Central Valley Regional Water Quality Control Board
4/5 October 2012 Board Meeting

Response to Written Comments on
Tentative Waste Discharge Requirements for
City of Mt. Shasta and U.S. Department of Agriculture, Forest Service
City of Mt. Shasta Wastewater Treatment Plant
Siskiyou County

At a public hearing scheduled for 4/5 October 2012, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0078051) for the City of Mt. Shasta Wastewater Treatment Plant. This document contains responses to written comments received from interested parties in response to the Tentative Order. Written comments from interested parties were required to be received by the Central Valley Water Board by 27 August 2012 in order to receive full consideration. Comments were received prior to the deadline from:

1. City of Mt. Shasta (Discharger) (received 24 August 2012)
2. U.S. EPA (received 24 August 2012)
3. CA Department of Public Health, Drinking Water (received 27 August 2012)
4. Central Valley Clean Water Association (CVCWA) (received 27 August 2012)
5. American Whitewater (received 27 August 2012)
6. Colin Kessler (received 6 August 2012)
7. Jason Mower (received 22 August 2012)
8. Daniel Brasuell (received 22 August 2012)
9. Darin McQuoid (received 24 August 2012)

Comments were received after the deadline from:

1. Smith River Alliance (received on 28 August 2012)

Written comments from the above interested parties are summarized below, followed by the response of Central Valley Water Board staff.

DISCHARGER (CITY OF MT. SHASTA) COMMENTS

DISCHARGER COMMENT #1 - Ammonia Dilution Credit

The Discharger requests dilution credits be provided in the calculation of ammonia effluent limitations. The Discharger states that the allowance of an ammonia dilution credit should be granted in light of the results of their November 2009 bio-assessment of the Upper Sacramento River near the facility outfall.

RESPONSE:
The Central Valley Water Board has amended the tentative permit to include a dilution credit for ammonia. Please see response to CVCWA comment #2 for further details.

DISCHARGER COMMENT #2 – Ammonia criteria calculation
The Discharger states that the use of the maximum pH of 8.5 in the establishment of the ammonia criteria is "unreasonably conservative." The Discharger states that wastewater effluent is typically less than 7.0.

RESPONSE:
Staff disagrees that the use of the maximum permitted effluent pH is unreasonably conservative and no changes in the permit are proposed based on this comment.

The acute ammonia criterion was calculated in the proposed permit using the maximum permitted effluent pH value of 8.5 s.u. Utilizing the maximum observed effluent pH (of 8.0) would require the permitted maximum effluent pH limit to be changed from 8.5 to 8.0. The Discharger did not specifically request that the maximum effluent pH limit be tightened to match the historic high of 8.0, and doing so may lead to effluent pH violations during the next permit term.

The tentative permit presents an acute criterion of 2.14 mg/L, based on the maximum permitted pH of 8.5. Utilizing an effluent pH value of 8.0 would equate to an acute criterion of 5.62 mg/L; however the applicable chronic criterion is 2.6 mg/L (based on receiving water pH and temperature). The chronic criterion of 2.6 mg/L would therefore become the most limiting criterion and the water quality based effluent limits would not change significantly.

DISCHARGER COMMENT #3 – Dilution credits for copper and zinc
The Discharger states the dilution credits provided for copper and zinc are "artificially too low." The Discharger requests the dilution credits be recalculated starting at a 20:1 river to effluent ratio, as opposed to 11:1.

Utilizing the SIP prescribed flow values, the maximum river to effluent flow dilution ratio is 11:1. The Discharger states that based on historical data, the Facility has never discharged at river to effluent ratios of less than 20:1. In addition, the Discharger states it is unreasonable to set discharge limitations assuming peak effluent flows will coincide with historical low river flows.

RESPONSE:
Staff disagrees that the dilution credits for copper and zinc are artificially too low. Dilution credits were established in accordance with SIP procedures and based on information provided in the Discharger's Mixing Zone Study. The Discharger does not currently operate the facility in a manner that ensures that a minimum receiving water to effluent flow ratio of 20:1 (or any other ratio) is present at all times.

However; two reopener provisions have been added to the permit to allow for modifications, if justified and appropriate, to the mixing zone and/or dilution credits and applicable effluent limitations, based on implementation of operational measures that ensure a higher minimum river to effluent flow ratio and if measures are taken to minimize the size of the mixing zone. The new reopener provisions are located in Section Vi.C.1.k and l and contain the following language:

> k. **Mixing Improvements**. This Order may be reopened to increase dilution credits and/or modify final effluent limitations, if appropriate, based on implementation of measures that improve mixing dynamics and minimize the size of the mixing zone(s). These improvements may include modifications to the diffuser.
>
> l. **Flow Control**. This Order may be reopened for addition and/or modification of effluent limitations, mixing zones, and/or dilution credits, if appropriate, based on implementation of operational measures that ensure a higher minimum river to effluent flow ratio.

The rationale for these reopener provisions are provided in the Fact Sheet Section VII.B.1.

DISCHARGER COMMENT #4 – Wintertime disinfection requirements
The Discharger states that the 23 MPN/100 mL as 7-day median disinfection requirement is adequate (and the 2.2 MPN/100 mL as 7-day median limit is overly stringent) during the winter discharge period (November 15 to April 15) when river to effluent dilutions are greater than 20:1 and whitewater kayaking use is present.

