

March 2, 2009

Attention: Dianna Messina
California Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Drive, Suite 200
Ranch Cordova, CA 95670-6114

Submitted by: mail and email

Subject: DSPUD Tentative Waste Discharge Permit and Cease and Desist Order CA0081621

Dear Ms. Messina,

We are homeowners in Serene Lakes whose wastewater is processed by DSPUD on behalf of Serene Lakes' water district (Sierra Lakes County Water District). We want to insure that the wastewater is properly treated in the DSPUD wastewater treatment plant (WWTP) and does not contribute to pollution in the South Yuba River.

As spelled out in the Porter-Cologne Water Quality Control Act, California has "a primary interest in the conservation, control, and utilization of the water resources of the state" ... "the quality of all the waters of the state shall be protected for use and enjoyment by the people of the state" ... "Activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible, and intangible."

Legislative findings as to water policy in California are buttressed (and perhaps made stronger) by the Public Trust Doctrine, which makes it imperative to factor protection of resources and the environment, encompassing impact to wildlife, recreation, other beneficial uses, and intangibles, such as "watching the river flow" into any decisions concerning use of the South Yuba River as a convenient effluent disposal receptacle.

It is critical that the CVRWQCB recognize that DSPUD's effluent disposal method has had, and will continue to have, a marked cumulative impact on many miles of South Yuba River watershed. Any loosening of current standards may subject the entire river watershed to damage to the environment, harm to wildlife and aquatic life, and detriment to recreation.

The South Yuba River is the centerpiece of many downstream communities, with cabins snuggled on its banks in scenic reaches. The South Yuba flows through campgrounds at Big Bend, alongside the Emigrant Trail rocks and ranger station, and through a new Placer County heritage park.

It is especially important to protect the South Yuba River, and the experiences of visitors in these parks. In these tough economic times, more and more citizens will be seeking experiences in nature close to home. Because of the proximity of Hwy 80, the upper South Yuba River offers recreational experiences a short drive for many who live in the Central Valley; hence, effluent standards that increase the chance for algal growth may hinder many from an enjoyable river experience.

Because much of the river's flow from October through July is effluent from DSPUD's treatment plant, it is extremely important that the discharge neither threatens human and fishery health, nor does it contribute to algae, fungal or slime growth that renders the river unsightly and unusable by the public.

Since 2002, when the most recent plant upgrade started, DSPUD has had many violations, mostly involving excessive ammonia and nitrate discharges into the South Yuba River. More recent problems have been a failure in the surface spray irrigation system that may have dumped effluent into the river, and a problem that released high coliform levels into the river. These violations are disturbing, but our hope is that DSPUD will be able to fix their treatment and operations issues in order to preserve the health of the South Yuba River.

With this in mind we would like to add the following comments and suggesting regarding tentative permit CA0081621.

Comment 1: Phosphate Control

The phosphate monitoring in the tentative permit is especially relevant considering the South Yuba algae bloom in June of 2008 that occurred just downstream of the DSPUD outfall. The bloom resulted in an NOV for DSPUD last year. Phosphates were detected in samples collected on July 2nd, indicating that phosphates could have contributed to the bloom.

DSPUD is required to monitor the phosphate level of its inflow and outflow in the tentative permit. If phosphates are detected in the inflow then DSPUD should be required to instigate a public awareness campaign aimed at eliminating phosphate sources such as detergents (phosphate is present in many dishwasher detergents) and industrial cleaners.

Comment 2: Maximize the Land disposal Season

The discharge into the South Yuba can be minimized by using land disposal whenever possible. The tentative permit allows DSPUD to discharge in the river from 1 October to July 31 if weather or snow conditions do not allow for land disposal. The permit prohibits river discharge from 1 August until 30 September. The permit, however, does not establish any requirements that would enforce the earliest possible start to land disposal and the latest possible end to land disposal.

Without these requirements the district has a strong incentive to delay the use of land disposal due to the high electric cost of pumping and spraying. This is evidenced by the land discharge start dates for the last seven years. During this period the earliest start of land disposal was June 30, the latest was July 23, and the average start was July 10. What is troubling is that two of the latest start dates of July 23, 2004 and July 18, 2007 were during very dry years when the snowpack was gone by mid-May and land disposal could have begun in June.

Eliminating, or minimizing, the river discharge in late May and June is especially important in order to avoid human effluent contact during the summer recreation season which starts at the end of May on Memorial Day weekend.

