the Hayward Marsh treatment ponds, expressed as a 5-day log mean of 500 MPN/100 ml and a 5-day 90th percentile of 1,100 MPN/100 ml[1], with a weekly monitoring frequency. The draft permit proposes slightly revised fecal coliform effluent limits. Concurrently, in a separate water quality standards action, the Regional Water Board is proposing to de-designate the water contact recreation (REC-1) beneficial use for Hayward Marsh (Ponds 3A and 3B). When this water quality standards amendment becomes effective for Clean Water Act purposes, the applicable water quality objectives for bacteria indicators in Hayward Marsh will be based on the protection of non-contact water recreation (REC-2).

Current monitoring data for fecal coliform show that the quality of effluent discharged to Basin 1 is better than necessary to protect the REC-2 beneficial use. We recommend that the fecal coliform effluent limits in the 2006 permit, representing current performance, continue to apply in the reissued permit. This ensures that the current level of water quality protection achieved in Hayward Marsh (Ponds 3A and 3B) remains at the level required by the State's antidegradation policy. Considering the marsh's unique environmental setting and presence of endangered species, we advocate that future permits should not allow backsliding from the current performance levels for fecal coliform discharged to Basin 1. Also, we recommend that

[1] These same effluent limits are also used to protect the designated beneficial use of REC-1 in Lower San Francisco Bay, following initial dilution provided by the East Bay Dischargers Authority's common outfall.

performance based fecal coliform effluent limits in future permits be expressed with averaging periods and sampling frequencies that can be readily compared with applicable Basin Plan objectives for bacteria indicators.

Human health (organisms only) criteria protecting Estuarine Habitat designated use

We note that the draft permit and fact sheet omit the application of human health (organisms only) criteria protecting the Estuarine Habitat (EST) designated beneficial use in Hayward Marsh (Ponds 3A and 3B). Based on our telephone conversation of August 1, 2011, we have your assurance that this inadvertent omission will be corrected in the final permit. The final permit will incorporate a revised reasonable potential analysis and any WQBELs necessary to protect the EST beneficial use through the application of human health criteria, following procedures in sections 1.3 and 1.4 of the State Implementation Policy.

Mixing zones and WQBELs for total ammonia, nickel, copper, and cyanide

According to the Basin Plan, shallow water dischargers such as Hayward Marsh are subject to Discharge Prohibition No. 1, which protects beneficial uses in areas that receive very limited, if any, dilution. When an exception to this prohibition is granted by the Regional Water Board, the discharger must demonstrate that not only State Implementation Policy mixing zone conditions are achieved, but an aggressive pretreatment and source control program is in place after rigorous scrutiny of source control efforts and receiving water data by the Regional Water Board. When dilution is granted, the permit must include provisions requiring continuing source control efforts targeting the pollutant to which the exception applies.

The receiving water body, Hayward Marsh (Ponds 3A and 3B), is an effluent-dominated receiving water that flushes only during the tidal cycle, with retention times on the order of a week or longer. The draft permit proposes mixing zones for total ammonia, nickel, copper, and cyanide based on the results of a mixing zone study by Union Sanitary District, dated 2010. Our review of this study suggests it is not thorough enough to support—over the life of the permit—the large mixing zones and corresponding passive mixing dilution credits proposed for this permit term. These mixing zones dominate and entirely encompass Hayward Marsh (Ponds 3A and 3B) and extend into Lower San Francisco Bay. In some cases, because acute and chronic mixing zones are identically sized, the resulting WQBELs are greater than acute aquatic life criteria within the regulatory mixing zones (i.e., total ammonia, copper, and cyanide).

The 2010 mixing zone study is cursory. More must be done by the Dischargers to describe and demonstrate the amount of dilution occurring at the conditions found to be most critical for effluent and receiving water mixing, and the manner by which diffusion and dispersion occur, in Hayward Marsh (Ponds 3A and 3B). Acute toxicity levels in Hayward Marsh (Ponds 3A and 3B) should be fully characterized, utilizing the advantages of the Test of Significant Toxicity approach (*National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*, EPA 833-R-10-003, June 2010), to demonstrate that acutely toxic conditions do not occur as a result of regulatory mixing zones authorized by the permit. Receiving water concentrations for pollutants with authorized mixing zones should be well characterized within the marsh (Ponds 3A and 3B), and immediately downstream. Potential

effects on endangered species and their habitats should be described and any adverse impacts that result from the discharge, eliminated. As discussed on August 1, we are requesting that you add: (1) a permit condition that requires the Dischargers to conduct, soon after permit reissuance, a comprehensive mixing zone study that addresses the shortcomings of the 2010 study; and (2) a permit reopener condition that anticipates the need for permit modification in response to the comprehensive study.

In connection, we've noted that total ammonia concentrations being discharge from the Hayward Marsh treatment ponds are unusually variable (and sometimes quite high) for a well-operated secondary treatment plant effluent. As a result, we recommend that more be done to optimize existing operations and control ammonia levels at Alvarado Wastewater Treatment Plant. We note that such actions are not only required by Basin Plan provisions used by the Regional Water Board to authorize shallow-water dilution credits, but are necessary to ensure that the antidegradation standard is met in Hayward Marsh (Ponds 3A and 3B).

Our endorsement of the final permit is contingent upon the inclusion of these requested revisions in the final permit. We support your continuing efforts to ensure protection of water quality in this unique setting, through refinements to the limits and conditions of the proposed permit (e.g., new WQBELs for total ammonia, the proper application of receiving water objectives to Hayward Marsh (Ponds 3A and 3B), etc.). If you have questions regarding our comments, please contact Robyn Stuber, of my staff, at (415) 972-3524 or stuber.robyn@epa.gov.

Sincerely,

Eugene Bromley

for David W. Smith, Manager
NPDES Permits Office