

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ADMINISTRATIVE CIVIL LIABILITY COMPLAINT R5-2008-0626

ADMINISTRATIVE CIVIL LIABILITY  
AND MANDATORY PENALTY  
IN THE MATTER OF

DONNER SUMMIT PUBLIC UTILITY DISTRICT  
WASTEWATER TREATMENT PLANT  
NEVADA COUNTY

This Complaint is issued to the Donner Summit Public Utility District (hereafter Discharger) pursuant to California Water Code (CWC) section 13385, which authorizes the imposition of Administrative Civil Liability (ACL), CWC section 13323, which authorizes the Executive Officer to issue this Complaint, and CWC section 7, which authorizes the delegation of the Executive Officer's authority to a deputy, in this case the Assistant Executive Officer. This Complaint is based on findings that the Discharger violated provisions of Waste Discharge Requirements (WDRs) Order R5-2002-0088 (NPDES No. CA0081621).

The Assistant Executive Officer of the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board or Board) finds the following:

1. The Discharger owns and operates a wastewater collection, treatment, and disposal system (WWTP), and provides sewerage service to the Norden and Soda Springs areas, the Sugar Bowl and Soda Springs Ski Resorts, the Serene Lakes Subdivision, and the Sierra Lakes County Water District. During the months of October through July, treated wastewater is discharged to the South Yuba River, a water of the United States.
2. On 6 June 2002, the Central Valley Water Board issued WDRs Order R5-2002-0088 (NPDES permit) to regulate discharges of waste from the WWTP.
3. On 6 June 2002, the Central Valley Water Board issued Cease and Desist Order (CDO) R5-2002-0089. CDO R5-2002-0089 required the Discharger to comply with the effluent limitations for ammonia and nitrate in the NPDES permit by 1 April 2007.

**Mandatory Penalties**

4. On 15 November 2007, the Executive Officer issued ACL Order R5-2007-0528 for mandatory penalties for effluent limitation violations from 1 January 2000 to 31 December 2006, in the amount of \$204,000. ACL Order R5-2007-0528 recognized that the Discharger was a small community with a financial hardship, and allowed the entire penalty to be spent on the completion of a compliance project to prevent further effluent limitation violations. The Central Valley Water Board considers this prior matter resolved.

5. On 21 July 2008, the Central Valley Water Board sent the Discharger a draft Record of Violations (ROV). On 15 September 2008, the Discharger agreed with the draft ROV. Central Valley Water Board staff has since reviewed the draft ROV and has prepared a technical memorandum, which revises the number of violations, and extends the record through 30 September 2008. This memorandum is included as Attachment B and discussed in Finding 11 of this Complaint.

6. CWC section 13385(h)(1) states:

Notwithstanding any other provision of this division, and except as provided in subdivisions (j), (k), and (l), a mandatory minimum penalty of three thousand dollars (\$3,000) shall be assessed for each serious violation.

7. CWC section 13385 (h)(2) states:

For the purposes of this section, a "serious violation" means any waste discharge that violates the effluent limitations contained in the applicable waste discharge requirements for a Group II pollutant, as specified in Appendix A to Section 123.45 of Title 40 of the Code of Federal Regulations, by 20 percent or more or for a Group I pollutant, as specified in Appendix A to Section 123.45 of Title 40 of the Code of Federal Regulations, by 40 percent or more.

8. CWC section 13385(i)(1) states, in relevant part:

Notwithstanding any other provision of this division, and except as provided in subdivisions (j), (k), and (l), a mandatory minimum penalty of three thousand dollars (\$3,000) shall be assessed for each violation whenever the person does any of the following four or more times in any period of six consecutive months, except that the requirement to assess the mandatory minimum penalty shall not be applicable to the first three violations:

(A) Violates a waste discharge requirement effluent limitation.

9. CWC section 13323 states, in part:

Any executive officer of a regional board may issue a complaint to any person on whom administrative civil liability may be imposed pursuant to this article. The complaint shall allege the act or failure to act that constitutes a violation of law, the provision authorizing civil liability to be imposed pursuant to this article, and the proposed civil liability.

10. WDRs Order R5-2002-0088 Effluent Limitations No. B.1., include, in part, the following effluent limitations:

Constituents	Units	Monthly Average	Weekly Average	7-Day Median <sup>6</sup>	Daily Maximum	1-Hour Average
Ammonia <sup>5</sup>	mg/L	C	—	—	—	D
Nitrate (N)	mg/L	10	15	—	30	—
	lbs/day <sup>3</sup>	43	—	—	—	—

<sup>3</sup> Based upon a design treatment capacity of 0.52 mgd ( $x \text{ mg/L} \times 8.345 \times 0.52 \text{ mgd} = y \text{ lbs/day}$ ).

<sup>5</sup> Attachments C and D, based on ambient criteria are attachments to the permit.

11. As described in the technical memorandum mentioned in Finding No. 5, the Central Valley Water Board makes the following adjustments to the draft ROV (all violation numbers reference those contained in the draft Notice of Violation):
  - Violation 1, Total Coliform Organisms. This was incorrectly listed as a violation. The violation was deleted. However, this did not affect the mandatory minimum penalty because the violation was an exempt violation.
  - New Nitrate-Nitrogen Violation. This violation occurred for June 2008. This violation was added to extend the period of the ROV through 30 September 2008. This violation is subject to mandatory minimum penalties; addition of this violation added \$3,000 to the sum of the minimum penalties.
12. According to the Discharger's self-monitoring reports, the Discharger committed seven (7) serious Group I violations of the above effluent limitations contained in WDRs Order R5-2002-0088 during the period beginning 1 January 2007 and ending 30 September 2008. The violations are defined as serious because measured concentrations of Group I constituents exceeded maximum prescribed levels by more than 40 percent on these occasions. The mandatory minimum penalty for these serious violations is **twenty-one thousand dollars (\$21,000)**.
13. According to the Discharger's self-monitoring reports, the Discharger committed one (1) non-serious violation of the above effluent limitations contained in Order R5-2002-0088 during the period beginning 1 January 2007 and ending 30 September 2008. The one (1) non-serious violation is subject to mandatory penalties under CWC section 13385(i)(1) because this violation was preceded by three or more violations within a six-month period. The mandatory minimum penalty for this non-serious violation is **three thousand dollars (\$3,000)**.
14. The total amount of the mandatory penalties assessed for the cited effluent violations is **twenty-four thousand dollars (\$24,000)**. A detailed list of the cited effluent violations is included in Attachment A, a part of this Complaint.

15. The Central Valley Water Board, pursuant to CWC section 13385(k)(2), relies upon the State Water Board's determination as to whether the Discharger's WWTP serves a population with a financial hardship. On 10 September 2008, the Executive Director of the State Water Board confirmed an earlier determination by State Water Board staff that the WWTP is a publicly owned treatment works serving a small community within the meaning of CWC section 13385(k)(2).

