CALIFORNIA
Water Boards

Los Angeles Regional Water Quality Control Board

September 16, 2015

Mr. Enrique Zaldivar, Director
Department of Public Works
City of Los Angeles
1149 South Broadway Street, 9th Floor
Los Angeles, CA 90015-2213

ADOPTED RESOLUTION APPROVING TEMPORARY BYPASS OF DISINFECTED SECONDARY EFFLUENT TO THE 1-MILE OUTFALL DURING THE EFFLUENT PUMPING PLANT HEADER REPLACEMENT PROJECT FOR CITY OF LOS ANGELES, HYPERION TREATMENT PLANT (NPDES NO. CA0109991, CI NO. 1492)

Dear Mr. Zaldivar:

The Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) staff transmitted a letter containing the Revised Tentative Resolution for the City of Los Angeles' Hyperion Treatment Plant on August 31, 2015.

In accordance with administrative procedures, the Regional Water Board held a public hearing on September 10, 2015. During the public hearing, a minor change was made to condition number 4 on page 5 of the Revised Tentative Resolution to indicate that chlorine residual may be monitored within a 50 meter radius of the terminus of the 1-mile outfall, depending on the direction of the plume. The Regional Water Board reviewed the revised tentative requirements, considered all the factors in the case, and adopted the modified Revised Tentative Resolution No. **R15-008** at the public hearing.

The complete adopted Order will be sent only to the Permittee. However, these documents are available on the Regional Water Board's website for review. The Regional Water Board's web address is www.waterboards.ca.gov/losangeles/.

If you have any questions, please contact me at (213) 620-2083 or Steven Webb at (213) 576-6793.

Sincerely,

Cris Morris, P.E., Chief
Municipal Permitting Unit (NPDES)

Enclosures
Adopted Resolution No. R15-008

cc: See Mailing List

MAILING LIST

Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
NOAA, National Marine Fisheries Service
Department of Interior, U.S. Fish and Wildlife Service
State Water Resources Control Board
State Water Resources Control Board, Division of Drinking Water
Department of Fish and Wildlife, Region 5
California State Parks and Recreation
California Coastal Conservancy
California Coastal Commission, South Coast Region
Heal the Bay
Environment Now
Natural Resources Defense Council
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
Los Angeles County Department of Public Works
Southern California Coastal Water Research Project
Los Angeles Waterkeeper
United Water
City of Los Angeles
Los Angeles County Sanitation Districts
Surfriders Foundation

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RESOLUTION NO. R15-008

CITY OF LOS ANGELES
TEMPORARY 6-WEEK BYPASS OF DISINFECTED SECONDARY TREATED WASTEWATER TO THE 1-MILE OUTFALL FROM THE HYPERION TREATMENT PLANT

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board), finds:

1. The Regional Water Board and the United States Environmental Protection Agency (USEPA) jointly issued the Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit, Order No. R4-2010-0200, for the discharge of the Hyperion Treatment Plant's (HTP's) secondary-treated municipal wastewater into the Pacific Ocean. This permit was adopted by this Regional Water Board on November 4, 2010.

2. HTP has an average dry weather flow capacity of 450 million gallons per day (MGD). In 2014, HTP received and treated 269 MGD municipal wastewater from the City of Los Angeles. Of the 269 MGD, 231 MGD was discharged to the Santa Monica Bay and the remaining 38 MGD was pumped to West Basin Municipal Water District (West Basin) for additional treatment and recycling.

3. There are two outfalls that convey secondary effluent from HTP to the Pacific Ocean, the 12-foot diameter 5-mile outfall (Discharge Point 002) and the 12-foot diameter 1-mile outfall (Discharge Point 001). The 5-mile outfall terminates approximately 5 miles west-southwest of the treatment plant and it is the only outfall permitted for the routine discharge of undisinfected secondary-treated effluent. The 1-mile outfall is approximately one mile west-southwest of the treatment plant and is permitted for emergency discharge of chlorinated secondary-treated effluent during extremely high flows, preventative maintenance such as routine opening and closing the outfall gate valves for exercising and lubrication, during intense storms or storms associated with plant power outages, and direct discharge of undisinfected storm water overflow from the HTP.

