

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

SPECIAL ORDER NO. R5-2005-0065
MODIFYING WASTE DISCHARGE REQUIREMENTS ORDER NO. 95-244

FOR
CHILDREN'S HOSPITAL CENTRAL CALIFORNIA
WASTEWATER TREATMENT FACILITY
MADERA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. Children's Hospital Central California (hereafter Discharger) owns and operates a wastewater treatment facility (WWTF) that serves its hospital in Madera County. The WWTF, and its associated effluent disposal area, is in Sections 16 and 17, T12S, R20E, MDB&M.
2. The WWTF consists of a barscreen, 24,000-gallon flow equalization tank, 6,000-gallon sludge holding tank, 80,000-gallon aeration tank, 15,500-gallon secondary clarifier, and chlorine contact basin.
3. Waste Discharge Requirements (WDRs) Order No. 95-244 regulates the WWTF and its discharge of disinfected secondary effluent to 100 seepage pits (disposal area). The WWTF has a treatment and disposal capacity of 0.08 million gallons per day.
4. WDRs Order No. 95-244 states, in part, the following:

Discharge Specification B.3: Effluent shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
BOD ¹	mg/L	30	---	60
Total Suspended Solids	mg/L	30	---	60
Total Coliform	MPN/100 mL	---	2.2	23
Settleable Solids	ml/L	0.5		1.0

¹ 5-day 20°C biochemical oxygen demand

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Discharge Specification B.4: The CT value (chlorine residual times the contact time) shall equal or exceed 300 and chlorine contact time shall equal or exceed 90 minutes.

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Discharge Specification B.6: The EC [electrical conductivity at 25°C] of the discharge shall not exceed the average EC of the source water plus 500 µmhos/cm. Where multiple sources are used, the EC of the source water shall be determined as a flow-weighted average.

5. The WWTF was designed to treat and dispose of the hospital's wastewater on a temporary or interim basis until the completion of a planned regional WWTF in southeast Madera County. Completion of the regional WWTF is not expected to occur within the next four or five years.

6. The Discharger has a history of exceeding the EC discharge limit prescribed by Discharge Specification B.6.
7. The Discharger was issued a Notice of Violation (NOV) on 7 November 2001 for degrading groundwater with salinity. The NOV directed the Discharger to expand its groundwater monitoring well network.
8. Recent groundwater monitoring data (first quarter 2004) indicates groundwater influenced by the discharge contains elevated concentrations compared to background of nitrate, total dissolved solids (TDS), total trihalomethanes (THMs), and sodium, as shown below:

<u>Constituent</u>	<u>Units</u>	<u>Background Wells</u>		<u>Downgradient Wells</u>			
				<u>NW</u>	<u>NE</u>	<u>SW</u>	<u>SE</u>
Nitrate (as N)	mg/L	1.2	1.1	6.3	6.1	29.6	6.3
TDS	mg/L	268	166	560	540	546	530
THMs	µg/L	ND	ND	44	25	25	43
Sodium	mg/L	22	13	76	73	65	75

9. The Discharger adds 15,000 gallons per day of potable water from the hospital's groundwater supply well to wastewater undergoing treatment in the WWTF's chlorine contact basin to dilute the salinity of the treated wastewater to achieve compliance with Discharge Specification B.6. This practice consumes about 15 percent of the WWTF's treatment capacity. Without this dilution, the Discharger anticipates the WWTF will have sufficient existing capacity to accommodate hospital growth for the next five years.
10. The Discharger documented its plan to identify and implement salinity source control measures in a 5 August 2003 letter. These efforts included the elimination of water softeners and introduction of "waterless" hand cleaning. The Discharger subsequently performed a study of wastewater flow and EC in locations in the hospital's wastewater collection system and documented the study findings in a 21 May 2004 *Phase I Facility EC Source Investigation Report*. As part of its ongoing Phase II source investigation to identify sources of EC, the Discharger submitted on 12 November 2004 a list of products and corresponding product volumes that the hospital discharges to the WWTF.
11. On 5 August 2004, the Discharger submitted a Report of Waste Discharge (RWD) in support of a modification in wastewater treatment. The Discharger proposes to add denitrification to the WWTF treatment process and eliminate the use of chlorination for disinfection and replace it with ultraviolet (UV) disinfection. The RWD requested the Regional Board to (a) modify Discharge Specification B.6 to replace its existing EC limitation of 500 µmhos/cm over source water EC with a maximum EC limitation of 900 µmhos/cm and (b) establish a new discharge limitation for total nitrogen of 10 mg/L. The RWD summarizes the Discharger's efforts to control salinity to a level that reflects best practicable control. Regional Board letter dated 29 September 2004 determined the RWD complete.

12. The process of chlorination increases discharge EC by about 50 μ mhos/cm, according to the RWD, and creates THMs. The replacement of chlorination with UV disinfection will allow the Discharger to reduce discharge EC and eliminate the generation of THMs. Once the Discharger replaces chlorination with UV disinfection, Discharge Specification B.4 will not be necessary.
13. Section 13263(a) of the California Water Code, states:

The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge, except discharges into a community sewer system, with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.
14. Section 13267(b)(1) of the California Water Code, states, in part:

In conducting an investigation specified in [§ 13267] subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
15. The report required by this Order is necessary to assure compliance with this Order. The Discharger operates the WWTF that discharges the waste subject to this Order.
16. The action to modify Order No. 95-244 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.), in accordance with Title 14, California Code of Regulations, Section 15301.
17. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
18. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order No. 95-244 is modified as follows and that, pursuant to Sections 13263 and 13267 of the California Water Code, Children's Hospital Central California, its agents, successors, and assigns shall:

1. Comply with the terms and conditions of Waste Discharge Requirements Order No. 95-244, except Discharge Specifications B.3, B.4, and B.6, whose terms and conditions are modified as set forth in this Order.
2. **Effective immediately** upon Executive Officer written acceptance that Paragraph 4, below, is satisfied, Discharge Specification B.3 shall be superseded with the following:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
BOD ¹	mg/L	30	---	60
Total Suspended Solids	mg/L	30	---	60
Total Coliform	MPN/100 mL	---	2.2	23
Settleable Solids	ml/L	0.5	---	1.0
EC	µmhos/cm	900	---	---
<u>Total Nitrogen</u>	<u>mg/L</u>	<u>10</u>	<u>---</u>	<u>---</u>

¹ 5-day 20°C biochemical oxygen demand

3. **Upon Paragraph 2 becoming effective**, Discharge Specifications B.4 and B.6 are superseded in their entirety.
4. By **15 June 2005**, the Discharger shall submit a work plan and time schedule for installing a UV treatment system and denitrification system as described in the Discharger's RWD and capable of consistently meeting WDRs Discharge Specification B.3, as revised by Paragraph 2 of this Order. The work plan shall propose quartz sleeve cleaning frequencies that ensure the minimum required UV dose delivery is consistently met. **By 120 days** following Executive Officer written approval of the work plan, the Discharger shall install the approved UV treatment system and denitrification system. **By 30 days** following installation, the Discharger shall submit a written report prepared by a California registered civil engineer certifying whether the UV treatment system and denitrification system were installed as proposed and the WWTF is capable of complying with the WDRs, as revised by this Order.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 April 2005.

 THOMAS R. PINKOS, Executive Officer