The Discharger provides the following reasons for their assertion: 1) CDPH allows the 23 MPN/100 mL disinfection requirement when discharging to water bodies subject to contact recreation activities when a minimum 20:1 river to effluent dilution is met and 2) contact recreation activities are limited due to dangerous and difficult public access issues related to the Box Canyon kayaking run. The Discharger states that any discharge limitation tied to river flow to protect kayaking, are unsubstantiated.

RESPONSE:
Staff disagrees that more stringent disinfection requirements are not necessary when receiving water to effluent flow ratios are greater than 20:1 and whitewater recreation is present. There are no changes in the proposed permit based on this comment.

During periods when whitewater recreation is present near the outfall, the receiving water to effluent flows are greater than 20:1 once the discharge has fully mixed with the receiving water. However the effluent discharges to the river in an area of slack water immediately above a technical river rapid where boaters may come in direct contact with undiluted effluent or minimally diluted effluent (i.e. <20:1) in either the slack water (where they stop to scout the rapid) or in the rapid itself. Please see American Whitewater comment #2 for further comments on the proximity of the outfall to the recreational users. Additionally, the energy dissipator vault, located on the slope above the river, is leaking effluent onto the slope and into the river. Furthermore, CADPH states that Central Valley Water Board staff's proposal of disinfected tertiary 2.2 recycled water standards for a discharge that has the likelihood of direct body contact with undiluted wastewater, "appears to be a reasonable approach" (See CADPH comment #1).

The Box Canyon Run is an intermediate/advanced whitewater run that is referenced in published guide books and online resources. Written public comments were received by four individual whitewater recreational users (See General Public comments) and American Whitewater, a national non-profit organization which represents the conservation interests of tens of thousands of whitewater enthusiasts nationwide. Comments from the general public and American Whitewater support that the Box Canyon Run is boated year-round, when minimum receiving water flow levels are met.

Central Valley Water Board has made the following revisions to the pathogen RPA discussion in the tentative permit (Fact Sheet Section IV.C.3.d.vii(b)):

> **(b) RPA Results**. The beneficial uses of the Sacramento River (Box Canyon to Shasta Lake include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there may be, at times, less than 20:1 dilution. Although less than 20:1 dilution is not common, the flow in the receiving water is dictated by releases from Box Canyon Dam which do not necessarily mimic the natural hydrologic cycle of the watershed. As such, minimum receiving water flows may occur at any time, including at times when high wet weather effluent flows are present. The minimum flow in the receiving water at any time is 42 cfs, therefore any effluent flow greater than

1.29 mgd will result in a river to effluent dilution of less than 20:1 (once the discharge is fully mixed with the receiving water). It is not uncommon for effluent flow to be above 1.29 mgd in the winter and spring , and the minimum Box Canyon Dam flow release of 42 cfs may occur during these periods.

Furthermore, t~~T~~he effluent discharges to a segment of river that is a ~~seasonal~~ year-round whitewater recreation (kayaking) ~~run~~area provided ~~when~~ receiving water flows are greater than or equal to ~~200~~ 400 cfs . The whitewater kayaking segment is known as the Box Canyon Run. ~~In addition, the~~The effluent outfall location is in the immediate vicinity of a technical river rapid that whitewater kayakers must navigate and therefore undoubtedly come in body-contact with the receiving water and effluent. During periods when whitewater recreation is present near the outfall, the river to effluent flows are greater than 20:1 once the discharge has fully mixed with the receiving water. However, because the effluent discharges to the river in an area of slack water immediately above a technical river rapid, boaters may come in direct contact with undiluted effluent or minimally diluted effluent (i.e. <20:1) in either the slack water (where they stop to scout the rapid) or in the rapid itself. ~~Also, one-mile downstream of the effluent outfall is a California Department of Fish and Game designated Wildlife Area that provides access to year-round fishing. Fishing and whitewater~~ Whitewater kayaking ~~are~~ is considered contact recreation.

To protect the~~se~~ beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease during periods of less than 20:1 dilution, which includes the period of time in which whitewater recreation is present, in and around the outfall. ~~and when such body contact recreation, such as whitewater kayaking, is present (receiving water flows ≥200 cfs)~~. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.

DISCHARGER COMMENT #5 - Wintertime filtration requirements

The Discharger states that the new requirement for tertiary treatment during the winter period is unsubstantiated and unreasonable.

The Discharger states the following as reasons for their assertion: 1) during the winter months, receiving water quality contains high concentrations of BOD, TSS, and coliforms from the influence of Lake Siskiyou, less than one-mile upstream, 2) Receiving water to effluent discharge ratios are typically 40:1 to 60:1 during the winter,

and not below 20:1, and 3) the Discharger's bio-assessment suggests the river is healthier below the Facility outfall and the health of the river degrades as you move upstream toward the dam.

RESPONSE:
The proposed permit contains more stringent BOD_5 and TSS effluent limitations during the winter period (16 November – 14 April) relative to the current permit. The new limits are 10 mg/L (monthly average), 15 mg/L (weekly average), and 30 mg/L (daily max). The more stringent limitations are necessary to ensure the discharge is consistent with the Antidegradation provisions of 40 CFR 131.12 and State Board Resolution No. 68-16. The new limitations do not specify that the wastewater must be filtered; however filtration is a typical means to comply with such BOD_5 and TSS limitations. Achieving compliance with these limits will result in the use of best practicable treatment or control of the discharge.

With respect to filtration, the permit does contain a special provision that requires the effluent to be "oxidized, coagulated, filtered, and adequately disinfected," pursuant to DPH reclamation criteria (Title 22). This requirement is for specific critical flow conditions that warrant the requirement, such as <20:1 receiving water to effluent flow conditions and the presence of whitewater recreation (see response to Discharger comment #4 above for additional information).