### **Discretionary Penalty**

16. CDO R5-2002-0089 Item 2 gave the Discharger a time schedule to comply with the effluent limitations for ammonia and nitrate contained in WDRs Order R5-2002-0088. The Discharger was required to comply with the limitations by 1 April 2007. The Discharger upgraded its WWTP in order to comply with the new limitations; however, the facility has experienced difficulty denitrifying nitrate to nitrogen, and continues to violate the effluent limitations for nitrate, as shown in Attachment A.
17. WDRs Order R5-2002-0088 Receiving Water Limitations G. state, in part:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the receiving water:

5. Fungi, slimes, or other objectionable objects.

On 30 June 2008, Central Valley Water Board staff investigated a citizen complaint regarding algae growth and bio-stimulation in the headwaters of the South Yuba River. Staff found that the treated effluent from the Donner Summit WWTP added nitrate, organic nitrogen, phosphorous, and orthophosphate to the South Yuba River. These nutrients are known to promote algae growth. Staff found significant algae growth below the effluent discharge point, in violation of Receiving Water Limitation No. G.5.

18. On 8 August 2008, Central Valley Water Board staff issued a Notice of Violation (NOV) to the Discharger. The NOV cited the violations in Findings 16 and 17, and required the Discharger to respond to the violations by 8 September 2008. The inspection report and NOV are found as Attachment C to this Complaint.
19. The Discharger responded to the NOV in a letter dated 4 September 2008 (Attachment D to this Complaint). The Discharger did not provide information to refute the status of violations described in the inspection report. The Discharger's consultant made the following finding in a report dated 11 July 2008, based on an investigation conducted on 2 July 2008:

Based on the field observations, it is a reasonable conclusion that the DSPUD effluent discharge was at least a major contributing factor to a reportedly rare, highly unusual, transient growth of filamentous green algae in the South Yuba River in June 2008 in the reach from the DSPUD effluent discharge point, downstream through the Towle Mountain Estates area, but not as far downstream as Kingvale. The filamentous biofilm tracks fairly well to the effluent discharge point,... (page 5).

20. Central Valley Water Board staff are unable to verify if the algae growth has occurred previously or if it was unique to the year 2006. The report submitted for June 2008 only stated:

Regional Board representatives on site on 6/30/08. Samples were taken at R-1 and R-2. Regional Board staff had comments regarding what they believed to be excessive algae growth at R-2.

Central Valley Water Board staff believe that, since the WWTP is not capable of removing nitrate from the effluent to meet the final effluent limitations, algae growth and bio-stimulation are likely to have occurred in the past. If this did happen, the Discharger failed to take note and report this condition in its monthly reports.

21. WDRs Order R5-2002-0088 Discharge Prohibitions A.3 states:

Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

22. In June and July 2008, Central Valley Water Board staff received complaints from several residents of the area. The complaints were in regard to the eutrophication in the South Yuba River downstream of the WWTP effluent discharge point. The citizen reaction supports that the incident caused a condition of nuisance in the receiving water.

### **Calculation of Discretionary Penalty**

23. CWC Section 13385(a) states, in part:

Any person who violates any of the following shall be liable civilly in accordance with this section:

(1) Section 13375 or 13376.

(2) Any waste discharge requirements...issued pursuant to this chapter....

(5) Any requirements of Section 301, 302, 306, 307,308, 318, 401, or 405 of the Clean Water Act, as amended”.

24. CWC Section 13385(c) states:

Civil liability may be imposed administratively by the state board or a regional board pursuant to Article 2.5 (commencing with Section 13323) of Chapter 5 in an amount not to exceed the sum of both of the following:

- (1) Ten thousand dollars (\$10,000) for each day in which the violation occurs.
- (2) Where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1,000 gallons, an additional liability not to exceed ten dollars (\$10) multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons.

25. CWC Section 13385(e) states:

In determining the amount of any liability imposed under this section, the regional board, the state board, or the superior court, as the case may be, shall take into account the nature, circumstances, extent, and gravity of the violation or violations, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on its ability to continue its business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters that justice may require. At a minimum, liability shall be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation.

26. The violations of Effluent Limitations B.1. for ammonia and nitrate are subject to mandatory minimum penalties pursuant to CWC section 13385(h) and (i). However, due to the severity of these violations, and the related receiving water violations, an additional penalty has been imposed in the amount of **twenty-five thousand dollars (\$25,000)**. This discretionary penalty considers the State Water Board's Water Quality Enforcement Policy and the factors in CWC section 13385(e).

27. Pursuant to CWC section 13385(c), the maximum liability amount is calculated as \$10,000 per violation per day, plus an additional \$10 for each gallon released to surface waters in excess of 1,000 gallons for each day of violation. Below is a table calculating the daily violations at the facility.

Month	Violation	# of Days in Month Violations Occurred	Penalty, at \$10,000 per day
Jun 2007	Nitrate-N	30	\$300,000
Jul 2007	Nitrate-N	31	\$310,000
Oct 2007	Nitrate-N	31	\$310,000
Nov 2007	Nitrate-N	30	\$300,000
Dec 2007	Ammonia-N	1	\$10,000
Dec 2007	Nitrate-N	31	\$310,000
Jun 2008	Nitrate-N	30	\$300,000
		Total:	\$1,840,000

During the time period in which the violations occurred, the facility discharged an average of 173,098 gallons per day. Therefore, the maximum penalty is  $(((173,098 \text{ gallons per day} \times 183 \text{ days of violation}) - 183,000) \times \$10) + \$1,840,000 = \mathbf{\$316,780,000}$ .

28. Pursuant to CWC section 13385(e), administrative civil liability at minimum must be equivalent to the economic benefit that the Discharger derived from the acts that constituted the violation. The Discharger's facility does not perform well enough to comply with the nitrate effluent limitations and therefore the Discharger has gained an economic benefit by delaying implementing an engineering solution. The economic benefit is considered to be the deferred cost of implementing the project; more specifically, the delay in paying the interest on a loan to complete the work. While the cost to complete additional upgrades to comply with the nitrate effluent limit is unknown, staff have determined that the delayed cost for a \$500,000 State Revolving Fund loan over the period of noncompliance would be approximately \$21,000. This is estimated to be the economic benefit, and therefore, the discretionary penalty is below the economic benefit.
29. Issuance of this ACL Complaint to enforce CWC Division 7, Chapter 5.5 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

**THE DONNER SUMMIT PUD WASTEWATER TREATMENT PLANT IS HEREBY GIVEN NOTICE THAT:**

1. The Assistant Executive Officer of the Central Valley Water Board proposes that the Discharger be assessed an Administrative Civil Liability and Mandatory Penalty in the amount of **forty-nine thousand dollars (\$49,000)**, which includes **twenty-four thousand dollars (\$24,000)** in mandatory penalties and **twenty-five thousand dollars (\$25,000)** in discretionary penalties assessed under CWC section 13385(c). The amount of the proposed liability other than the mandatory penalty portion is based upon a review of the factors cited in CWC section 13385 and the State Water Board's Water Quality Enforcement Policy.
2. A hearing on this matter will be held at the Central Valley Water Board meeting scheduled on **5/6 February 2009**, unless the Discharger does either of the following by **30 December 2008**:
  - a. Waives the hearing by completing the attached form (checking the box next to item #4) and returning it to the Central Valley Water Board, along with payment for the proposed civil liability of **forty-nine thousand dollars (\$49,000)**; or

- b. Agrees to enter into settlement discussions with the Central Valley Water Board and requests that any hearing on the matter be delayed by signing the enclosed waiver (checking the box next to item #5) and returning it to the Central Valley Water Board along with a letter describing the issues to be discussed.
3. If a hearing on this matter is held, the Central Valley Water Board will consider whether to affirm, reject, or modify the proposed Administrative Civil Liability, or whether to refer the matter to the Attorney General for recovery of judicial civil liability.

