

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

TENTATIVE ADDENDUM NO. 1 TO ORDER NO. R9-2010-0032

**AN ADDENDUM UPDATING THE REQUIREMENTS FOR ULTRAVIOLET
DISINFECTION FOR THE CITY OF ESCONDIDO, HALE AVENUE RESOURCE
RECOVERY FACILITY**

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) finds that:

Background

1. The City of Escondido (hereinafter Discharger) is subject to waste discharge requirements as set forth in Order No. R9-2010-0032 for the treatment and discharge of 9 million gallons per day (mgd) of disinfected tertiary recycled water produced at the Hale Avenue Resource Recovery Facility (Facility).
2. On December 6, 2010 the Discharger notified the San Diego Water Board that John Burcham, Deputy Director of Utilities- Wastewater had been replaced by Dennis Sperino, who assumed all duties as Deputy Director effective December 9, 2010. As such, Mr. Sperino is authorized to sign and submit reports on behalf of the Discharger.
3. The ultraviolet (UV) disinfection system at the Facility was limited to 4.0 mgd by hydraulic inefficiencies that prevented the system from meeting the Order's disinfection requirements at higher flow rates. Any flow exceeding the 4.0 mgd rate is treated with a chlorine disinfection system to treat additional capacity, up to the 9 mgd flow rate. Order No. R9-2010-0032 Section V.C.1.b. required the Discharger to notify the San Diego Water Board, California Department of Public Health (CDPH), and San Diego County Department of Environmental Health of intentions to increase the UV capacity.

Completed Engineering Report

4. The Discharger submitted an engineering report titled *City of Escondido TrojanUV3000 UV Disinfection System UV Capacity Report* and dated August 26, 2010 by Carollo Engineers (Carollo, 2010). The Carollo 2010 report conformed to California Code of Regulations (CCR), Title 22, section 60323 and satisfied the Order No. R9-2010-0032 requirement for the Discharger to notify the appropriate agencies of its intention to increase the UV capacity.
5. CDPH provided recommendations for UV system design and operating specifications to the San Diego Water Board in a letter dated November 19, 2010. The Discharger installed mixers on the system and performed an on-site bioassay

that demonstrates the UV system compliance with disinfection requirements at 7.9 mgd.

California Environmental Quality Act

6. This Addendum No. 1 to Order No. R9-2010-0032 constitutes the permitting of a minor mechanical alteration of treatment processes, with no change to overall capacity, at an existing facility. As such this Addendum is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, section 21000 et seq.) in accordance with CCR Title 14, section 15301.

Public Participation

7. The San Diego Water Board has notified the Discharger and all known interested persons of the intent to prescribe this Addendum No. 1 to Order No. R9-2010-0032.
8. The San Diego Water Board in a public meeting has heard and considered all comments pertaining to Addendum No.1 to Order No. R9-2010-0032.

IT IS HEREBY ORDERED THAT the requirements of Order No. R9-2010-0032 are modified or replaced as follows:

- I. John Burcham is replaced by Dennis Sperino (760-839-4209) as Facility Contact and Authorized Person to Sign and Submit Reports (Table 4 and Table D-1).**

II. Section V.C.1.b. is modified as follows:

Prior to any changes in the treatment facilities, the Discharger shall notify the San Diego Water Board, and, for changes that may affect the discharge including increasing the flow from the UV disinfection system to greater than 7.9 mgd, prepare an engineering report conforming to CCR Title 22 section 60323. The engineering report shall be submitted to the CDPH, County DEH, and San Diego Water Board for review and response.

III. Facility Design and Operations Specification V.C.2.c.ii is replaced by:

- ii. Operation of the UV system as follows:
 - A. Equation 7 from *City of Escondido TrojanUV3000 UV Disinfection System UV Capacity Report* dated August 26, 2010 by Carollo Engineers (Carollo 2010) must be used as part of the automatic UV disinfection control system for calculating UV dose and should be programmed into the control system. The reduction equivalent dose for the TrojanUV3000 system is a function of flow rate (Q), UV transmittance (UVT) whether or not Bank 1 is in operation, and the number of banks in operation following Bank 1.

- B. When operating two channels, flow must be measured in each channel. The value for flow rate (Q) must be the higher of the flow measured in either channel.
- C. Mixers identical to those described in Carollo 2010 (1/4-horsepower) must be in operation ahead of each operational channel. Disinfection is not credited for the most upstream bank if the mixer is not in operation.
- D. The UV system must deliver a minimum UV dose of 100 millijoules per centimeter squared (mJ/cm^2) at all times. The TrojanUV3000 system must be operated with an automatic reliability feature that triggers startup of the next available UV lamp or reactor if the dose falls below $100 \text{ mJ}/\text{cm}^2$.
- E. UVT must be at or greater than 55 percent. Below 59 percent UVT, the flow must be reduced based upon Equation 7.
- F. UV lamps must be maintained below the maximum 12,000 hours of operation. An end of lamp life value of 0.879 shall be assumed, but shall be verified and reported to CDPH by an ongoing lamp age factor study as lamps age past 6,000 hours of use.
- G. The Discharger must chemically clean the quartz sleeves after every 30 days of operation. When taking a channel out of service for more than 30 days, cleaning the channel and the UV sleeves is required before operating the channel again.
- H. Equivalent or substitutions of equipment are not acceptable without demonstration to CDPH of equivalent disinfection performance.

IV. Facility Design and Operations Specification V.C.2.d is modified as follows:

- d. Within 180 days of adoption of this Addendum, the Discharger must submit to the San Diego Water Board a certification that the operations manual includes the information listed below. A copy of the facility operations manual shall be maintained at the Facility and shall be available to operation personnel and San Diego Water Board staff at all times. The following portions of the operations manual shall be posted at the treatment plant as a quick reference for treatment plant operators:
 - i. Alarm set points for secondary turbidity, tertiary turbidity, flow, and UV dose, transmittance, and lamp operation hours.
 - ii. Levels at which flow will be diverted as waste for secondary turbidity, tertiary turbidity, flow, chlorine residual, and UV dose, transmittance, and lamp operation hours.

- iii. When to divert flow for high daily and weekly median total coliform.
- iv. When the authorities (CDPH, County DEH, San Diego Water Board) will be notified of a diversion.
- v. Names and numbers of those authorities to be notified in case of a diversion.
- vi. Frequency of calibration for turbidimeters, flow meters, chlorine residual analyzers, and UV transmittance.
- vii. Frequency of mechanical cleaning and UV lamp tracking and replacement intervals.

V. The Monitoring and Reporting Program in Attachment C, Effluent Monitoring Requirement in Table C-4 is modified as follows:

Table C-4. Effluent Monitoring RWS-003

Parameter	Units	Sample Type	Minimum Sampling Frequency ^{a,b}
UV dose	mJ/cm ²	Continuous	Continuous
UV transmittance	%	Continuous	Continuous
Total Coliform Bacteria ^c	MPN/ 100 mL	Grab	Daily when UV system operates
c. Samples for total coliform bacteria shall be collected at least daily and at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.			

VI. Attachment E, Rules and Regulations for Recycled Water Use, Item Y is modified as follows:

- Y. No person other than the Discharger shall deliver recycled water to a facility. The Discharger must enroll individual residences under the master reclamation permit or other WDRs. Only the Discharger may establish a recycled water connection for an individual residence.

I, David W. Gibson, Executive Officer, do hereby certify that this Addendum No. 1 is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on February 9, 2011.

TENTATIVE

David W. Gibson, Executive Officer