The Discharger implies in assertion #1 and #2 in their comment above, that water quality is of lesser quality upstream of the outfall. The statement that upstream receiving water contains high concentrations of BOD_5, TSS, and coliform is unsubstantiated, as the Discharger has not provided any data to support this statement (BOD_5 and TSS monitoring in the receiving water is not required in the current permit). In fact; effluent monitoring data provided by the Discharger shows that BOD_5 and TSS mass loading rates during the winter are significantly greater than mass loading rates in the current shoulder period (when the discharge is already subject to more stringent BOD_5 and TSS limitations). Therefore reducing the wintertime effluent concentrations of BOD_5 and TSS will result in significantly reduced mass loading of BOD_5 and TSS to the river and result in better receiving water quality. Historic loading rates for the shoulder and winter are compared in the table below.

	Shoulder Period (Fall and Spring) Loading Rates (lbs/day)	**Winter Period Loading Rates (lbs/day)**	**Percent Increase (%)**
BOD_5 - Average	16	94	488
BOD_5 - Maximum	37	320	765

	Shoulder Period (Fall and Spring) Loading Rates (lbs/day)	Winter Period Loading Rates (lbs/day)	Percent Increase (%)
TSS - Average	20	94	370
TSS - Maximum	36	334	828

The tentative permit has been amended to include the mass loading rate comparison table above and the following language below in the Fact Sheet (see Fact Sheet IV.C.3.vii):

> The application of tertiary treatment processes results in the ability to achieve lower levels for BOD5 and TSS than the secondary standards currently prescribed during the winter discharge period (16 November through 14 April). This fact is demonstrated below in the Discharger's BOD_5 and TSS mass loading data collected during the last permit cycle. Mass loading rates during the winter discharge period are significantly greater than mass loading rates during the fall and spring period when the discharge is already subject to the more stringent BOD_5 and TSS limitations.

DISCHARGER COMMENT #6 – Receiving water monitoring requirements
The Discharger requests the weekly receiving water monitoring requirements be relaxed during the winter months due to access issues associated with inclement weather conditions.

RESPONSE:
Weekly receiving water monitoring during the winter months is not a new requirement in the proposed permit. Receiving water monitoring is an important component in the NPDES permit, and effort must be made on the part of the Discharger to ensure that identified access issues are mitigated in order to provide for an adequate receiving water monitoring program and to enable compliance determination with permit conditions. The Discharger has not provided evidence to show that it is not able to provide safe access for conducting receiving water monitoring.

DISCHARGER COMMENT #7 – Monitoring requirements
The Discharger is concerned about potential compliance issues with the effluent temperature limitation with respect to upstream receiving water monitoring at Lake Siskiyou.

RESPONSE:
The Discharger is allowed to monitor additional upstream locations (between Box Canyon and the outfall) in the receiving water to ascertain compliance with specifications and limitations. However, Water Board staff has revised the proposed permit and removed the effluent temperature limitation.

The following change has been made to tentative permit in response to Discharger comment #7:

> **Section IV.A.1.d (Final Effluent Limitations)**
> ~~**d. Temperature**. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.~~

The Anti-backsliding section of the Fact Sheet (see Fact Sheet Section IV.D.3) has been updated to reflect the removal of the limitation and to provide justification that the removal was in accordance with anti-backsliding provisions.

DISCHARGER COMMENT #8 – Monitoring requirements
The Discharger requests a reopener provision to allow for an adjustment in the frequency of groundwater monitoring, if appropriate, following completion of the Groundwater Monitoring Well Technical Report and Leachfield Design Investigation.

RESPONSE:
Water Board staff concurs; however the proposed permit already contains such a reopener for both the Groundwater Monitoring Well Technical Report and Leachfield Design Investigation (see Section VI.C.1). Therefore no changes to the tentative permit, related to this comment, are necessary.

DISCHARGER COMMENT #9 – Financial Hardship
The Discharger states that the proposed permit will impose discharge requirements on the City that will require significant upgrades and new processes costing in the $10 to $15 million range. Funding for the capital project of this magnitude will require the City to raise sewer rates by 200% to 250%. The Discharger believes such a financial burden will have devastating effects on the City of Mt. Shasta and its constituents.

RESPONSE:
The cost of compliance has been considered, where appropriate.

The current residential sewer rate is $23.95 and the rate is approximately 0.6% of the MHI. The Discharger submitted a Report of Waste Discharge that provided cost

estimates for significant facility upgrades with a price tag of approximately $14.3 million, which would result in an estimated monthly sewer rate of $61 (a 150% increase). The projected monthly sewer rate provided in the ROWD is approximately 1.5% of the MHI.

Based on the Discharger's comment above (comment #9), the Discharger now projects a 200% – 250% increase in rates, which equates to a monthly sewer fee of $72 - $84 (approximately 1.8% to 2.1% of the MHI). The true cost of plant upgrades, however, are unknown at this time as the Discharger plans to perform a treatment feasibility analysis within the first year after permit adoption in order to explore treatment and disposal options.

The current sewer rate was effective in October 2008 and there are no known scheduled fee increases for the future. The last major upgrade to the facility was in 2001 when the facility used State grant funding to add the DAF and filter unit to allow the facility to produce recycled water for golf course irrigation.