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JACK E. DEL CONTE, Assistant Executive Officer

26 November 2008

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Date

Attachment A: Record of Violations  
Attachment B: Technical Memorandum  
Attachment C: Report of Inspection of 30 June 2008  
Attachment D: Response to Notice of Violation

**WAIVER OF 90-DAY HEARING REQUIREMENT FOR  
ADMINISTRATIVE CIVIL LIABILITY COMPLAINT**

By signing this waiver, I affirm and acknowledge the following:

1. I am duly authorized to represent Donner Summit Public Utility District Wastewater Treatment Plant (hereinafter "Discharger") in connection with Administrative Civil Liability Complaint R5-2008-0626 (hereinafter the "Complaint");
2. I am informed that California Water Code section 13323, subdivision (b), states that, "a hearing before the regional board shall be conducted within 90 days after the party has been served" with the Complaint;
3. I hereby waive any right the Discharger may have to a hearing before the Central Valley Regional Water Quality Control Board (Central Valley Water Board) within ninety (90) days of service of the Complaint; and
4.  (Check here if the Discharger will waive the hearing requirement and will pay the fine)
  - a. I certify that the Discharger will remit payment for the proposed civil liability in the amount of **forty-nine thousand dollars (\$49,000)** by check, which will contain a reference to "ACL Complaint R5-2008-0626" and will be made payable to the "State Water Pollution Cleanup and Abatement Account." Payment must be received by the Central Valley Water Board by **30 December 2008** or this matter will be placed on the Central Valley Water Board's agenda for adoption at the **5/6 February 2009** Central Valley Water Board meeting.
  - b. I understand the payment of the above amount constitutes a settlement of the Complaint, and that any settlement will not become final until after the 30-day public notice and comment period mandated by Federal regulations (40 CFR 123.27) expires. Should the Central Valley Water Board receive new information or comments during this comment period, the Central Valley Water Board's Assistant Executive Officer may withdraw the complaint, return payment, and issue a new complaint. New information or comments include those submitted by personnel of the Central Valley Water Board who are not associated with the enforcement team's issuance of the Complaint.
  - c. I understand that payment of the above amount is not a substitute for compliance with applicable laws and that continuing violations of the type alleged in the Complaint may subject the Discharger to further enforcement, including additional civil liability.

-or-

5.  (**Check here if the Discharger will waive the 90-day hearing requirement, but will not pay at the current time**) **The Central Valley Water Board must receive information from the Discharger indicating a controversy regarding the assessed penalty at the time this waiver is submitted, or the waiver may not be accepted**) I certify that the Discharger will promptly engage the Central Valley Water Board staff in discussions to resolve the outstanding violation(s). By checking this box, the Discharger is not waiving its right to a hearing on this matter. By checking this box, the Discharger requests that the Central Valley Water Board delay the hearing so that the Discharger and Central Valley Water Board staff can discuss settlement. It remains within the discretion of the Central Valley Water Board to agree to delay the hearing. A hearing on the matter may be held before the Central Valley Water Board if these discussions do not resolve the liability proposed in the Complaint. The Discharger agrees that this hearing may be held after the 90-day period referenced in California Water Code section 13323 has elapsed.
6. If a hearing on this matter is held, the Central Valley Water Board will consider whether to issue, reject, or modify the proposed Administrative Civil Liability Order, or whether to refer the matter to the Attorney General for recovery of judicial civil liability. Modification of the proposed Administrative Civil Liability Order may include increasing the dollar amount of the assessed civil liability.

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(Print Name and Title)

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(Signature)

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(Date)

**ATTACHMENT A  
ADMINISTRATIVE CIVIL LIABILITY COMPLAINT R5-2008-0626**

Donner Summit PUD  
Wastewater Treatment Plant

**RECORD OF VIOLATIONS (1 January 2007 – 30 September 2008) MANDATORY PENALTIES  
(Data reported under Monitoring and Reporting Program R5-2002-0088)**

#	Date	Violation Type	Units	Limit	Measured	Period Type	Flow Rate*	Remarks
1	30 Jun 2007	Nitrate-N	mg/L	10.0	17.4	Monthly	0.178	1
2	31 Jul 2007	Nitrate-N	mg/L	10.0	20.9	Monthly	0.164	1
3	31 Oct 2007	Nitrate-N	mg/L	10.0	41.0	Monthly	0.114	1
4	30 Nov 2007	Nitrate-N	mg/L	10.0	24.7	Monthly	0.138	1
5	27 Dec 2007	Ammonia-N	mg/L	6.8	10.2	1-Hour	0.277	1
6	31 Dec 2007	Nitrate-N	mg/L	10.0	34.0	Monthly	0.229	1
7	31 Dec 2007	Nitrate-N	lbs/day	43.0	53.9	Monthly	0.229	4
8	30 Jun 2008	Nitrate-N	mg/L	10.0	18.8	Monthly	0.216	1

Remarks:

1. Serious Violation: For Group I pollutants that exceed the effluent limitation by 40 percent or more.
2. Serious Violation: For Group II pollutants that exceed the effluent limitation by 20 percent or more.
3. Non-serious violations falls within the first three violations in a six-month period, thus is exempt.
4. Non-serious violation subject to mandatory penalties.

<b><u>VIOLATIONS AS OF:</u></b>	<b><u>09/30/2008</u></b>
Group I Serious Violations:	7
Group II Serious Violations:	0
Non-Serious Exempt from MPs:	0
Non-serious Violations Subject to MPs:	1
<b><u>TOTAL VIOLATIONS SUBJECT TO MPS:</u></b>	<b><u>8</u></b>

**Mandatory Minimum Penalty = (7 Serious Violations + 1 Non-Serious Violation) × \$3,000 = \$24,000**



Linda S. Adams  
Secretary for  
Environmental  
Protection

# California Regional Water Quality Control Board

## Central Valley Region

Karl E. Longley, Sc, P.E., Chair

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114

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Arnold  
Schwarzenegger  
Governor

### Attachment B

**TO:** Patricia Leary, Senior Engineer  
NPDES Compliance and  
Enforcement

**FROM:** Barry Hilton, WRCE  
NPDES Compliance and  
Enforcement

**DATE:** 12 September 2008

### ***SUBJECT: DONNER SUMMIT PUD WASTEWATER TREATMENT PLANT ASSESSMENT OF MMPS***

On 21 July 2008, the Central Valley Water Board staff sent the Donner Summit PUD a draft Record of Violations (ROV) for the period of 1 January 2007 through 30 April 2008. On 12 September 2008, I called the Manager, Thomas Skjelstad. He stated that he had reviewed the ROV and agreed with the violations. I told him that we planned to extend the ACLC through 30 June 2008 and to include the June 2008 violation. He agreed with the June 2008 nitrate violation. The following discusses the changes I made to the ROV during my preparation of the Administrative Civil Liability Complaint.