The land discharge specification should state that land discharge must start before Memorial Day weekend, and not end before November 1st, unless weather or snow conditions prohibit land discharge. Any river discharge during June or October must be accompanied by weekly reports specifying why partial or full land discharge cannot be performed.

Comment 3: Contradictory Specifications

Note that, in Section IV-B, land discharge specifications 5 and 14 are contradictory, one specifying 12 hours, the other 24 hours.

The 12 hour vs. 24 hour ambiguity in the Section IV-B should be corrected.

Comment 4: Inaccurate River Flow Estimates

The tentative permit relaxes the nitrate and dichlorobromomethane effluent limits based upon expected dilution in the South Yuba River. The dilution, however, is not based upon actual flow measurements at DSPUD, but uses an estimate based upon flow data ten miles downstream at Cisco Grove.

The estimate is based upon the ratio of the watershed above DSPUD to the overall watershed above Cisco Grove. The ratio based estimate is incorrect due to three factors. First, PG&E releases water from Kidd and Cascade Lakes into the river between DSPUD and Cisco Grove; this water needs to be subtracted from the river flow calculations. Second, the residual Van Norden Dam prevents a large portion of the watershed from flowing into the South Yuba River. Third, the effluent flow from DSPUD itself needs to be subtracted from the flow.

In addition, prior to 1972, PG&E released water from Van Norden Dam into the river which also needs subtracted from the flow calculations for those years. After 1972 the dam was lowered and the water releases stopped.

The Van Norden watershed is approximately half of the 21 sq. mile DSPUD watershed, or 11.5 sq. miles. The overall watershed above Cisco is 52 sq. miles. This means that the watershed ratio in Oct., Nov., and Dec., when the river flow is blocked by the dam, is $(21-11.5)/(52-11.5) = 0.28$, otherwise it is $21/52 = 0.4$. The correct flow estimate is:

Flow at DSPUD = $(0.4 \text{ or } 0.28 \text{ in Oct, Nov, Dec}) \times (\text{Cisco flow} - \text{PG\&E releases} - \text{DSPUD discharge})$

The Cisco flow in December (used to calculate the dilution for nitrates) was 1.6 mgd and the discharge flow was 0.36 mgd. If the PGE releases are ignored, then the new formula for DSPUD flow gives a flow of 0.35 mgd. This means the dilution ratio is $0.35/0.36 = 0.97$, not 1.8 as stated in the tentative permit.

All flow calculations in the tentative permit should be altered to use the above formula and the dilution credit for nitrates should be reduced to 0.97 from 1.8.

Comment 5: Nitrate Limit Calculation

The tentative permit sets the nitrate limit to 18 mg/L due to the assumed dilution credit of 1.8. This does not seem correct. If the dilution credit is the ratio of the receiving waters to the effluent flow (as described above and on page F18 of the permit), and if the objective of the nitrate limit is to keep the nitrate level below 10 mg/L in the river after dilution, then it seems the limit should be set at $(1+D) \times 10$ mg/L, where D is the dilution credit (ratio). This is because for every liter of effluent there will be D more liters of river water, for a total volume of $(1+D)$, hence the effluent level can be $(1+D)$ times the desired diluted limit. If the dilution credit is 1.8 as in the permit, then the nitrate level in the effluent should be set to 28 mg/L. If, the dilution credit is corrected as described above, then the nitrate limit should be set at 20 mg/L.

The permit should be corrected to reflect a nitrate limit of 20 mg/L if dilution credits are allowed.

Comment 6: Require a Flow Gage

All estimates of river flow based upon a gage 10 miles down stream are inaccurate. A flow gage at the DSPUD outfall is required to determine the actual flow of the river.

In addition, a flow gage would build a database that can be used to establish the effects of climate change on the flow of the river. A flow gage would also allow one to calibrate the flow ratio between Cisco and DSPUD so that historical flow data from Cisco can be used for long term analysis.

The new permit should require a flow gage at DSPUD.

Comment 7: Set Limits for Nitrate and Dichlorobromomethane in the River

If dilution credits are allowed, then the nitrate and dichlorobromate levels should be measured immediately below the mixing point (500 feet) to insure that the diluted levels meet the desired after-dilution limits.

Add downstream nitrate and dichlorobromate limits and monitoring requirements to the permit.