Furthermore, dilution credits have been granted and have resulted in significantly less stringent effluent limits than assumed in the Discharger's preliminary financial evaluation. There are a number of measures available to the Discharger that could significantly reduce the cost of any WWTP improvements.

DISCHARGER COMMENT #10 – Compliance schedule timeline
The Discharger states that they need up to 8 years to implement improvements to comply with the proposed permit requirements.

The Discharger states that they need a minimum of one year from adoption of the proposed permit to perform an overall wastewater treatment and disposal feasibility study. The Discharger states that 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.

RESPONSE:
Pursuant to CWC Section 13385 j(3)(C)(i) the compliance schedule must be as short as possible. The time schedule can also not exceed five years in length. Time schedule extensions are allowed under CWC Section 13385 j(3)(C)(ii)(II), provided the following:

> "Following a public hearing, and upon a showing that the discharger is making diligent progress toward bringing the waste discharge into compliance with the effluent limitation, the regional board may extend the time schedule for an additional period not exceeding five years in length, if the discharger demonstrates that the additional time is necessary to comply with the effluent limitation."

In the future, the Discharger may request an extension to the proposed time schedule for Central Valley Water Board consideration under CWC Section 13385 j(3)(C)(ii)(II).

U.S. EPA COMMENTS

USEPA COMMENT #1 – Compliance schedules

U.S. EPA states that the compliance schedules in the proposed permit do not comply with the State Water Board Policy for Compliance Schedules in NPDES permits (Resolution No. 2008-0025). U.S. EPA states that the interim milestones for the compliance schedule for BOD_5, TSS, pH, and total coliform should be based on actions, such as obtaining permits for construction of upgraded treatment facilities, rather than report-based.

RESPONSE:

The proposed compliance schedules do comply with the State Water Board compliance schedule policy and other applicable requirements.

The compliance schedules require the Discharger to submit a compliance schedule workplan within 6 months of the adoption of the permit. Following approval of the workplan, the Discharger is required to report annually to the Central Valley Water Board on their progress towards compliance with the permit. The annual reports must detail the steps that have been implemented towards achieving compliance with the permit, such as studies conducted, construction progress, evaluation of measures that have been implemented, and/or recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

Central Valley Water Board staff does not recommend changing the compliance schedules in the permit.

CA DEPARTMENT OF PUBLIC HEALTH COMMENTS

CADPH COMMENT #1 -

CADPH stated that the proposed permit requirements for disinfected tertiary 2.2 standards for discharges that have the "likelihood of direct body contact with the undiluted wastewater, "appears to be a reasonable approach."

RESPONSE:
Central Valley Water Board staff appreciates the CADPH feedback on the proposed permit. As described in the proposed permit, whitewater boaters have the potential to come into contact with undiluted wastewater.

CADPH COMMENT #2
CADPH "strongly supports the proposed groundwater monitoring program." CADPH states that the Discharger's leachfield is located upstream of the City of Dunsmuir drinking water spring source, and the leachfield's potential to influence water quality in the spring is unknown.

RESPONSE:
No response/comment.

CVCWA COMMENTS

CVCWA COMMENT #1
CVCWA requests that the Central Valley Water Board retain the existing final effluent limitations for BOD_5 and TSS and delete the related compliance schedules.

RESPONSE:
Water Board staff does not concur. Please see response to Discharger comment #5.

CVCWA COMMENT #2
CVCWA states that the tentative permit implies that the Central Valley Water Board is requiring that all WWTPs build new treatment facilities to remove ammonia and that the denial of a mixing zone for ammonia in this tentative permit, based on "facility type," is improper. CVCWA requests that a dilution credit for ammonia be provided.

RESPONSE:
The tentative permit has been revised to include a dilution credit for ammonia. Permit references to denying a mixing zone have been removed from the Fact Sheet (Fact Sheet Section IV.C.2.c and IV.C.3.d).

As a result of the inclusion of a dilution credit for ammonia all references to the final ammonia effluent limitations have been changed from a AMEL and MDEL of 1.2 mg/L and 2.14 mg/L, respectively, to 4.6 mg/L and 8.4 mg/L. Based on past facility performance, the Discharger still cannot meet the final effluent limitations for ammonia, therefore references in the tentative permit to the TSO for compliance with the final ammonia effluent limitations remain. As a result of including a dilution credit for ammonia, the tentative TSO has been amended to reflect the new final effluent ammonia limitations (see Finding 7 of the TSO).

In addition, the following Special Provisions has been added to the tentative permit (Section VI.C.2.k):

> **k. Ammonia Reduction Study. 180 days prior to the expiration date of this Order**, the Discharger shall submit an ammonia reduction study. The study shall include a description of ammonia reduction measures implemented during the current permit cycle and/or scheduled for future implementation, site-specific constraints, if any, related to effluent ammonia reduction, and an evaluation of whether there are additional practicable ammonia reduction measures that may be implemented at the facility in order to reduce ammonia concentrations in the effluent and minimize the size of the ammonia mixing zone. If additional ammonia concentration reductions are practicable then the size of future mixing zones and dilution credits for ammonia may be reduced until such practicable concentration reductions have been achieved.

CVCWA COMMENT #3
CVCWA requests that a dilution credit for chronic toxicity be provided.

RESPONSE:
Central Valley Water Board does not concur. The Discharger's whole effluent toxicity testing on the discharge did not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective and therefore a mixing zone/dilution credit for chronic toxicity is not necessary.