#### **Total Coliform Organisms**

Violation 1. The draft ROV showed a total coliform daily violation of 140 MPN/100 mL for January 2007. Effluent limitations B.1, footnote 6, states, in part, "*The total coliform organisms concentration shall not exceed 23 MPN/100 mL more than once in any 30-day period. No sample shall exceed a concentration of 240 MPN/100 mL.*" The 24 January 2007 sample result of 140 MPN/100 mL was less than 240 MPN/100 mL and was the only sample to exceed 23 MPN/100 mL during the month. I deleted the violation.

New Violation 8. The June 2008 nitrate-nitrogen monthly average of 19 mg/L exceeded the effluent limitation of 10 mg/L. This violation occurred after the 30 April 2008 period in the draft ROV. This brings the violations current through 30 June 2008. Mr. Skjelstad verbally agreed with my adding this to the Complaint. I added the violation.

#### **Wet Weather Violations**

I removed all references to wet weather flows because there were no wet weather flow violations.

#### **Summary**

Remarks 1 (Group 1) serious violations subject to MMPs were 6 and now are 7.

Remarks 2 (Group 2) serious violations subject to MMPs were 0 and still are 0.

Remarks 3 non-serious violations not subject to MMPs were 1 and now are 0.

Remarks 4 non-serious violations subject to MMPs were 1 and still are 1.

The number of violations subject to MMPs were 7 and now are 8.

The ACLC amount was \$21,000 and now is \$24,000.

**Donner Summit PUD**  
**Wastewater Treatment Plant**  
 RECORD OF VIOLATIONS (1 January 2007 – 30 June 2008) MANDATORY PENALTIES  
 (Data reported under Monitoring and Reporting Program R5-2002-0088)

<u>Date</u>	<u>Violation Type</u>	<u>Units</u>	<u>Limit</u>	<u>Measure</u>	<u>Period Type</u>	<u>Flow Rate</u>	<u>Remarks</u>
<del>4</del> <del>24-Jan-07</del>	<del>Coliform</del> Nitrate	<del>MPN/100m</del> L	<del>23</del>	<del>440</del>	<del>Daily</del>		<del>3</del>
<del>12</del> 30-Jun-07	(N) Nitrate	mg/L	10	17	Monthly		1
<del>23</del> 30-Jul-07	(N) Nitrate	mg/L	10	21	Monthly		1
<del>34</del> 31-Oct-07	(N) Nitrate	mg/L	10	41	Monthly		1
<del>45</del> 30-Nov-07	(N) Nitrate	mg/L	10	25	Monthly		1
<del>56</del> 27-Dec-07	Ammonia	mg/L	6.77	10.2	1-Hour		1
<del>67</del> 31-Dec-07	(N) Nitrate	mg/L	10	34	Monthly		1
<del>78</del> 31-Dec-07	(N) Nitrate	lbs/day	43	54	Monthly	<del>0.25</del>	4
<u>8</u> <u>30-Jun-08</u>	(N) Nitrate	mg/L	<u>10</u>	<u>19.0</u>	<u>Monthly</u>		<u>1</u>

Remarks:

1. Serious Violation: For Group I pollutants that exceed the effluent limitation by 40 percent or more.
2. Serious Violation: For Group II pollutants that exceed the effluent limitation by 20 percent or more.
3. Non-serious violations falls within the first three violations in a six-month period, thus is exempt.
4. Non-serious violation subject to mandatory penalties.
- ~~5. Mass rate limitation exceedances due only to wet weather not assessed MMPs pursuant to State Water Board Order WQO 2004 0013.~~

<b>VIOLATIONS AS OF:</b>	<b><u>64/30/2008</u></b>
Group I Serious Violations:	<u>76</u>
Group II Serious Violations:	<u>0</u>
Non-Serious Exempt from MPs:	<u>04</u>
Non-serious Violations Subject to MPs:	<u>1</u>
Total Violations Subject to MPs:	<u>87</u>

Mandatory Minimum Penalty = (76 Serious Violations + 1 Non-Serious Violation) × \$3,000 = \$244,000

~~\* Arithmetic mean of all 1-day flow rates (in MGD) while discharging to surface waters during limitation period. Values greater than the design dry weather flow rate (0.52 mgd) are considered wet weather for purposes of applying SWRCB Order WQO 2004 0013~~

Administrative Civil Liability Complaint R5-2008-0626  
California Regional Water Quality Control Board  
Central Valley Region

Karl E. Longley, Sc, P.E., Chair



Linda S. Adams  
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Arnold  
Schwarzenegger  
Governor

8 August 2008

Thomas Skjelstad, General Manager  
Donner Summit Public Utilities District  
PO Box 610  
53823 Sherritt Ln  
Soda Springs, CA 95728

**NOTICE OF VIOLATION, DONNER SUMMIT PUBLIC UTILITIES DISTRICT, NEVADA COUNTY**

The Regional Water Board regulates the Donner Summit Public Utility District (PUD) under Waste Discharge Requirements Order No. R5-2002-0088 (NPDES No. CA0081621), which includes effluent limitations and other requirements regarding the treated wastewater discharged to the South Yuba River. On 30 June 2008, Regional Water Board staff responded to a complaint regarding algae growth by inspecting the Donner Summit PUD Wastewater Treatment Plant (WWTP) and the South Yuba River upstream and downstream of the discharge point. A copy of the inspection report is enclosed. The report makes the following findings:

1. Waste Discharge Requirements Order No. R5-2002-0088 Receiving Water Limitation G.5 states:

*“Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the receiving water:”*

*“5. Fungi, slimes, or other objectionable objects.”*

The treated effluent adds nitrate, organic nitrogen, phosphorous, and orthophosphate to the South Yuba River. These nutrients are known to promote algae growth. There was algae growth below the effluent discharge point that appeared to be caused by the discharge, in violation of Receiving Water Limitation No. G.5.

2. Waste Discharge Requirements Order No. R5-2002-0088 Standard Provision General Provisions No. A.6 states:

*“The Discharger shall at all times properly operate and maintain all facilities, and systems of treatment and control including sludge use and disposal facilities (and related appurtenances) that are installed or used to achieve compliance with this Order.*

*Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.”*

Algae growth in the secondary clarifiers is an indication that the facility may be having operational problems.

3. The WWTP is effectively nitrifying ammonia to nitrate as evidenced by the laboratory analyses, which did not detect ammonia or nitrite in the effluent sample. However, the WWTP appears to have difficulty denitrifying nitrate to nitrogen, as shown in the laboratory analysis, which detected nitrate in the effluent sample at a concentration above the monthly average limitation. Donner Summit violated the nitrate monthly average effluent limitation for June 2008.

On 2 July 2008, [ECO:LOGIC Engineering, Inc.](#), consultant for Donner Summit PUD, surveyed biostimulation in the South Yuba River at and about the effluent discharge point. ECO:LOGIC submitted their findings to the Regional Water Board in a report dated 11 July 2008. ECO:LOGIC found a correlation between the locations of algae and the effluent discharge point among other conclusions:

*“Based on the field observations, it is a reasonable conclusion that the DSPUD effluent discharge was at least a major contributing factor to a reportedly rare, highly unusual, transient growth of filamentous green algae in the South Yuba River in June 2008 in the reach from the DSPUD effluent discharge point, downstream through the Towle Mountain Estates area, but not as far downstream as Kingvale. The filamentous biofilm tracks fairly well to the effluent discharge point,”* (page 5).