Comment 8: Potential Pollution to Local Wells and Aquifers

The previous permit acknowledged that the South Yuba is an ephemeral river which doesn't flow all year, turning into large ponds with minimal connecting flow during the summer and fall months, lasting sometimes until December. These ponds can potentially feed the local "fractured rock" aquifers surrounding the river with little or no dilution. This makes it extremely important that the effluent quality meets drinking standards so as to not contaminate local wells that line the river from DSPUD down to Cisco Grove. These include wells in Plavada, Kingsvale, Rainbow, Big Bend and Cisco Grove.

The permit should add back in the statement that the South Yuba is an ephemeral river that potentially affects local wells and groundwater, including provisions for protecting and monitoring those wells.

Comment 9: Plant Upgrade Cost Considerations

DSPUD has suggested that the plant may need to be significantly remodeled or replaced in order to meet the new limits, at an expense exceeding \$10M. The DSPUD plant, however, is already very close to meeting the discharge limits in the tentative permit, and it seems reasonable that the new limits can be met without these expensive upgrades.

The primary effluent limit change is lowering the ammonia limit from 5 mg/L to 2.1 mg/L. The nitrate level, which was the source of 6 out of 7 violations since the last plant upgrade was completed, will remain the same at 10 mg/L or be relaxed to 20 mg/L with dilution.

The plant currently reduces the ammonia levels to 1 mg/L during the summer and fall months, and just makes the 5 mg/L level during the high flow and loading months of January and February. The nitrate levels have been below the 10 mg/L limit during the winter and spring months, but not during the summer and fall months when the levels are closer to 15 mg/L. During these summer and fall months the plant successfully converts all of the ammonia to nitrates but hasn't been able to break down all of the resultant nitrates.

Jeff Hauser of Eco:Logic (DSPUD's sewage consultants) has shown that the plant is capable, through operational adjustments, of meeting the ammonia limit of 2.1 mg/L all year. He has also stated that he thinks that operational changes to the plant would be enough to remove the excess nitrates during the low flow summer and fall months.

The difficult time will be in the December, January and February months when ski weekend flows can be twice the midweek flows. The plant will need to carefully balance the nitrification and denitrification processes to meet the new limits during this period. Relatively inexpensive upgrades such as enclosing the tanks to eliminate heat loss, expanding the equalization tanks to smooth out the peak weekend flows, and the operational changes suggested by Mr. Hauser may be enough to make this balancing act practical.

In addition, DSPUD and SLCWD should look at enforcing conservation measures to help reduce the peak flows, especially during the ski season. Mandatory replacement of toilets and showers with low flow devices, and requiring the use of waterless urinals (already used by most Whole Foods Markets) in ski resorts, even if paid for by the district, are much cheaper than replacing the whole treatment plant.

These changes alone may be enough to bring the plant into compliance.

The State should not reduce water quality specifications in the tentative permit based upon upgrade cost considerations.

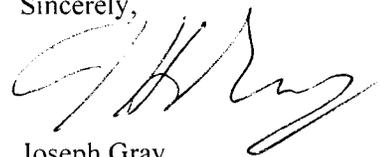
Summary:

The health of the South Yuba River, the protection of wildlife and aquatic life, and the quiet enjoyment of the river by residents and visitors alike, should not be compromised by DSPUD's effluent discharge into the river. Other compelling beneficial uses should not be subservient to the use of the South Yuba as a conduit for effluent. With these issues in mind, please consider the following changes to the tentative permit:

- 1) Phosphate monitoring is important in the permit to help prevent algae blooms in the river. The permit should require public awareness campaigns if phosphates are detected in the sewage inflow.
- 2) The land discharge specification should state that land discharge must start before Memorial Day weekend, and not end before November 1st, unless weather or snow conditions prohibits land discharge. Any river discharge during June or October must be accompanied by weekly reports specifying why partial of full land discharge cannot be performed.
- 3) The 12 hour vs. 24 hour ambiguity in the Section IV-B should be corrected.
- 4) All flow calculations in the tentative permit should be altered to use the formula in comment 3 above and the nitrate dilution ratio should be changed to 0.97.
- 5) If dilution credits are allowed, then the permit dilution calculations should be corrected to reflect a nitrate limit of 20 mg/L.
- 6) The new permit should require a flow gage at DSPUD.
- 7) Add downstream nitrate and dichlorobromate limits and monitoring requirements to the permit
- 8) The permit should add back in the statement that the South Yuba is an ephemeral river that potentially affects local wells and groundwater, including provisions for protecting and monitoring those wells.
- 9) The State should not reduce water quality specifications in the tentative permit based upon upgrade cost considerations.

Thank you for the opportunity to comment.

Sincerely,



Joseph Gray



Kathryn Gray

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