Furthermore, in a 13 October 2011 letter to the Discharger, Central Valley Water Board staff requested that the Discharger provide the following information if the Discharger felt that a chronic toxicity TUc trigger greater than 1 was appropriate:

1. Justification that a higher monitoring trigger is appropriate,
2. Justification of appropriate dilution credit and size of the mixing zone,
3. Justification that mixing zone conditions outlined in SIP Section 1.4.2.2 will be met,

4. Letter specifically requesting dilution credits for chronic toxicity.

The Discharger did not provide the above information to justify the need to grant a dilution credit for chronic toxicity.

However, in response to CVCWA comment #3, Central Valley Water Board staff have added language to reopener provision 1.a(ii) (see Section VI.C.1.a(ii)):

i. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance, including justification for seasonal limitations. For example, modifications to the Chronic Whole Effluent Toxicity Accelerated Monitoring Trigger, or the effluent limitations for ammonia, may be appropriate.

CVCWA COMMENT #4
CVCWA requests the removal of the requirement to conduct an aluminum study.

RESPONSE:
The proposed permit requires the Discharger to conduct a study to determine the appropriate chronic aquatic-life criterion for aluminum. The Central Valley Water Board staff acknowledges in the tentative permit that the applicability of the NAWQC chronic criterion of 87 ug/L is uncertain as a result of site-specific pH and temperature conditions relative to the pH and temperature conditions under which the criteria was developed. The tentative permit allows the Discharger time to submit a site-specific study that will determine the appropriate chronic aquatic-life criterion in lieu of subjecting the discharge to the NAWQC chronic aquatic-life criterion recommendation for aluminum of 87 ug/L at this time.

Prior to issuance of the tentative permit the Discharger informed the Central Valley Water Board that they had discontinued the use of their aluminum-based coagulant (aluminum sulfate) for the purpose of aluminum source control measures. As a result Central Valley Water Board staff included the following statement in the Fact Sheet (Fact Sheet Section IV.C.3.c.i(b)): "*In July 2012, the Discharger discontinued the use of the aluminum-based coagulant and replaced the product with coagulant that does not contain aluminum*." Following a request for more information on the replacement product, Central Valley Water Board staff has learned that the new product is aluminum chlorohydrate. Since the new product contains aluminum as well, Central Valley Water Board staff has revised the tentative permit by removing the sentence provided above from the Fact Sheet.

Although the proposed permit requires the submittal of an aluminum study, it does allow for the requirement of the study to be waived by the Executive Officer if aluminum monitoring shows source control measures implemented by the Discharger have resulted in the reduction of effluent aluminum concentrations to below the NAWQC chronic-aquatic life criterion of 87 ug/L (see Section VI.C.2.h).

CVCWA COMMENT #5
CVCWA requests the removal of the final effluent limitation for temperature, or, alternately, add appropriate findings in support of the limitation.

RESPONSE:
Water Board staff concurs. The final effluent limitation for temperature has been removed. See response to Discharger comment #7.

CVCWA COMMENT #6
CVCWA states that it is inappropriate to conclude that a certain type of facility alone creates reasonable potential. CVCWA requests that the Central Valley Water Board revise the tentative permit to remove references with respect to Step 7 of the SIP [Step 7 – "other information"] and the discussion regarding the facility following the statement. CVCWA states that "reasonable potential here should be based solely on Step 4 and the inclusion of *other information* (emphasis added by staff) is inappropriate." [Step 4 – maximum effluent concentration is greater than the criteria]

RESPONSE:
Central Valley Water Board staff has amended the tentative and removed references to "Step 7" in the ammonia RPA discussion (see Fact Sheet section IV.C.3.d.i).

AMERICAN WHITEWATER COMMENTS

AW COMMENT #1
American Whitewater identifies that the tentative permit states that whitewater boaters use the river between "early March and the summer". American Whitewater states that "whitewater boaters use the river whenever flows are high enough to allow it and therefore, American Whitewater is supportive of the permit provisions that require flow-based total coliform standards during the winter period between 15 November and 14 April."

RESPONSE:
The proposed permit, if adopted, would provide flow-based effluent limitations for total coliform organisms for the winter period (16 November through 14 April).

Based on comments received by the public (see General Public comments) and American Whitewater, Central Valley Water Board staff has removed the reference to whitewater kayaking usage occurring between "early spring (March) through summer" (see edits provided below).

> **Fact Sheet Section IV.C.2.a (pg.F-18):**
> Whitewater kayaking is ~~prevalent~~ present ~~starting in the early spring (March) and through summer,~~ year-round, on days when releases from Box Canyon Dam are greater than or equal to approximately ~~200~~ 400 cfs.

AW COMMENT #2
American Whitewater American Whitewater requests that full consideration be given to the fact that the outfall discharges into an area of slack water just above the Brown Trout Rapid, where boaters often pause to scout. They also come into direct contact with the water immediately downstream as they go through the rapid.

RESPONSE:
The proposed permit does consider the proximity of the outfall discharge to whitewater recreation users and the potential of body contact with undiluted wastewater, as such, effluent discharge during periods of whitewater recreation (based on a minimum river low) is subject to disinfected tertiary 2.2 standards.

AW COMMENT #3
American Whitewater requests additional clarification in the permit about where the flow rates were measured from to develop the standard, as it is important to ensure that the flow rates used to set the standards are in line with the station that will be used to establish the daily flow rate for the facility.