4. For the constituents chlorine residual, ammonia as nitrogen (N), and chronic toxicity, Order No. R4-2010-0200 prescribes the following final effluent limitations for discharges from the 1-mile outfall:

Table 1. Partial List of Final Effluent Limitations for Outfall 001 in Order No. R4-2010-0200

Constituent	Units	Effluent Limitation		
		Average Monthly	Maximum Daily	Instantaneous Maximum
Chlorine Residual	µg/L	28	112	840
	lbs/day	98	320	2,900
Ammonia as N	mg/L	8.4	34	84
	lbs/day	29,000	120,000	290,000
Chronic Toxicity	TUc	--	13	--

These final effluent limitations are expressed as an average monthly, a maximum daily, and an instantaneous maximum. These limits were developed from the Ocean Plan objectives and a dilution ratio of 13:1 based on the plant average design flow rate of 420 MGD.

5. Section VIII.A.2. of the Monitoring and Reporting Program of Order R4-2010-0200 requires the City of Los Angeles, Bureau of Sanitation (LASAN) to notify the Regional Water Board and USEPA in advance of any proposed construction, maintenance, or modification to the POTW that could potentially affect compliance with applicable requirements. LASAN is also required to submit advanced notice of any anticipated bypass as described in Section I.G.5.a. of Attachment D - Standard Provisions of Order R4-2010-0200.

   On June 08, 2015, LASAN requested approval to temporarily divert chlorinated secondary effluent discharged from the normally used 5-mile outfall to the 1-mile outfall during the necessary replacement of the effluent pumping plant header, scheduled for September 2015 (2015 Effluent Pumping Plant Header Replacement Project or 2015 EPP Project). The diversion is required to conduct major overhaul work on the effluent pumping system to prevent future catastrophic failure. This work is tentatively scheduled from September 21, 2015 to November 2, 2015, a total of 6 weeks (five weeks of planned overhaul plus one week of contingency time). During the 5-week diversion period, the overhaul will be conducted continuously (24 hours per day, 7 days per week). The 5-mile outfall and effluent pumping system at HTP were placed into service in 1960 and they have served well for the past 55 years without any unpredicted shutdowns. They are important assets of HTP that cannot be easily replaced. Based on internal inspections of the system in 2006 and subsequent investigations, the effluent pumping system is in need of a major overhaul to prevent failure and ensure that it functions reliably. The overhaul project includes replacement of piping and the 120-inch gravity valve, and rehabilitation of various components of the effluent pumping system. A complete shutdown of the 5-mile outfall and effluent pumping system is required to perform the work.

6. LASAN considered various alternatives to the replacement or refurbishment of the Effluent Pumping Plant Header and other ancillary items such as the EPP pumps' discharge and suction pipes, clean out, and pipe joints. In the evaluation of alternatives, the major decision criteria were life expectancy of the replaced or refurbished system, environmental impact, worker safety during the construction, and cost of the overall project. For the EPP Header itself, which is the main portion of the project, LASAN opted to replace it rather than refurbishing it. The life expectancy of the replacement is 50 years, whereas refurbishing the EPP Header by wrapping the inside with carbon fiber would only have a life expectancy of about 20 years at a cost higher than the replacement. Both alternatives, as well as the replacement of the 60 year old gravity valve at the 5-mile outfall, would require the shutdown of the 5-Mile Outfall for construction and for the safety of the workers. Since the total capacity of the upstream treatment plants (Los Angeles-Glendale and Donald C. Tillman Water Reclamation Plants) are not large enough to treat the daily flow at HTP and there is no feasible option to store over 250 million gallons of flow per day, the discharge to the 1-Mile outfall is the only practical alternative for the duration of the 2015 EPP Project.

7. On April 28, 2015, representatives from LASAN and the Regional Water Board discussed the details of the 1-mile outfall diversion during the 2015 EPP Project. Based on final effluent water quality data and the current initial dilution ratio of 13:1 for Discharge Point 001, LASAN will not be able to meet the final effluent limitations for chlorine residual,

ammonia, and chronic toxicity. The Regional Water Board requested that LASAN conduct a technical study to estimate the dilution that would be expected with the current 250 MGD discharge scenario to assess the potential impact the proposed discharge may have on human health and aquatic life.