By **8 September 2008**, please provide a technical report to address the following issues:

1. The inability of the WWTP to denitrify and to remove nitrate from the discharge. The WWTP cannot consistently meet its effluent limitation for nitrate, as evidenced by historical nitrate effluent concentrations. Please provide plans and a time schedule for reducing nitrate concentrations in effluent to comply with effluent limitations and to prevent further violations of receiving water limitations.
2. The condition of the clarifiers, and the concerns raised about filter operations support that the WWTP is encountering operational problems. Please provide a detailed explanation of the problems, and the measures being taken to improve operations at the facility.

Regional Water Board staff will evaluate whether additional enforcement for the problems described above is appropriate upon review of the technical report.

If you have questions regarding the inspection, please contact Spencer Joplin at (916) 464-4660.

PATRICIA LEARY  
Senior Engineer  
NPDES Compliance and Enforcement Unit

Enclosure: Inspection Report

cc: Robert Emerick, ECO:LOGIC Engineering, Inc., Rocklin  
Robert Coats, Hydroikos Ltd, Berkley  
Tom Hendrey, Whitley, Burchett, and Associates, Walnut Creek  
Bill Oudegeest, Serene Lakes Homeowners' Association, Modesto  
Jason Rainey, South Yuba River Citizen League, Nevada City  
Peter Van Zant, Sierra Watch, Nevada City  
John Eaton, Truckee  
Kathryn Gray, Palo Alto  
Frank and Sue Grigsby, Soda Springs  
Susan Snider, Nevada City  
Linda Waddle, Auburn

cc by email: Vance Anderson  
Anthony Bachman  
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Orville and Letty Erringer  
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Timothy Geiser  
Robert Humphreys  
H Jones  
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Kevin  
Warren Kocmond  
Scott and Debbie Lucas  
Todd McDole  
Shannon McDole  
Larry and Carla Nordstrom  
Laura Pregent  
Lee Price  
Dennis and Cherie Shimek  
Ambrose Tuscano

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CIWQS Regulation 349775  
CIWQS Violation 777093  
CIWQS Violation 778681

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

INSPECTION REPORT

8 August 2008

**Discharger:** Donner Summit Public Utility District  
PO Box 610  
Soda Springs, CA 95728

**Facility:** Wastewater Treatment Plant  
53823 Sherritt Ln  
Soda Springs, CA 95728  
Nevada County

**Contact:** Thomas Skjelstad, General Manager, 530-426-3456.  
Jim King, Chief Plant Operator (not present during inspection)

**Inspection Date:** 30 June 2008 09:40 hours to 13:00 hours,  
announced 25 June 2008

**Lead Inspector:** Spencer Joplin, Water Resource Control Engineer, Regional Water Board

**Other Inspectors:** Patricia Leary, Senior WRC Engineer, Regional Water Board  
Leticia Valadez, Staff Chemist, Regional Water Board

**NPDES No.:** CA0081621

**Adopted Orders:** Waste Discharge Requirements (WDRs) No. R5-2002-0088 (NPDES No. CA0081621)  
Cease and Desist Order No. R5-2002-0089

**Weather:** Cool temperature, calm wind, sunny, no precipitation within past day

### Background

The Donner Summit Public Utility District (PUD) operates a wastewater treatment plant (WWTP), which provides sewerage service to the communities of Norden, Soda Springs, and Serene Lakes, the Donner Ski Ranch, Boreal, Sugar Bowl and Soda Springs Ski Areas, and two rest stops along Interstate 80. Donner Summit PUD owns the collection systems with the exception of the Serene Lakes community.

Discharges from the WWTP are subject to the adopted orders listed above. The Cease and Desist Order provided Donner Summit PUD a time schedule to comply with ammonia and nitrate effluent limitations in the NPDES permit by 1 April 2007. The NPDES permit is in the process of being renewed, but has not yet been released for public comment.

Major components of the WWTP are a flow equalization tank, headworks for grit removal and screening, two parallel package secondary treatment plants including aeration tanks and clarifiers, sand filters, and a plug flow tank with gaseous chlorination and sulfur dioxide dechlorination. Effluent is used for spray irrigation on the Soda Springs Ski Area when the snow has melted and the soil is dry enough to irrigate without runoff. Effluent is discharged to the South Yuba River when land discharge is not possible. A 1.56 million gallon storage tank is used to store effluent when precipitation interrupts land discharge, and to divert effluent in

Approved:		
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emergencies.

Regional Water Board staff received a complaint of excessive algae growth in the South Yuba River downstream of the effluent discharge point. The complainant submitted electronic photographs dated 19 June 2008, which showed considerable algae growth in surface waters. The purpose of this inspection was to investigate this complaint to verify conditions in the receiving water and determine if significant algae growth was present downstream of the Donner Summit PUD WWTP effluent discharge point.

### **Observations**

Donner Summit PUD general manager Thomas Skjelstad and WWTP operator Kirk Sullivan accompanied us during our investigation. We inspected four locations in the receiving water, and collected samples at three of the locations for analyses in the field and at a laboratory, as discussed below.

#### **Location R-1:**

This location is approximately 50 feet upstream of the effluent discharge point, and represents background conditions unaffected by the effluent discharge from the WWTP. The Discharger routinely collects samples from this location to measure compliance with receiving water limitations. At the time of our inspection, the water appeared clear (Figure 1). A minimal amount of attached algae was present, and was the least of the four river observations. Samples were collected at this location.

#### **Effluent Discharge Location:**

This location is where the effluent discharges from a diffuser consisting of a pipe buried beneath gravel near the edge of the river. Effluent flows through the gravel and down into the river. Effluent was discharging into the river at the time of our inspection (Figure 2). Some of the effluent was visible trickling between the gravel. The effluent appeared clear and was visually indistinguishable from the river (Figure 3). Some attached algae growth was present near the effluent discharge point, particularly along the side of the river where effluent mixes with the receiving water (Figure 4). No samples were collected at this location.

#### **Location R-2:**

This location is approximately 500 feet downstream of the effluent discharge point, and represents the compliance point where complete mix with the receiving water is expected. R-2 appeared clear (Figure 5). Attached algae growth at R-2 was the most pronounced of all of the observed locations (Figures 6, 7). Samples were collected at this location.

#### **Towle Mountain Road Bridge Crossing:**

Towle Mountain Road crosses the South Yuba River at [N39.32923° W120.40997°](#), approximately 4000 feet downstream from the R-2 location. According to representatives at

Donner Summit PUD, this is the location where the Complainant's photos were taken. The river at this location appeared clear (Figure 8). Some attached algae growth was present. Samples were collected at this location.

**Effluent:**

The last location sampled was the WWTP final effluent. Grab samples were collected from the continuous monitoring piping, as indicated by WWTP staff.

**Other:**

We briefly observed the secondary treatment processes, and discovered some operational concerns at the facility. The surface of secondary clarifier No. 1 was vibrantly green (Figures 9, 10), unlike prior observations in October 1999 and February and August 2007 (Figures 11 to 13). The secondary clarifier No. 2 had algae growth on the weirs, trough, and other submerged structures (Figures 14, 15). The facility representatives indicated that they had not cleaned the algae off the clarifiers due to some operational problems with the filters. They expressed concerns that the excess algae, if released to the filters, could cause operational problems. They were planning to switch over to land disposal within the next few days, and indicated they would address the algae on the clarifiers after that time.