RESPONSE:
The minimum flow rate necessary for whitewater recreation is based on the measurement of flow releases at Box Canyon Dam. Box Canyon Dam is located approximately 0.6 mile upstream of the Discharger's outfall and staff is not aware of any major tributary between the Dam and the outfall that would significantly change the flow rate at the outfall compared to that at the Dam. However, if the Discharger does not desire to use Box Canyon Dam flow rates and/or is unable to adequately access the flow rate data from the operator of the Dam, they may establish an in-stream flow measurement station upstream of their outfall (and below the Dam). The minimum recreation flow rate, as provided in the permit, will remain the same for any measurement location between the outfall and the Dam, unless additional information is provided by the Discharger that indicates the flow rate at their measurement station is

significantly greater than the Dam's release rate and a modification in the minimum recreation flow rate is justified.

As a result of AW comment #3, Central Valley Water Board staff has added clarification that the minimum recreation flow rate is correlated to flow rates from Box Canyon Dam releases. In addition, a reopener provision has been added to the proposed permit to allow for a change in minimum recreation flow rates as a result of a change in the location of where receiving water flow is measured (see Section VI.C.1.m). The new reopener language is provided below:

> **m. Minimum Whitewater Recreation Flow Rate**. This Order may be reopened to allow for an adjustment to the minimum whitewater recreation flow rate, if appropriate, as a result of the establishment of an upstream receiving water flow measurement station (located downstream of Box Canyon Dam) and the submittal of information that would justify a modification to the minimum whitewater recreation flow rate.

The new language for the rationale for the reopener is as follows (Fact Sheet section VII.B.1):

> **o. Minimum Whitewater Recreation Flow Rate**. The minimum flow rate necessary for whitewater recreation is based on the measurement of flow releases at Box Canyon Dam. Box Canyon Dam is located approximately 0.6 mile upstream of the Discharger's outfall and the Central Valley Water Board is not aware of any major tributary between the Dam and the outfall that would significantly change the flow rate at the outfall compared to that at the Dam. The Discharger may not desire to use Box Canyon Dam flow rates and/or may be unable to adequately access the flow rate data from the operator of the Dam, therefore they may establish an in-stream flow measurement station upstream of their outfall (and below the Dam). This Order may be reopened to allow for an adjustment to the minimum whitewater recreation flow rate, if appropriate, as a result of the establishment of an upstream receiving water flow measurement station (located downstream of Box Canyon Dam) and the submittal of information that would justify a modification to the minimum whitewater recreation flow rate.

AW COMMENT #4

American Whitewater requests that river flow be measured hourly (at a minimum) instead of the proposed daily measurement. American Whitewater states that a daily

measurement is inadequate in order to know whether the Facility must meet the more stringent disinfection standards.

RESPONSE:
Central Valley Water Board staff does not concur. The ratio of receiving water and effluent flows is not expected to fluctuant significantly during a single day.

AW COMMENT #5
American Whitewater requests the permittee to work with Siskiyou County (operators of Box Canyon Dam) to also make river flow information available to the public in real-time via the internet.

RESPONSE:
The Central Valley Water Board has no jurisdiction over requiring these entities to collaborate. The responsibility of ensuring and demonstrating compliance with the permit conditions falls on the Discharger. If the Discharger is unable to adequately demonstrate compliance with the "flow-dependent" limitations and provisions, as a result of limited real-time access to receiving water flow conditions, then the more stringent limits and provisions will apply for the purpose of compliance determination.

GENERAL PUBLIC COMMENTS (WHITEWATER RECREATION BOATERS)

COMMENT #1 - COLIN KESSLER, WHITEWATER KAYAKER
Mr. Kessler stated the Box Canyon Run of the Upper Sacramento River is a "world-class stretch of water" and contains abundant wildlife. Mr. Kessler is a resident of Mt. Shasta and he boats Box Canyon Run when the water flow is "up." Mr. Kessler estimates that Box Canyon Run is boatable when approximately 450 cfs is being released from Box Canyon Dam. He ran the Box 15 times in 2012 (March through June) and 16 times in 2011 (March through July). He knows of 10 other local boaters that run Box Canyon Run repeatedly, when flows are at the right level – locals run the river after work, weekends, or whenever there is free time. Mr. Kessler states "the number of individuals doing the run is not great, but the number of boats on the run is significant."

RESPONSE:
Central Valley Water Board staff have amended the tentative permit and changed the minimum whitewater recreation flow from 200 cfs to 400 cfs, as measured at Box Canyon Dam. The change is based on comments received by Mr. Kessler and Mr. McQuoid (see below) and from a review of two published whitewater boating guide books and two online resources for boaters. The published references and online

resources have been added to the permit as a footnote in the Fact Sheet Section IV.C.2.a and are provided below:

1. Holbek, Lars and Chuck Stanley. The Best Whitewater in California. 3rd ed. Coloma, CA: Watershed Books, 1998.
2. Cassady, Jim and Fryar Calhoun. California Whitewater. 3rd ed., Berkeley, CA: North Fork Press, 1995.
3. Sacramento River (Box Canyon). Retrieved 28 Aug 2012, from http://www.awetstate.com/SacBox.html.
4. Box Canyon of the Sacramento. Retrieved 28 Aug 2012, from http://www.kayakphoto.com/darinmcquoid/boxcanyonsac.html.

COMMENT #2 - JASON MOWER, WHITEWATER BOATER
Mr. Mower states that he is a boater who loves the Upper Sacramento River. He boats downstream of the Box Canyon Run during the months of March, April, and May. He enjoys the scenic beauty and abundant wildlife.

RESPONSE:
No response/comment.