On June 8, 2015, LASAN also requested a Time Schedule Order (TSO) and interim limitations for chlorine residual, ammonia, and chronic toxicity, for the duration of the 2015 EPP Project. In addition to the TSO request, the City also submitted an extensive monitoring and reporting plan (*Environmental Monitoring Plan for the Diversion of Secondary-Treated Effluent from the 5-Mile Outfall to the 1-Mile Outfall for the EPP Header Rehabilitation Project* or EPP Project Monitoring Plan) and a dilution study evaluation (*Hyperion Treatment Plant 1-Mile Outfall Dilution Study 250 MGD Evaluation* or 2015 Dilution Study) for the current average flow rate at HTP. The monitoring and reporting plan outlines the monitoring that will be conducted before, during, and after the 2015 EPP Project. The 2015 Dilution Study includes an updated evaluation of the 1-mile outfall dilution ratio for chlorine residual, ammonia, and chronic toxicity, using the current average effluent flow rate of 250 MGD, recent water quality data, and data from the previous 1-mile diversion in November 2006.

8. The Hyperion 1-mile outfall is a 12-foot diameter reinforced concrete pipe approximately 5,400 feet long. The outfall includes a 300-foot diffuser section. The end of the outfall is approximately 50 feet below the water surface. There is one 18-inch by 54-inch slot on each side of each 100-foot section of the pipe forming the diffuser, and three upper ports and one lower grill on the end cap.

   The Cornell Mixing Zone Expert System (CORMIX) is a dilution model approved by the State Water Resources Control Board and the United States Environmental Protection Agency for use in the assessment of regulatory mixing zones resulting from continuous point source discharges.

   Regional Water Board staff has reviewed the CORMIX modelling results submitted by LASAN and determined that the initial dilution zone for this situation occurs when the plume covers a 200 meter radius around Discharge Point 001. The CORMIX model calculates an initial dilution ratio of 27:1 at the edge of this mixing zone. Regional Water Board staff used the 27:1 dilution ratio to calculate daily average and 6-month median interim limits during the proposed 1-mile outfall discharge during the 2015 EPP Project. These limits in effect during the temporary bypass constitute conditions that must be met during the bypass.

9. Based on the available information, the Regional Water Board staff determined that issuing a TSO for this discharge is not appropriate.

10. Discharge to HTP's 1-mile outfall is considered a bypass of the 5-mile outfall. Order No. R4-2010-0200 [Provision I.G.3 of the Standard Provisions] and 40 Code of Federal Regulations (CFR) Part 122.41 (m)(4)(i) prohibit bypass- the intentional diversion of waste streams from any portion of a treatment facility. Provision I.G.3 (Order No. 2010-0200) and 40 CFR Part 122.41 (m)(4)(ii) provide that the permitting authority may approve an anticipated bypass, after considering its adverse effects, if the bypass meets the following conditions:

a. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
b. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
c. The permittee submitted a notice at least ten days in advance of the need for a bypass to the Regional Board.

11. The bypass is unavoidable because it is required for the proper maintenance and operation of the 5-mile outfall to prevent catastrophic failure and it was selected as the best feasible alternative as described in finding 6. There are also no feasible alternatives to store the effluent for the required amount of time and the upstream treatment plants cannot treat the daily flow rate. Based on the foregoing findings, the documents contained in the record, and the notice provided on June 8, 2015, the Regional Board finds that the 6-week bypass complies with the conditions in Provision I.G.3 of the Standard Provisions and 40 CFR Part 122.41 (m)(4)(i) for an approved bypass. The Regional Board also finds that the 6-week bypass is for the benefit of the public in the long-term.

12. This Resolution conditionally approves the bypass of disinfected secondary effluent from the 5-mile outfall to the 1-mile outfall of the Hyperion Treatment Plant during the 2015 EPP Project, with special conditions.

The Regional Water Board, in a public hearing, heard and considered all testimony pertinent to this matter. All Orders referred to above, Regional Water Board files on this matter, and records of hearings and testimony therein are included in the administrative record for this matter.

THEREFORE, BE IT RESOLVED THAT:

1. In the event that the City fails to comply with Order No. R4-2010-0200 or any conditions of the anticipated bypass as referenced in this resolution, the Executive Officer may pursue an enforcement action against the City.