### **Sampling/Analyses**

Patricia Leary and Spencer Joplin collected representative grab samples using a polyethylene dipper in the receiving water at R-1, R-2, and the Towle Mountain Road bridge, and the continuous monitoring piping for the final effluent samples at the WWTP. The samples for laboratory analyses were poured into new and labeled polyethylene bottles, one with sulfuric acid preservative for ammonia analysis, two without a preservative for all other analyses, then placed into an iced cooler. Spencer Joplin transported the samples in an iced cooler for laboratory analyses under chain of custody to California Laboratory Services, an accredited environmental laboratory. California Laboratory Services analyzed the samples by EPA Methods and Standard Methods, all within method hold times. The laboratory methods and results are summarized in Table 1. WWTP staff also collected grab samples from the same locations and times. Regional Water Board staff received the laboratory results from Donner Summit PUD, which are not included in this report but corroborate the results.

Leticia Valadez conducted field measurements for electrical conductivity (EC), pH, nitrate, and nitrite, using separate grab samples at each sample location, and after calibrating the pH and EC meters with a 7.00 pH and 1000  $\mu\text{S}/\text{cm}$  standard solutions prior to analysis of the first sample. Leticia also analyzed nitrite and nitrate using a colorimetric test strip kit. The results for EC and pH are summarized in Table 1. The field nitrite and nitrate results are not included, but they corroborate the more accurate laboratory nitrite and nitrate results.

**Table 1. Sample Results.**

Method:		Field Measurements		SM 4500-NH3 F	EPA 300.0			SM 4500-P E		SM 4500-NH3 C
Analyte:		pH	EC	NH <sub>4</sub> as N	NO <sub>2</sub> as N	NO <sub>3</sub> as N	PO <sub>4</sub> as PO <sub>4</sub>	Total P as P	Total Kjeldahl Nitrogen	
Sample	Time Sampled		µS/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
R-1	10:05	6.87	47.7	<0.10	<0.10	<0.50	<0.15	<0.050	<0.20	
Effluent	12:10	7.31	676	<0.10	<0.10	<b>23</b>	<b>4.8</b>	<b>1.8</b>	<b>0.20</b>	
R-2	10:45	7.20	65.9	<0.10	<0.10	<b>0.55</b>	<0.15	<0.050	<b>0.24</b>	
Towle Mountain Rd	11:40	8.00	60.1	<0.10	<0.10	<0.50	<0.15	<0.050	<b>0.28</b>	

Bold values indicate results above method detection limits.

The sample results support that pH and EC were within typical values. Ammonia (NH<sub>4</sub>) and nitrite (NO<sub>2</sub>) were not detected in any of the samples. Therefore, the WWTP is nitrifying ammonia.

Nitrate (NO<sub>3</sub>) was detected in the effluent sample at 23 mg/l. The NPDES permit includes a monthly average effluent limitation for nitrate of 10 mg/l, calculated as the arithmetic mean of all sample results in a calendar month, regardless of sampling frequency. The Cease and Desist Order provided a schedule to comply with the nitrate limitation by 1 April 2007. The NPDES permit's monitoring and reporting program requires weekly grab samples collected for nitrate analysis and the results for June 2008 to be submitted to the Regional Water Board by 1 August 2008. The Regional Water Board received the results on 25 July 2008. The average of all nitrate results violates the effluent limitation. Nitrate was also detected in the downstream sample from R-2 but at greatly reduced concentration, and was not detected in the upstream sample from R-1.

Total Kjeldahl nitrogen measures the total of the organic and ammonia nitrogen. It was detected in the effluent sample and the two downstream samples. The concentrations detected were near the method detection limit. The NPDES permit includes no effluent limitation for total Kjeldahl nitrogen.

Phosphorus (Total P) and orthophosphate (PO<sub>4</sub>) were detected only in the effluent sample. There is no effluent limitation for phosphorus or orthophosphate.

The results support that organic nitrogen, nitrate, orthophosphate and total phosphorous are present in the effluent, and some constituents were also present in the receiving water downstream of the effluent discharge point. None of the constituents were detected in samples collected upstream of the effluent discharge point. Filamentous attached algae

growth was also present downstream of the effluent discharge point, and it appeared to match with locations affected by the effluent discharge.

### Historical Analysis

The NPDES Permit does not require Donner Summit PUD to monitor receiving water for nutrients such as nitrate. Instead, I reviewed the effluent monitoring data for the months of June and July for the years 2005 to 2008. I tabulated the data as Table 2, below. The results show that the concentrations of constituents measured during this inspection's sampling are typical of past monitoring results. The effluent often contains nitrate concentrations exceeding the average monthly effluent limitation of 10 mg/l that became effective on 1 April 2007.

**Table 2.** Historical Effluent Results.

Date	Ammonia	Nitrate
	mg/l	mg/l
1 June 2005	0.2	6.3
15 June 2005	0.1	20.2
22 June 2005	0.3	22.5
29 June 2005	0.3	23.6
6 July 2005	0.6	0.8
13 July 2005	0.4	19.0
20 July 2005	0.3	37.0
1 June 2006	1.7	12.3
8 June 2006	1.2	16.2
15 June 2006	5.4	12.0
22 June 2006	2.5	10.9
28 June 2006	0.6	12.0
4 July 2006	14.7	0.9
7 June 2007	1.3	14.2
14 June 2007	0.1	15.0
21 June 2007	0.3	18.0
28 June 2007	0.1	22.2
5 July 2007	<0.01	21.8
12 July 2007	2.1	19.9
17 July 2007	<0.01	not sampled
5 June 2008	0.2	23.7
12 June 2008	0.2	17.6
19 June 2008	0.2	16.4
26 June 2008	0.2	15.3
30 June 2008 (Donner Summit PUD)	0.3	21.1
30 June 2008 (Regional Water Board staff)	<0.10	23

The NPDES permit requires Donner Summit PUD to monitor the reach bounded by R-1 and R-2 and maintain a log of receiving water conditions when conducting regular monitoring

(twice weekly), including the presence or absence of “Fungi, slimes, or objectionable growths.” I reviewed the monthly report submitted for May 2008, in which Donner Summit PUD reported finding no fungi, slimes, or objectionable growths at either R-1 or R-2. The algae we noted in the receiving water supports the identification of algae as a violation of Receiving Water Limitation G.5, which requires that, *“The discharge shall not cause...fungi, slimes, or other objectionable growths.”*

### Conclusions

1. Waste Discharge Requirements Order No. R5-2002-0088 Receiving Water Limitation G.5 states:

*“Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the receiving water:”*

*“5. Fungi, slimes, or other objectionable objects.”*

The treated effluent adds nitrate, organic nitrogen, phosphorous, and orthophosphate to the South Yuba River. These nutrients are known to promote algae growth. There was algae growth below the effluent discharge point that appeared to be caused by the discharge, in violation of Receiving Water Limitation No. G.5.

2. Waste Discharge Requirements Order No. R5-2002-0088 Standard Provision General Provisions No. A.6 states:

*“The Discharger shall at all times properly operate and maintain all facilities, and systems of treatment and control including sludge use and disposal facilities (and related appurtenances) that are installed or used to achieve compliance with this Order.*

*Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.”*

Algae growth in the secondary clarifiers is an indication that the facility may be having operational problems.

