

FACT SHEET

FACILITY DESCRIPTION

The Pauma Valley Community Services District (hereafter discharger) owns and operates the Pauma Valley Treatment Plant (PVTP). Under Waste Discharge Requirements (WDRs) Order No. R9-1993-0046, the plant discharges up to 0.115 million gallons per day (MGD) of secondary treated effluent to a series of three rapid infiltration ponds adjacent to the San Luis Rey River.

The PVTP at 33129 Cole Grade Road, serves 314 homes, a school, a golf center, and small commercial in unincorporated San Diego County. Current wastewater treatment operations and processes include extended aeration, sedimentation, chlorine disinfection, and percolation.

PROPOSED IMPROVEMENTS

On November 15, 2005, the Discharger submitted an initial Report of Waste Discharge to upgrade the PVTP and add capacity to accommodate future growth.¹ The Discharger proposes to discharge up to 0.150 MGD (an addition of 0.035 MGD) and replace the existing treatment units. A new packaged treatment plant will include flow equalization, aeration, anoxic zone, clarifiers, sludge holding tank, and disinfection.² To accommodate the increased flow, the existing percolation ponds will also be expanded. The Discharger evaluated the potential for surfacing of effluent and discharges into surface waters from the increased flow into the percolation ponds. Results from this evaluation indicated that ponds would have to be expanded, but the increased flow would not cause surfacing.³

DISCHARGE SPECIFICATIONS

The existing effluent limits in Order No. R9-1993-0046 are listed on Table I. The PVTP effluent monitoring data from 1998-2005⁴ illustrates variable TDS levels that have sometimes exceeded the current limit of 750 mg/L. The 12-month average maximum levels for TDS have been updated to reflect this historical monitoring data and are consistent with the groundwater water quality objectives (WQOs) of the Pauma Hydrographic Subarea (903.22) in the Water Quality Control Plan for the San Diego Region (Basin Plan).⁵ Since the monitoring data indicates that chloride and sulfate levels in the effluent have been near (but have not exceeded) limits, the Discharger has

¹ Kennedy/Jenks Consultants, 2005. Report of Waste Discharge for Pauma Valley Water Reclamation Plant,

² Kennedy/Jenks Consultants, 2006. Report of Waste Discharge for Pauma Valley Water Reclamation Plant, Page 4-2

³ Ibid. Appendix D

⁴ Ibid. Page 6-2.

⁵ SDRWQCB, 1994. Basin Plan. Table 3-3. Page 3-28.

requested that these limits be increased slightly.⁶ The limits requested by the Discharger are well below the groundwater WQOs and have been incorporated in the updated WDRs. The updated WDRs include a total nitrogen limit of 10 mg/l that meets USEPA's primary drinking water standard. The Discharger indicates that the technology of the upgraded packaged treatment system can meet the total nitrogen limit of 10 mg/L in the effluent.⁷ The discharge of effluent at the proposed limits will be protective of beneficial uses/water quality objectives due to the assimilative capacity of soil and groundwater below the percolation ponds. Table II lists both the updated effluent limits and groundwater WQOs.

TABLE I Existing Effluent Limits

Constituent	Unit	12-Month Average ¹	30-Day Average ²	Daily Maximum ³
BOD ₅ @ 20° C	mg/L		30	45
TSS	mg/L		30	45
TDS	mg/L	750		850
Chloride	mg/L	150		200
Sulfate	mg/L	250		300
Nitrate as NO ₃	mg/L	60		
Fluoride	mg/l	1.0		1.5

1 The 12-month average effluent limitation shall apply to the arithmetic mean of the results of all samples collected during any 12 consecutive calendar month period.

2 The 30-day average effluent limitation shall apply to the arithmetic mean of the results of all samples collected during any calendar month.

3 The daily maximum effluent limitation shall apply to the results of a single composite or grab sample.

**TABLE II
Updated Discharge Specifications & Basin Plan WQOs**

Constituent	Unit	12- Month Average ¹	30-Day Average ²	Daily Maximum ³	Basin Plan Groundwater WQOs ⁴
BOD ₅ @ 20° C	mg/L		30	45	NA
TSS	mg/L		30	45	NA
TDS	mg/L	800			800
Chloride	mg/L	200			300
Sulfate	mg/L	300			400
Total Nitrogen as N	mg/L	10			10 ⁵
Fluoride	mg/L	1.0			1.0

4 Concentrations not to be exceeded more than 10% of the time during any one year period. The recommended plan would allow for measurable degradation of ground water in this basin to permit continued agricultural land use. Point sources, however, would be controlled to achieve effluent quality

⁶ Kennedy/Jenks Consultants, 2006. Report of Waste Discharge for Pauma Valley Water Reclamation Plant, Page 5-1.

⁷ Meeting With Regional Board Staff & Discharger, May 3, 2006.

corresponding to the tabulated numerical values. In future years, demineralization may be used to treat ground water to the desired quality prior to use.
5 The Basin Plan limit is listed as nitrate as NO₃.

GROUNDWATER MONITORING & HYDROGEOLOGY

In 1995, the Department of Health Services recommended that the Discharger begin quarterly groundwater monitoring from wells that were installed around the percolation ponds. Addendum No. 1 to Order No. R9-1993-0046 was adopted on February 9, 1995 to require the Discharger to monitor these five wells quarterly for total nitrogen, TDS, and total organic carbon. On May 12, 1999, Addendum No. 2 to Order No. R9-1993-0046 was adopted and required expanded groundwater monitoring for all forms of nitrogen. Groundwater monitoring data since 1998 indicate that TDS and nitrate levels have fluctuated greatly in the monitoring wells near the ponds. However, the TDS and nitrate levels in area supply wells have more consistent.⁸ Due to these discrepancies and at the request of the Regional Board staff, the Discharger evaluated the hydrogeology of the area.⁹ Results of this evaluation indicate that there is a shallow and deeper zone of groundwater under the ponds. The pond monitoring wells are in the shallow zone (approximately 45 feet below ground surface) and are influenced by rainfall, surface water infiltration and pond infiltration. The Discharger proposes to use three wells (MW-1, 3, & 7) to monitor the impact on water quality from the percolation ponds.¹⁰ The monitoring wells will provide an additional tool to assess and verify that discharges to the ponds are not impacting groundwater quality. Should monitoring show impacts are occurring, the Regional Board could require further investigation/corrective action.

CHANGES TO MONITORING & REPORTING

Order No. R9-1993-0046 requires the Discharger to monitor influent, effluent, and groundwater. Since 1999, the Discharger has monitored nitrogen levels of the plant influent to identify what forms were being introduced into the wastewater. Seven years of data verify that ammonia-nitrogen is the main form of nitrogen coming into PVTP. This form of nitrogen is what is expected in the wastewater and the influent monitoring has been removed from updated WDRs.

Nitrate is the only form of nitrogen that has been monitored in the effluent as required by Order No. R9-1993-0046. Ammonia nitrogen, nitrite, total Kjeldahl nitrogen, total nitrogen has been added to the effluent monitoring requirements to be consistent with the forms of nitrogen in the existing groundwater monitoring requirements. Consistent nitrogen monitoring constituents for both effluent and groundwater will help in the assessment of potential impacts of the discharge to percolation ponds on groundwater quality.

⁸ Kennedy/Jenks Consultants, 2006. Report of Waste Discharge for Pauma Valley Water Reclamation Plant. Sections 2 & 6.

⁹ Ibid. Appendix C.

¹⁰ Ibid. Appendix C. Page 4.