COMMENT #3 - DANIEL BRASUELL, WHITEWATER KAYAKER
Mr. Brasuell states that the Box Canyon Run is one of the best class IV runs in California. Mr. Brasuell states, "the scenery, quality and sustainment of the whitewater, and proximity to civilization offer a boating experience that while adventurous is also relatively safe. This has made it a staple of the class III-IV boating community for years." Mr. Brasuell states that the Box Canyon Run is boated whenever there is enough flow in the river. Mr. Brasuell has boated the run from January through June.

RESPONSE:
No response/comment.

COMMENT #4 - DARIN McQUOID, WHITEWATER KAYAKER
Mr. McQuoid has spent many years kayaking on the Box Canyon Run of the Upper Sacramento River. Mr. McQuoid states that he notices a smell when passing by the outfall of the treatment plant during the winter period, and that he'd love to see cleaner water over the winter period. Mr. McQuoid states that the run is a fantastic intermediate/advanced run and one of the best runs in California. He states he spends 4 to 8 days a month on the Upper Sacramento River from December to April. Mr. McQuoid states he runs the river when it has 300 cfs or more on the Box Canyon Dam gauge (provided by Siskiyou County).

RESPONSE:
Water Board staff has changed the minimum receiving water flow value necessary for whitewater recreation from 200 cfs to 400 cfs, as measured at Box Canyon Dam. See minimum whitewater recreation flow discussion in comment #1 (Kessler) above.

LATE COMMENTS: SMITH RIVER ALLIANCE

GRANT WERSCHKULL, EXEC DIR., SMITH RIVER ALLIANCE
Mr. Werschkull requests that the Mt. Shasta WWTP discharge be given additional scrutiny due to the significance of the upper Sacramento River as a wild trout fishery and as a world-class whitewater run. Mr. Werschkull states that he has floated and fished this stretch of river and he considers it to be worthy of our highest protection. He states, “it is truly a nationally significant waterway.”

RESPONSE:
No response/comment.

Other Central Valley Water Board Modifications to Tentative Permit

PRE-EXISITING, MORE STRINGENT, TOTAL COLIFORM EFFLUENT LIMITATIONS

An oversight in the current Order (R5-2007-0056) was detected following posting of the tentative permit that has resulted in the need to correct and clarify effluent total coliform limitations for the fall and spring shoulder periods (16 September through 15 November and 15 April through 14 June).

Historically (since 2001) the shoulder period discharge has always been subject to more stringent BOD_5, TSS, and total coliform effluent limits. The current (2007) Order’s final effluent limitations for total coliform are inconsistent with statements made in the 2007 Fact Sheet (which refer to more stringent bacteria requirements for the fall and spring period) and they do not reflect the equivalent bacteria stringency that was applied to the effluent in the prior 2001 permit.

As a result of the inconsistency related to effluent coliform limits in the 2007 Order, the tentative permit did not carry over the historic or “pre-existing” total coliform effluent limitations for the fall and spring period. The pre-existing coliform limits for the fall and spring period are equivalent to disinfected tertiary 2.2 standards and there is no

minimum or maximum flow condition associated with the limits, i.e. the limits are only based on a specific time period. To relax these disinfection limits for certain flow regimes during the spring and fall period, without justification, would violate anti-backsliding provisions contained in CWA sections 402(o).

Changes to the tentative permit total coliform effluent limitations as a result of inclusion of pre-exisiting, more stringent, shoulder period (fall and spring) coliform limitations and changes to the minimum whitewater recreation flow, from 200 cfs to 400 cfs, are as follows:

Section IV.A.1.f and g (pg. 13) (Final Effluent Limitations)

~~g~~**f. Total Coliform Organisms**. ~~During periods of discharge when a receiving water to effluent flow ratio of ≤20:1 exists or the receiving water is ≥200 cfs, effluent total coliform organisms shall not exceed:~~ Effluent total coliform organisms shall not exceed:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
ii. 23 MPN/100 mL, more than once in any 30-day period; and
iii. 240 MPN/100 mL, at any time.

~~f~~**g. Total Coliform Organisms.** ~~During periods of discharge when a receiving water to effluent flow ratio of >20:1 exists and the receiving water is <200 cfs, effluent total coliform shall not exceed:~~
From 16 November through 14 April, during periods of discharge when a receiving water to effluent flow ratio of ≥20:1 exists and the receiving water is <400 cfs, effluent total coliform organisms shall not exceed:

i. 23 MPN/100 mL, more than once in any 7-day period; and
ii. 240 MPN/100 mL, at any time.

Section IV.A.2.b (pg. 13) (Interim Effluent Limitations)

b. Total Coliform Organisms. From 16 November through 14 April, d~~D~~uring periods of discharge when a receiving water to effluent flow ratio of ≤~~≦~~20:1 exists or the receiving water is ≥~~200~~ 400 cfs, effluent total coliform organisms shall not exceed:

i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
ii. 240 MPN/100 mL, at any time.

Section VI.A.4 (pg. 29) (Construction, Operation, and Maintenance Specifications)

a. Turbidity. Effective immediately or upon compliance ~~completion~~ with Special Provision VI.C.6.a, whichever is sooner, ~~during periods of effluent discharge when a receiving water to effluent flow ratio of ≤20:1 exists or the receiving water is ≥200 cfs~~, effluent turbidity shall not exceed:

i. 2 NTU, as a daily average;
ii. 5 NTU, more than 5% of the time within a 24-hour period; and
iii. 10 NTU, at any time.