3. The WWTP is effectively nitrifying ammonia to nitrate as evidenced by the laboratory analyses, which did not detect ammonia or nitrite in the effluent sample. However, the WWTP appears to have difficulty denitrifying nitrate to nitrogen, as shown in the laboratory analysis, which detected nitrate in the effluent sample at a concentration above the monthly average limitation. Donner Summit violated the nitrate monthly

average effluent limitation for June 2008.

---

SPENCER JOPLIN, Water Resource Control  
Engineer

## Attachment A: Photo Log

CIWQS Inspection 1423339

**Attachment A**  
**Photo Log**  
Donner Summit Public Utility District  
Wastewater Treatment Plant  
30 June 2008



**Figure 1.** Monitoring point R-1 (50 feet upstream of effluent discharge point). The arrow indicates the approximate sample location. SMJ.



**Figure 2.** Effluent discharge point, looking upstream. The arrow indicates the gravel diffuser. SMJ.



**Figure 3.** Adjacent to effluent discharge point. SMJ.



**Figure 4.** Directly downstream of effluent discharge point, looking upstream. SMJ.



**Figure 5.** Monitoring point R-2 (500 feet downstream of effluent discharge point). The arrow indicates the approximate sample location. SMJ.



**Figure 6.** Monitoring point R-2. SMJ.

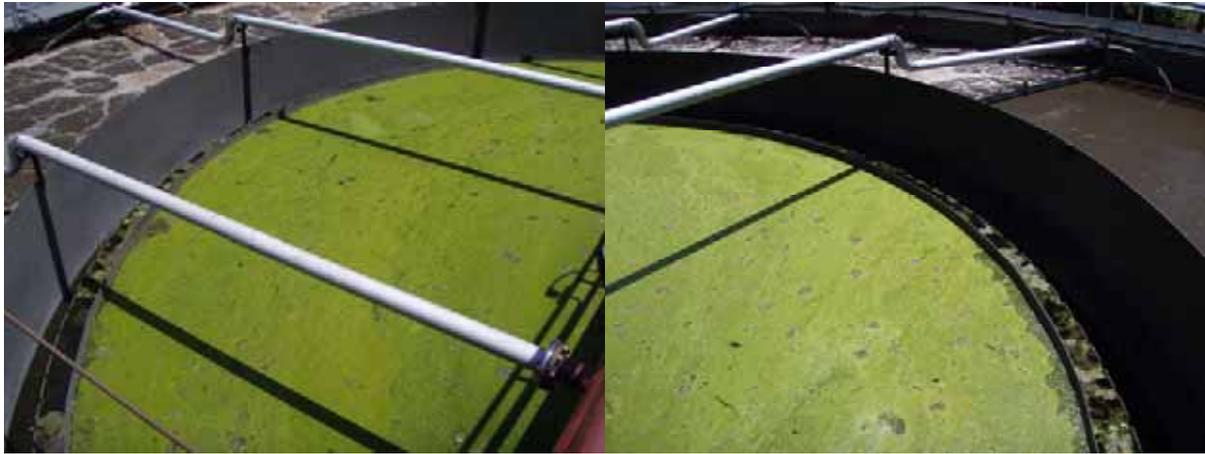


**Figure 7.** Monitoring point R-2. SMJ.



**Figure 8.** Directly upstream of Towle Mountain Rd, from the bridge. The arrow indicates the approximate sample location. SMJ.

**Figures 10 to 13. Package Secondary Treatment Plant No. 1.**



**Figures 9, 10.** 30 June 2008. The uniform color green appears different due to different photographic exposure durations. SMJ.



**Figure 11.** 9 August 2007. SMJ.



**Figure 12.** 14 February 2007 (Winter conditions). Scott Slamal, Tetra Tech, Inc.



**Figure 13.** 7 October 1999. Robert Fagerness, Regional Water Board staff.

Donner Summit PUD  
Wastewater Treatment Plant  
Nevada County



**Figures 14, 15.** Package treatment plant No. 2. Algae is growing on effluent troughs, scum trough, and other submerged structures. Floating algae is also growing outside of the scum ring. SMJ.



PHL

September 4, 2008

Patricia Leary  
Senior Engineer  
NPDES Compliance and Enforcement Unit  
California Regional Water Quality Control Board  
Central Valley Region  
11020 Sun Center Drive, #200  
Rancho Cordova, CA 95670-6114

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RECEIVED  
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**RE: TECHNICAL REPORT  
DONNER SUMMIT PUBLIC UTILITY DISTRICT, NEVADA COUNTY  
NOTICE OF VIOLATION DATED 8 AUGUST 2008**

Dear Ms. Leary,

Please accept this technical report as a response to requirements requested in the Notice of Violation dated 8 August 2008. Given the relatively short response period (30 days) allowed for in the Notice of Violation (NOV) for the preparation of this report, it was not possible to undertake planning or modeling efforts in specific response to the NOV. Therefore, it was assumed that the need for this report was directed toward (a) summarizing the compliance plan that was in place prior to the occurrence of the biostimulation event and NOV and (b) reporting whether the occurrence of the biostimulation event was sufficient cause to necessitate a change to the current compliance plan. These details are provided, herein. The District welcomes the opportunity to further discuss any of the contents of this report if desired by Regional Board staff.

Per the technical report requirements, the following issues were to be addressed:

1. *The inability of the WWTP to denitrify and to remove nitrate from the discharge. The WWTP cannot consistently meet its effluent limitation for nitrate, as evidenced by historical nitrate effluent concentrations. Please provide plans and a time schedule for reducing nitrate concentrations in effluent to comply with effluent limitations and to prevent further violations of receiving water limitations.*
2. *The condition of the clarifiers, and the concerns raised about filter operations support the WWTP is encountering operational problems. Please provide a detailed explanation of the problems, and the measures being taken to improve operations at the facility.*

## Item 1: Denitrification

The Donner Summit Public Utility District (DSPUD) currently discharges waste under National Pollutant Discharge Elimination System (NPDES), permit number R5-2002-0088. That Order contained an average monthly nitrate limitation set at 10 mg/L. That Order expired on June 1, 2007. The District also operates under a Cease and Desist Order that required compliance with the nitrate limitation by 1 April 2007. The District has been operating under the expired Order since June 1, 2007.

The District has undertaken efforts in an attempt to comply with this limitation. All of the infrastructure facilities are in place and the District has been diligently operating the facility with the intention of nitrate compliance. However, flows and loads to the facility are highly variable. The flow and strength of wastewater is too variable to maintain a robust biological treatment process that can consistently nitrify and denitrify to the standards contained in Order R5-2002-0088. To assure that an adequate biology is available for the holiday weekends when the greatest flow and load treatment requirements occur, nutrients must be added to the process during the off-season periods. In effect, current attempts at complying with the limitations contained in Order R5-2002-0088 require feeding the biological treatment process a synthetic wastewater so that an adequate biology is available when a significant amount of real wastewater requires treatment during holiday weekends. Very low wastewater temperatures also contribute to inhibiting the biological treatment process from performing in a robust manner. Insofar as the infrastructure is in place, and operations occur with the intent of compliance, the District is not obtaining any economic benefit by not complying with the nitrate limitation. As a result, the District submitted a **Report of Waste Discharge** in March 2007 for renewal of its National Pollution Discharge Elimination System (NPDES) Permit. That report described the District's current proposal to make use of dilution in addition to current treatment efforts to attain compliance with the nitrate regulatory criteria. Discussion follows with regards to impacts to human health and biostimulation.

