

State of California
California Regional Water Quality Control Board, Los Angeles Region

RESOLUTION NO. R12-004

Approving the City of Los Angeles' Proposed Special Study for the
Hyperion Treatment Plant

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board), finds that:

1. The Regional Water Board adopted Waste Discharge Requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit (Order No. R4-2010-0200) for the Hyperion Treatment Plant on November 2, 2010.
2. The NPDES permits contain a requirement for the City of Los Angeles (City) to consult annually with the Regional Water Board to determine the need for special studies. Detailed scopes of work for proposals shall be presented to obtain Regional Water Board approval and to inform the public. Special studies are focused on refined questions regarding specific effects or development of monitoring techniques and are anticipated to be of short duration and/or small scale, although multiyear studies also may be needed. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring the same, arising out of the results of core or regional monitoring, may be pursued through special studies.
3. The NPDES permit also requires that the City conduct a special study regarding nutrient loading and receiving water impacts. The City shall propose, as a special study, a summary assessment of existing nutrient data (both effluent and receiving water) collected under the permit during the period of secondary treatment and quantify the resulting effects, if any, of the discharge on receiving water quality for dissolved oxygen, pH, and percent transmission.
4. On December 20, 2011, representatives from the City of Los Angeles met with Regional Water Board staff to discuss the following proposed special study for 2012: Nutrient Loading and Receiving Water Impacts.
5. Regional Water Board staff believe that the proposed special study fulfills the requirements of the NPDES permit and recommend that it be approved by the Regional Water Board.

April 5, 2012

Resolution No. R012-004

Approving the City of Los Angeles' Proposed Special Study for the Hyperion Treatment Plant

THEREFORE, BE IT RESOLVED THAT:

1. The Regional Water Board believes that the following proposed special study for 2012: Nutrient Loading and Receiving Water Impacts merits approval.
2. The Regional Water Board hereby approves the City of Los Angeles' special study proposal.

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on April 5, 2012.



Samuel Unger, P.E.
Executive Officer

**City of Los Angeles
Bureau of Sanitation
Hyperion Treatment Plant (HTP)
Proposed Special Study
Nutrient Loading and Receiving Water Impacts**

Introduction:

This proposed special study is required under the Hyperion Treatment Plant (HTP) NPDES Permit (CA0109991, Order No. R4-2010-0200). The Sanitation Districts of Los Angeles County (LACSD) has a similar requirement in their current NPDES Permit (CA0053813, Order No. R4-2011-0151) for their Joint Water Pollution Control Plant (JWPCP). Therefore, we propose to coordinate our effort with that of the LACSD to produce a comprehensive product with greater efficiency and consistency.

The study, as described in both Permits is to consist of "...a summary assessment of existing nutrient data (both effluent and receiving water) collected under the Order/Permit during the period of secondary treatment and quantify the resulting effects, if any, of the discharge on receiving water quality for dissolved oxygen, pH, and percent transmission."

The period of full-secondary treatment at HTP began in November 1998 and at JWPCP in November 2002. Although the permits only require the study to assess the period of secondary treatment, we propose to include a pre-full-secondary period in the analyses. This will facilitate assessment of any changes that occurred following implementation of full-secondary treatment.

Three study periods are being considered. They are a) the five years prior to the start of full-secondary treatment at HTP (November 1993 through October 1998), b) the early period of full-secondary treatment at HTP and partial-secondary treatment at JWPCP (November 1998 through October 2002), and c) the post-full-secondary treatment period at both plants (November 2002 – December 2011). As data are acquired and analyzed, the transition dates between these study periods may be modified to better identify any patterns.

Objectives:

The objectives of the study are as follows:

- Summarize existing nutrient data for both POTWs prior to and following initiation of full-secondary treatment;
- Document changes in mass loadings due to initiation of full-secondary treatment;
- Quantify any identified impacts on receiving water quality for DO, pH, and light transmission; and
- Identify the geographical distribution of any identified impacts on receiving water quality for DO, pH, and light transmission.

Benefits:

This study will provide an evaluation of the status and trends of nutrient contributions from these POTWs, including documentation of any changes following the initiation of full-secondary treatment. It also will contribute to an evaluation of the contribution of these POTWs relative to other nutrient sources, such as upwelling, aerial deposition, and runoff. Our final report will also include discussion of potential modifications to existing POTW monitoring programs to improve assessment of nutrient impacts on receiving waters.

Approach:

We propose to tabulate annual mass loadings of nutrients (organic nitrogen, ammonia, nitrite, nitrate, dissolved phosphate, and total phosphate) from these two POTWs to their receiving waters for the aforementioned three time periods between 1993 and the end of 2011. Comparable effluent data for flow, BOD, pH, and turbidity will be tabulated also. Available nutrient data collected under Order/Permit for receiving waters for these same time periods will be tabulated. The effluent and receiving water nutrient data and other effluent data will be presented graphically, as time series, and will be summarized as averages and ranges for each study period, and these summary results will be presented graphically, to facilitate comparison between study periods representing different treatment levels.

In addition to the above mass loading evaluation, the nutrients in effluent from each POTW will be evaluated on a per capita basis, where changes in service area population, total effluent flow and levels of water recycling are considered. Results of these analyses will be presented in tabular and graphical format to facilitate understanding of any changes due to increased treatment increased water recycling, increased water conservation, and to illustrate any trends over time.

For each study period, average DO, pH, and light transmission in the study area receiving waters will be plotted as a 3D distribution showing patterns of distribution vertically in the water column, as well as up and down coast and perpendicular to the coastline from nearshore to the offshore. Using the average vertical profile produced from all data at all sites for each study period, an anomaly matrix for both absolute values and percent differences will be calculated. These anomaly results will be comparably plotted to the original parameter distributions for each of the respective study areas. These plots will facilitate visualization of spatial patterns. Tabular summaries of the anomaly in absolute values and percent differences for each parameter in each study period will be produced, these summary data will also be presented graphically to clearly illustrate any differences due to the POTW discharges, and to illustrate the range of background variability.

A nutrient study was included as a component of the Bight '08 Regional Monitoring Program. It is our intent to assess and integrate findings of this Bight '08 study into our report as appropriate.

Project Duration:

We estimate one year to complete this study, but due to our intent to integrate Bight '08 findings into our final report, our report may be delayed by no more than 12 months

following the release of the final Bight '08 Report (currently scheduled for summer 2012), in any case our final report will be submitted no later than December 2013.

Deliverables:

Written quarterly progress reports will be submitted to the Executive Officer of the Los Angeles Regional Water Quality Control Board by the 15th of the second month in each quarter (February, May, August, and November) for the duration of the study. It is anticipated that the first quarterly progress report will be submitted on August 15, 2012. The progress reports will summarize the specific task(s) completed during the previous quarter, identify specific participants (and agency) that performed the task(s), and concisely present an analysis of any results obtained for that quarter, as well as a summary of the results obtained to date. A final written report will be submitted no later than December 31, 2013.

Collaborators:

- Joint Outfall System (Los Angeles County Sanitation Districts)
- City of Los Angeles, Environmental Monitoring Division