2. The Regional Water Board conditionally approves the anticipated bypass of the 5-mile outfall for diversion into the 1-mile outfall for a 6-week period in the fall of 2015 to repair and replace sections of the effluent pumping plant header, provided that the City implements mitigation measures, including but not limited to, the following conditions and provided that no impacts to the beneficial uses of the receiving water are caused by the discharges.

    a. The contractor hired to replace the effluent pumping plant shall work 24/7 in order to stay on the 5-week project schedule and minimize the duration of the diversion.
    b. The project schedule shall be in the fall 2015 to minimize the probability of a harmful algal bloom and associated biotoxin.
    c. The start date of the 2015 EPP Project shall be scheduled after Labor Day when children are in school to minimize the number of beachgoers.
    d. The chlorination of the effluent shall be managed to ensure that the discharge through the 1-mile outfall will decrease the microbial levels to below state water

quality standards and will minimize any adverse effect of the most sensitive chronic toxicity testing organism.

e. The City shall implement the extensive monitoring program developed by the City (EPP Project Monitoring Plan) and approved by the Executive Officer of the Regional Water Board. As noted in finding 7 above, this program includes monitoring that will be conducted before, during and after the 2015 EPP Project.

f. The City shall make every effort to inform the public and interested parties of the 2015 EPP Project and the possible consequences related to the 1-mile diversion.

g. The City shall ensure that an e-mail including the results of all three Fecal Indicator Bacteria tests is sent to the Los Angeles County Department of Public Health and Heal the Bay at least 6 times per week as soon as the results become available. The City shall also ensure the results are available through the City's public website.

3. If the 1 week contingency time as referenced in Finding No. 5 is not adequate due to unforeseen circumstances, the City shall make a written request to the Executive Officer requesting additional time to complete the 2015 EPP Project. The request shall include the amount of additional time required to complete the work and justification for why the additional time is required. The request for additional time may be granted or denied through modification of this resolution by the Regional Water Board or its Executive Officer.

4. The 2015 EPP Project is necessary for the operation and maintenance of the treatment plant and the following interim limitations only apply during this project that is tentatively scheduled from September 21 through November 02, 2015. For the duration of the 2015 EPP Project, the City shall maintain compliance with all final effluent limitations at Monitoring Location EFF-001 in section IV.A.2 of Order No. R4-2010-0200 except for chlorine residual, ammonia, and chronic toxicity. The interim limitations for the 1-mile outfall for these parameters during the 2015 EPP Project are listed in Table 2. Ammonia and chronic toxicity shall be monitored at EFF-001, and chlorine residual shall be monitored at the surface of the terminus of the 1-mile outfall within a 50 meter radius based on plume direction.

Table 2. Interim Limitations for Discharge Point 001 During the 2015 Effluent Pumping Plant Header Replacement Project for Flow Rates ≤ 250 MGD

Parameter	Units	Interim Limitations[1]		
		6-Month Median[2]	Maximum Daily	Instantaneous Maximum
Chlorine Residual	mg/L	0.056	0.22	1.7
	lbs/day	120	460	3,500
Ammonia as N	mg/l	17	67	170
	lbs/day	35,000	140,000	350,000
Chronic Toxicity	TUc	--	27	--

[1] Interim limitations are based on water quality objectives listed in Table 1 of the Ocean Plan. The minimum mixing zone (defined as 200 meters from discharge point 001) with a dilution ratio of 27:1 was used to calculate the interim limitations for these constituents and was selected based on the *Hyperion Treatment Plant 1-Mile Outfall Dilution Study 250 MGD Evaluation* conducted in June 2015.

The mass emission rates are based on the average dry weather flow rate of 250 MGD: lbs/day = 8.34 x Ce (effluent concentration in mg/L) x Q (flow rate in MGD). During storm events when flow exceeds the dry weather design capacity, the mass emission rate limitations shall not apply.

[2] The method for calculating the 6-month median is outlined in section III.C.4.f. of the Ocean Plan. The six-month median shall apply as a moving median of daily values for any 180-day period in which daily values represent flow weighted average concentrations within a 24 hour period. The daily value shall be equal to zero for days on which no discharge occurred. 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.

5. The Regional Water Board approves the EPP Project Monitoring Plan that was submitted by the City on July 28, 2015. The City shall submit a report to the Regional Water Board by April 1, 2016, that includes the available data and a compliance discussion for all of the conditions enclosed herein including the interim limitations for ammonia (as N), chlorine residual and chronic toxicity during the diversion. The City shall also submit any reports from other entities collaborating on the 2015 EPP Project, as the reports become available, to the Regional Water Board. The final 2015 EPP Project report that summarizes the results of the approved monitoring plan from all entities that collaborated on the project shall be submitted no later than April 26, 2017.

6. The Executive Officer is hereby authorized to submit a copy of this resolution to the City, the State Water Resources Control Board, the USEPA, other interested parties, and all who may request a copy.

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 September 10, 2015.

Samuel Unger

Samuel Unger, P.E.
Executive Officer