



CITY OF MT. SHASTA

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By Email and Regular Mail

Stacey Gotham
Water Resources Control Engineer
Central Valley Regional Water Quality Control Board
Redding Branch Office
364 Knollcrest Drive, Suite 200
Redding, CA 96002

Dear Ms. Gotham:

Subject: Response to Waste Discharge Requirement for the City of Mt. Shasta
Wastewater Treatment Plant, Tentative Order, NPDES No. CA0078051

The City of Mt. Shasta has reviewed the subject Tentative Order No. R5-2012-XXXX. The proposed Order places significant new discharge limitations, monitoring, and reporting requirements on the City's wastewater treatment plant (WWTP), which will have significant technical and financial impacts on the City of Mt. Shasta. The purpose of this letter is to question a number of requirements proposed in the new subject Waste Discharge Requirements (WDRs) proposed by the California Regional Water Quality Control Board (CRWQCB). Of particular concern are the following:

- No dilution credit is proposed for ammonia.
- The dilution credits proposed for copper and zinc are too low.
- New Wintertime filtration and disinfection requirements are too stringent.
- Some monitoring requirements are unreasonable.

The remainder of this letter will attempt to convey reasons why the City of Mt. Shasta believes some of the discharge requirements proposed in the draft permit are unreasonable.

Impact to Upper Sacramento River: The City performed a Mixing Zone and Dilution Study in November 2009 to study the mixing characteristics of its effluent diffuser to the Upper Sacramento River. As part of this effort, the City retained a retired California Department of Fish and Game biologist to perform a bio-assessment and determine whether the City's mixing zone met the requirements set forth in the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP). The assessment also determined whether the City's treated effluent outfall was causing significant alteration of benthic macroinvertebrate community of the Upper Sacramento River. Below are some excerpts from this bio-assessment:

YEAR-ROUND RECREATIONAL CENTER

- *“Nymphs of the genus *Lepidostoma* are very intolerant of nutrient pollution and are good water quality indicators. Interestingly, *Lepidostoma* nymphs were significantly more abundant in the mixing zone, indicating that water quality was good downstream of the wastewater discharge.”*
- *“This reach of the Upper Sacramento River is somewhat unique in that it is already heavily influenced by nutrient loading and lentic (non-flowing water) organisms from Lake Siskiyou less than one-mile upstream. The result is a general increase in nutrient tolerant species and an abundance of Hydrobiid and Planorbid snails, as well as numerous cladocera (crustaceans known as water fleas; very abundant in the lake). These organisms tend to skew metric calculation values, and make the stream appear less “healthy” overall.”*
- *“...it appears the BMI community becomes more altered nearer the dam, and the influence of the lake becomes more dominant.”*
- *“Consequently, the presence of Lake Siskiyou appears to be a significant altering influence of the BMI community in the discharge area.”*
- *“These results indicated that effects of wastewater input are below the level of significance.”*

The bio-assessment also suggests the mixing zone complies with the eleven conditions set forth in the SIP. Based on the results of the bio-assessment, it is the City’s opinion its treated wastewater outfall has had little or no impact on the Upper Sacramento River. In fact, the results of the bio-assessment suggest the City’s outfall may be enhancing the river below the outfall that is already degraded due to the presence of Lake Siskiyou less than one-mile upstream.

Ammonia Dilution Credit: The bio-assessment evaluated the presence of nutrient-intolerant nymphs below the City’s outfall and found them to be more abundant than upstream of the outfall. Therefore, the City is at a loss as to why no dilution credits were granted for ammonia. In addition to no dilution credits for ammonia, the discharge limitations, derived in Attachment F of the draft NPDES permit, are based on a worst-case effluent pH of 8.5, which is proposed to be the new upper limit WDR. Even though the new upper pH limitation is proposed to be 8.5, the City’s effluent pH has never been this high. The wastewater effluent is typically less than 7.0. Using 8.5 to establish the ammonia limitation seems unreasonably conservative.

Dilution Credit Determination: It is the City’s opinion the dilution credits offered for copper and zinc are artificially too low. Using the maximum historical wastewater effluent flow and the 1Q10 and 7Q10 river flows, the RWQCB has indicated the maximum river-to-effluent dilution ratio is 11:1. Using 11:1 as a starting point, the ratio is further reduced to account for the difference between the flows during the study and critical flows. Based on historical data, the City has never discharged to the river at river-to-effluent ratios less than 20:1. In addition, it seems unreasonable to set discharge limitations, assuming the City’s historical peak effluent flow will coincide with a historical low river flow. This condition has never happened and will not likely happen. The City experiences its peak flows after prolonged periods of steady rainfall and/or rainfall over snow. During these conditions, river flows are also typically very high –

much higher than 1Q10 and 7Q10 statistical low flows which are artificially induced by operation of Box Canyon Dam. Historical data indicates the majority of City discharges occur at river-to-effluent ratios of between 40:1 and 60:1.

Even though the City has never discharged at less than 20:1 river-to-effluent ratio, it is willing to implement flow control on its wastewater outfall in order to assure the RWQCB that provisions are in place to never discharge at less than this ratio. With implementation of these positive controls, the City requests the dilution credits be recalculated starting at a 20:1 maximum river-to-effluent ratio, as opposed to 11:1.

Wintertime Disinfection Requirements: The draft permit attempts to justify the need for more stringent wintertime disinfection requirements due to the possibility of contact recreation activities in the river. The draft permit proposes a Title 22 “unlimited use” disinfection requirement suitable for irrigating food crops, parks, playgrounds, school yards, and other areas of similar public access. Clearly, these uses put the public in much more direct contact with treatment effluent than a surface water discharge in a highly inaccessible section of the Box Canyon reach of the Sacramento River. The draft permit acknowledges Title 22 is not applicable to surface waters; yet, at its discretion, the RWQCB believes it is appropriate to apply an equivalent level of treatment due to the possibility of contact recreation activities.