**Human Health Objectives.** The nitrate limitation contained in Order No. R5-2002-0088 is derived from maintaining an MUN beneficial use of the South Yuba River and reflects the drinking water maximum contaminant level (MCL). The nitrate limitation has no connection to biostimulation within the South Yuba River.

The nitrate limitation described by Order R5-2002-0088 was assigned without regard to dilution that had historically existed, and continues to exist, within the South Yuba River. The Report of Waste Discharge provided information, consistent with the State Implementation Plan (SIP), that established the harmonic mean flow (the applicable flow statistic per SIP for human health based criteria) of the South Yuba River at the DSPUD discharge point for the 51 years of record. For the permitted effluent discharge months of October through July, the harmonic mean flow is estimated to be 19.3 cfs (12.5 Mgal/day). This is a conservatively low estimate of the harmonic mean flow because the harmonic mean is disproportionately biased toward the low stream flows that occur in dry Octobers when no effluent will be discharged into the river (i.e., during dry Octobers, effluent will continue to be discharged to land).

The long-term arithmetic mean effluent discharge to the South Yuba River that has occurred during October through July for the past four years has been 0.238 Mgal/day. The peak month flow corresponding with this average flow is estimated to be 0.383 Mgal/day. Considering the possibility that peak month ski season flows may increase to 0.82 Mgal/day during the life of the permit, the October through July average effluent flow may also increase. Based on linear extrapolation of the 0.238 Mgal/day average flow associated with 0.383 Mgal/day peak month flows, the October through July long-

term average effluent discharge flow under “build-out 0.82 Mgal/day” flow conditions would be 0.510 Mgal/day. This 0.510 Mgal/day value is a high estimate of the average flow rate under the life of the proposed permit because pre-ski season flows are not expected to increase much. However, if this conservative average effluent discharge flow is used with the conservative harmonic mean flow of the South Yuba River at the discharge location, then the resulting dilution factor is calculated to be 24.5 (e.g.,  $12.5 \text{ Mgal/day} \div 0.510 \text{ Mgal/day} = 24.5$ ).

The human health water quality objective for nitrate is 10 mg/L (as N). The background nitrate concentration in the South Yuba River is 0.05 mg/L. The dilution ratio is 24.5 for this contaminant and the proposed discharge. There are more than 10 data for DSPUD effluent nitrate concentrations. The coefficient of variation for recent (2006) DSPUD effluent nitrate data is 0.853. Based on this coefficient of variation and the foregoing values, effluent limitations on nitrate that account for the available assimilative capacity are calculated as follows:

$$\text{ECA} = C + D_{\text{other}}(C-B) = 10 \text{ mg/L} + 24.5 (10 \text{ mg/L} - 0.05 \text{ mg/L}) = 254 \text{ mg/L (as N)}$$

$$\text{AMEL} = \text{ECA} = 254 \text{ mg/L} = 250 \text{ mg/L (as N)}$$

$$\text{MDEL} = \text{ECA (MDEL/AMEL multiplier)} = 254 \text{ mg/L (2.35)} = 597 \text{ mg/L} = 600 \text{ mg/L (as N)}$$

where ECA = effluent concentration allowance (mg/L)

C = regulatory objective (mg/L)

$D_{\text{other}}$  = dilution credit associated with human health based water quality objectives

B = Background concentration (mg/L)

AMEL = average month effluent limitation (mg/L)

MDEL = maximum day effluent limitation (mg/L)

There is no potential that effluent nitrate concentrations will ever exceed these effluent limitations. Therefore, it is questioned whether effluent limitations on nitrate are needed to protect public health. If effluent limitations are needed for legal reasons, then the effluent limitations need to be based on performance-based limitations under Resolution 68-16 rather than on SIP protocol.

**Biostimulation.** The NPDES permit allows for a discharge only during the months October through July, inclusive, and only when environmental conditions preclude land irrigation. The discharge season was established to prevent biostimulation in the South Yuba River and has been successfully implemented for decades. This algae bloom is the only known significant biostimulatory event in the discharge’s history.

The District submitted a **Field Survey of Biostimulation in the South Yuba River at and about the Donner Summit Public Utilities District Effluent Discharge Point** on 11 July 2008. That report stated that the rareness of the June 2008 growths, their limited spatial and temporal extent, their die-off under conditions normally conducive to biostimulation, and their relative absence at the effluent discharge point all suggest that this is not a typical effluent nutrient biostimulation problem; and accordingly, it was recommended that the problem not be addressed as such. It was further recommended that a revision to the monitoring plan for the facility be implemented whereby downstream locations from R2 should be visually monitored for growths and/or the presence of filamentous green algae beginning in about May and continuing until cessation of the discharge. Should growths become evident, consideration should be made to cease the discharge and initiate irrigation of the ski slope if at all possible. If cessation of the discharge is not possible, detailed visual record keeping of time and location and additional monitoring of



nutrient and temperature conditions within the identified plume and outside the identified plume would aid in modifying facility design and/or diffuser design to prevent further occurrences.

At this time, considering the availability of dilution within the South Yuba River and our current understanding with Regional Board staff that dilution credits will be assigned to the discharge, storage during problematic periods rather than additional treatment appears to be the best solution given all of the operational and water quality constraints. The need for storage, and development of sizing criteria, can only be established upon a repeat of the biostimulatory event. It is uncertain, and based on the historical record statistically unlikely, that a repeat event will occur within the foreseeable future.

## Item 2: Clarifiers

The facility is not experiencing operational difficulties with either the clarifiers or its filters. The effluent turbidity is, and has been, within regulated parameters. In fact, if effluent turbidity can be maintained, the presence of algae and other growths in the clarifiers would only serve to improve biological treatment of the wastewater, including reducing the concentrations of nutrients in the effluent. Insofar as the presence of algae within the clarifiers is not a regulated parameter, and does not impact the ability to comply with effluent turbidity limitations, no facility or operational improvements are planned at this time.

## Conclusion and Time Schedule

Our current understanding is that the facility will be in full compliance with nitrate regulatory criteria upon adoption of the renewed Order once the impacts of dilution are properly accounted for in accordance with SIP protocols. Insofar as the District is not currently discharging to surface water (e.g., the permit precludes a discharge from occurring during the months of August and September), the nitrate effluent limitation is not currently applicable. Once the discharge is reinitiated, we will monitor the receiving water according to the recommendations presented herein to prevent a reoccurrence of biostimulation within the South Yuba River. Should the renewed Order contain different monitoring requirements, we will implement those monitoring requirements once they become known to us.

We welcome the opportunity to meet with Regional Board staff to further discuss any specific concerns.

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Sincerely,

**ECO:LOGIC Engineering**

A handwritten signature in black ink, appearing to read "Robert W. Emerick". The signature is written in a cursive, somewhat stylized script.

Robert W. Emerick, Ph.D., P.E.

Principal

cc. Tom Skjelstad, Donner Summit Public Utility District  
Ken Landau, Central Valley Regional Water Quality Control Board