The effluent turbidity specification shall not apply from 16 November through 14 April when a receiving water to effluent flow ratio of ≥20:1 exists and the receiving water is <400 cfs.

Prior to ~~completion~~ compliance with Special Provision VI.C.6.a., effluent turbidity shall not exceed 5.0 NTU and 10 NTU, as a weekly average and a daily maximum, respectively, from 15 April through 14 June and 16 September through 15 November. This interim specification is consistent with the turbidity effluent limitations contained in the previous Order.

Section VI.A.6 (pg. 34) (Other Special Provisions)

a. During periods of effluent discharge to surface water, with the exception of effluent discharges from 16 November through 14 April when a receiving water to effluent flow ratio of ≥20:1 exists and the receiving water is <400 cfs, all ~~when a receiving water to effluent flow ratio of ≤20:1 exists or the receiving water is ≥200 cfs,~~ wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3 (Title 22), or equivalent, as discussed in the Fact Sheet, Section VII.B.6.a., and in accordance with the compliance schedule in Section VI.C.7.a, below.

Section VI.A.7 (pg.34) Compliance Schedules

a. **Compliance Schedule for Title 22, or Equivalent, Disinfection Requirements**. By **5 years from the effective date of this Order**, wastewater discharged to the Sacramento River (with the exception of effluent discharges from 16 November through 14 April when a receiving water to effluent flow ratio of ≥20:1 exists and the receiving water is <400 cfs) ~~during critical flow periods (≤20:1 dilution or ≥200 cfs in receiving water)~~ shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health

(DPH; formerly the Department of Health Services) reclamation criteria, Title 22 CCR, Division 4, Chapter 3, (Title 22), or equivalent.

Fact Sheet Section IV.C.3.d.vii(c) WQBELS - Please refer to track changes in permit.

Fact Sheet Section IV.E.3, Title 22 (or equivalent) Disinfection Requirements - Please refer to track changes in permit.

REMOVAL OF EFFLUENT LIMITATION

Central Valley Water Board staff has removed the effluent limitation for nitrite. The Discharger's effluent nitrite data did not have reasonable potential to exceed the Primary MCL of 1 mg/L. All references to a nitrite effluent limitation have been removed from the tentative.

WORKPLAN DUE DATE CHANGE

The deadline for the outfall line and diffuser repair work plan to be submitted for EO approval has been changed from 6 months following the adoption of the permit to **12 months** following the adoption of the permit. Also, the outfall line and diffuser repair deadline has been extended from 24 months following EO approval of the workplan to **5 years from the effective date of the Order**. (See Section VI.C.2.g. for changes).

COMPLIANCE SUMMARY CHANGE

The following edits have been made to the compliance summary in the Fact Sheet Section II.D:

Order No. R5-2007-0056 did not contain a discharge specification that limited the period of time or number of days per year to which discharges to the leachfield were allowed, the previous Order only specified an average annual discharge flow limitation of 0.7 mgd. Historically, the leachfield was only used for disposal between 1 May and 15 November (6.5 months), as effluent discharge to surface water was prohibited during this time period . In 2001, reliance on the leachfield was reduced as the surface water discharge prohibition period was reduced to 14 June through 14 September (3 months). Facility improvements in early 2000 allowed the Discharger to produce recycled water for the Mt. Shasta Golf course for use predominately in the summer months and discharge higher quality effluent during the "new" fall and spring surface water discharge periods . ~~However,~~ Order No. R5-2007-0056 references the leachfield discharges only occurring in the summer period and when the golf course does not utilize the recycled water. ~~Further~~In addition, Order No. R5-2007-0056 states the usage of the leachfield had been considerably reduced over the past permit cycle after the Facility began discharging treated recycled water to Mt. Shasta Golf Resort. Order No.

R5-2007-0056 states the annual average number of days treated effluent is pumped to the leachfield is less than 20 days. The Discharger sent treated effluent to the leachfield 222 days over a 12 month period in 2011.

MONITORING AND REPORTING REQUIREMENTS

1. Effluent metals monitoring sample type has been changed from “grab” to “24-hour composite”. Also, time composite sampling has been added to the type of composite allowed in the monitoring and reporting program.

2. A footnote has been added to the upstream receiving water flow monitoring requirement and reads as follows: “Flow to be measured at discharge from Box Canyon Dam from Lake Siskiyou.”

3. The requirement to monitor downstream receiving water flow has been removed and replaced with the requirement to report daily river to effluent dilution ratios between 16 November through 14 April.

4. The requirement to perform dioxin and furan sampling, per Attachment J, has been removed from the permit. The Discharger performed this sampling in 2002 and 2,3,7,8-TCDD congeners were not detected in the discharge. The discharge is classified as a minor. References to dioxin and furan sampling have been removed from the tentative permit. Specifically, Attachment I, Section I.D has been revised as follows:

   D. Dioxin and furan sampling. ~~Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment J. Briefly, dischargers classified as minor must collect and analyze one wet season and one dry season sample.~~ This Order does not require the Discharger to conduct dioxin and furan congener sampling. Monitoring for dioxin and furan congeners has been performed by the Discharger in conjunction with past monitoring requirements. Based on the results of past dioxin and furan sampling these pollutants are not present in the discharge. [Semiannual monitoring for 2,3,7,8-TCDD (Dioxin), as described below and contained in Table I-1, is required in this Order] ~~Pursuant to Section 13267 of the California Water Code, this Order includes a requirement for the Discharger to submit monitoring data for the effluent and receiving water as described in Attachment J.~~