Page F-57 of the draft permit references the April 8, 1998 letter, from California Department of Public Health (CDPH), indicating it would consider wastewater discharges to water bodies with identified beneficial uses of irrigation and contact recreation, and where wastewater receives dilution of more than 20:1 and coliform does not exceed 23 MPN/100 ml as a 7-day median. Clearly, it appears CDPH allows a less stringent disinfection criteria (23 MPN/100 ml) when discharging to water bodies subject to contact recreation activities.

Contact recreation activities in Box Canyon are limited to a small number of “die-hard” kayakers who lower their kayaks with ropes down the steep Box Canyon walls when river flows exceed about 450 CFS. In fact, one of the kayakers that commented on the draft permit desired to increase the minimum flow from 200 CFS to 450 CFS to discourage others from kayaking this section of river – apparently in an attempt to secure his own kayaking playground.

Given that CDPH allows less stringent disinfection requirements when discharging to water bodies subject to contact recreation activities, and because of the very limited contact recreation activities due to dangerous and difficult public access to Box Canyon in the winter, it is the City’s position the 23 MPN/100 ml disinfection requirement is adequate during the winter discharge period (November 15 to April 15). Even though CDPH does not distinguish wintertime from shoulder discharge periods, suggesting the 23 MPN/100 ml is adequate at all times if a minimum 20:1 dilution is met, the City will agree to a more stringent 2.2 MPN/100 ml during the shoulder discharge periods.

However, because the City has acknowledged it will provide effluent flow control to assure discharges will always be made at minimum 20:1 river-to-effluent dilutions, it feels any effluent discharge limitation tied to a maximum river flow to protect kayaking, are unsubstantiated.

Wintertime Filtration Requirements: The new permit imposes tertiary treatment requirements during wintertime discharge to the Upper Sacramento River. During the winter months, the receiving water quality contains high concentrations of BOD, TSS, and coliforms from the influence of Lake Siskiyou less than one-mile upstream. Receiving water-to-effluent discharge ratios are typically very high during the winter – usually in the 40:1 and 60:1 range, but never below 20:1. In addition, the biological assessment performed as part of the 2009 Mixing Zone and Dilution Study suggests the river is healthier below the City’s wastewater outfall and degrades as you move upstream toward the dam. Therefore, to impose more stringent filtration requirements during the winter discharge period seems unsubstantiated and unreasonable, especially if the City implements effluent flow control to maintain greater than 20:1 river-to-effluent dilution.

Monitoring Requirements: The draft permit proposes significantly more monitoring requirements than the prior permit. Of particular concern to the City is the increased frequency of receiving water and leach field monitoring requirements. Page E-13 of the draft permit requires weekly receiving water sampling for pH, temperature, dissolved oxygen, turbidity, and total coliforms. The prior permit required weekly sampling for pH and temperature. The previous and the proposed permit allow the City to take receiving water samples in Lake Siskiyou, which is much more accessible during the winter. However, with the new temperature restrictions (described on Page 19 of the draft permit), the City is concerned with maintaining compliance if samples are taken in the lake instead of the river. The lake temperatures are warmer than the river. The new temperature restrictions seem to imply the City will need to take samples in the river in order to comply. Access to the river at any time is treacherous. During winter months with snow and ice on the ground and in a box canyon, it is often not possible especially for upstream receiving water samples. The City requests the weekly receiving water sampling/monitoring requirements be relaxed during the winter months?

Similarly, the new permit imposes quarterly, as opposed to annual, sampling and monitoring at the leach field disposal area. During the winter, this area is often covered in deep snow for months at a time. Access can be a challenge. The new permit requires the City to perform a Groundwater Monitoring Well Network Technical Report and Leach/Field Design Investigation, which the City intends to complete. If the results of these studies reveal the leach field is not degrading groundwater and is functioning as designed, the City requests the RWQCB consider an opener to re-evaluate the frequency of monitoring/sampling requirements?

Financial Hardship: The City of Mt. Shasta’s Wastewater Treatment Plant serves approximately 2,300 household equivalents in south-central Siskiyou County. According to City-data.com, the population has decreased approximately 6.3% since Year 2000. In addition, the current median household income (MHI) is approximately \$46,549, or about \$12,380 less than the State MHI. In actuality, the MHI for the City residents being served by the WWTP facilities is significantly lower than the census-derived data because of the sample area.

If adopted in the proposed form, the new permit will impose discharge requirements on the City that will require significant upgrades and new processes costing in the \$10M to \$15M range. Funding a capital project of this magnitude will require the City to raise sewer rates by 200% to 250%. Any rate increase will be subject to a, likely contentious, voter approval process because of Proposition 218 requirements. Given the current economic conditions, the City believes such a financial burden will have devastating effects on the City of Mt. Shasta and its constituents.

In addition to performing the requested studies in the draft permit, the City intends to perform an overall Wastewater Treatment and Disposal Feasibility Study in order to evaluate alternatives for complying with the new permit requirements. The City will need a minimum of one year from adoption of the draft permit to complete the feasibility study and associated special studies. Depending on the study results, the City will need an additional 2 to 4 years to perform environmental and engineering studies, secure financing, and implement any necessary rate increases. Finally, an additional 3 to 4 years will be necessary to design and construct the improvements.

Therefore, the City would need up to eight years to implement improvements to comply with the new permit requirements, assuming required rate increases are timely approved by the voters and the necessary project financing can be secured.

The City thanks the Board for the opportunity to comment on this permit, and for its consideration of our concerns.

Sincerely,



Theodore E. Marconi
City Manager