

Central Valley Regional Water Quality Control Board
5/6 December 2013 Board Meeting

Response to Comments
for the
City of Jackson
Wastewater Treatment Plant
Tentative Waste Discharge Requirements,
Tentative Order Amending Time Schedule Order R5-2011-0909, and
Tentative Time Schedule Order

The following are Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit), and the tentative Order amending Time Schedule Order R5-2011-0909 and the tentative Time Schedule Order (TSOs) for the City of Jackson, Wastewater Treatment Plant (Facility), in Amador County.

The tentative NPDES Permit and TSOs were issued for a 30-day public comment period on 23 September 2013 and comments were due 23 October 2013.

The Central Valley Water Board received comments regarding the tentative NPDES Permit by the due date from the following interested parties:

- City of Jackson (City)
- The Oaks Community Association (TOCA)
- Jackson Valley Irrigation District (JVID)
- Sterling Caviar LLC (Sterling)
- Central Valley Clean Water Association (CVCWA)

Changes were made to the tentative NPDES Permit based on public comments received. The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses.

CITY COMMENTS (City)

City Comment No. 1. Turbidity Receiving Water Limitation

The City contends that the current order allows the use of a 1-month averaging period when determining compliance with the receiving water limitations for turbidity. The tentative NPDES Permit does not include this language. The City requests that a 1-month averaging period be allowed in the tentative NPDES Permit for determining compliance with receiving water turbidity limitations.

Response: Central Valley Water Board staff concurs and has made changes to the proposed NPDES Permit, section V.A.17.b Turbidity as shown in underline format below:

- b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs (When wastewater is treated to a tertiary level, including coagulation, a one-month averaging period may be used when determining compliance);

City Comment No. 2. Numeric Receiving Water Limitations

The City contends that the tentative NPDES Permit specifies a receiving water temperature limitation based on monitoring locations RSW-001 and RSW-002. For consistency, specific points and means of assessing compliance with all numeric receiving water limitations should be stated.

Response: Central Valley Water Board staff concurs and has made changes to the proposed NPDES Permit, section V.A and section V.A.17 as shown in part in underline/strikethrough format below:

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Compliance determination for surface water limitations is to be measured or observed at RSW-002, except as specified for individual constituents below (temperature and turbidity). The discharge shall not cause the following in Jackson Creek:

- 17. Turbidity.** Compliance to be determined based on the difference in turbidity at Monitoring Locations RSW-001 and RSW-002.

City Comment No. 3.

The City provides concerns with the tentative NPDES Permit's effluent limitations, continuous monitoring, and reporting for effluent total residual chlorine. Now that the City is moving forward with the implementation of UV light disinfection, in lieu of chlorine disinfection, the City requests that the tentative NPDES Permit contain a note stating that these requirements related to total residual chlorine will no longer be required upon completion and operation of the new UV light disinfection system. The City may utilize chlorine for cleaning of process equipment, or as an emergency backup to the UV system. In this case, the City requests that the requirement for monitoring and reporting only be effective when activities involving chlorine are undertaken.

Response: Central Valley Water Board staff concurs. Staff recommends that the City obtain a UV light disinfection system approved by the Department of Public Health. Regardless, sections of the proposed NPDES Permit, shown bulleted below, were changed as shown in underline format below, and throughout the proposed NPDES permit as appropriate:

- Table E-3 of Attachment E - Monitoring and Reporting Program:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Reporting Level
Chlorine, Total Residual ¹⁴	mg/L	Meter	Continuous	1.9	--

¹⁴ The Discharger shall monitor chlorine residual continuously through 28 February 2018 or until UV system upgrades are fully operational. After which time, the Discharger may request in writing that chlorine residual monitoring be reduced to only periods when chlorine is used at the facility. Approval for this change shall be based on whether or not previous monitoring results show that chlorine residual effluent limits have been met. The monitoring change may only be implemented after the Discharger receives written approval from the Executive Officer.

- Section VI.C.4. Construction, Operation and Maintenance Specifications:

4. Construction, Operation and Maintenance Specifications

b. Ultraviolet (UV) Disinfection System Operating Specifications. The Discharger shall notify the Central Valley Water Board at least 30 days prior to start-up of the UV disinfection system. Once in operation, the Discharger shall operate the UV disinfection system to provide a minimum UV dose per channel of 100 millijoules per square centimeter (mJ/cm²) at peak daily flow, and shall maintain an adequate dose for disinfection while discharging to Jackson Creek, unless otherwise approved by the Executive Officer or California Department of Public Health. The Discharger shall meet the following specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:

- i. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, and turbidity.
- ii. The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU, at any time.
- iii. The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

- iv. The quartz sleeves and cleaning system components must be visually inspected per the manufacturer’s operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.
- v. The lamp sleeves must be cleaned periodically as necessary to meet the requirements.
- vi. Lamps must be replaced per the manufacturer’s operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
- vii. The Facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

- Section IX.C of Attachment E - Monitoring and Reporting Program:

C. Ultraviolet Light (UV) Disinfection System

1. Monitoring Location UVS-001

The Discharger shall monitor the UV disinfection system at UVS-001 as follows:

Table E-7. Ultraviolet Light Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous ¹
Turbidity	NTU	Meter ²	Continuous ^{1,3}
Number of UV banks in operation	Number	Meter	Continuous ¹
UV Transmittance	Percent (%)	Meter	Continuous ¹
UV Dose ³	MW-sec/cm ²	Calculated	Continuous ¹
Total Coliform Organisms	MPN/100 mL	Grab	1/Day

¹ For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

² The turbidity meter shall be stationed immediately after the filters, prior to the UV disinfection process.

³ Report daily average and maximum turbidity.

⁴ Report daily minimum hourly UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.

THE OAKS COMMUNITY ASSOCIATION (TOCA)

TOCA Comment No. 1.

The Oaks Community Association currently obtains raw water from Jackson Valley Irrigation District, via Lake Amador. The raw water delivered from Lake Amador is treated by TOCA using a level 4 ozone drinking water treatment plant. As such they are concerned with the quality of the water in Lake Amador.

RESPONSE: The comment has been noted by the Central Valley Water Board. The proposed NPDES Permit has been modified to implement the requirement for 20:1 dilution of wastewater in Lake Amador to protect those using the water as a potable source. This prohibition would remain in effect until all users have been transferred to another potable water source. Jackson Valley Irrigation District is currently working with the California Department of Public Health to transfer users from Lake Amador source water to Pardee Reservoir water (JVID water project). In addition, the proposed NPDES Permit and TSOs require that the City achieve full equivalent to tertiary treatment. This will ensure the highest effluent quality for the protection of public health and the environment. In addition, the City is in the process of implementing upgrades that will further reduce the discharge of nutrients from current levels (proposed monthly NPDES Permit limit for nitrate plus nitrite is 10 mg/L; current discharge level is 27.1 mg/L [2012 average]). Reduction in nutrient discharge from current levels will work to benefit Lake Amador water quality. Finally, the effluent limitations in the proposed NPDES Permit are end-of-pipe limitations requiring the City to achieve water quality objectives at the point of discharge with no allowed dilution. These requirements are fully protective of the beneficial uses of Jackson Creek and Lake Amador. See also response to TOCA Comment No. 2.

TOCA Comment No. 2.

The Oaks Community Association posed the question of what happens to the City of Jackson's project and/or the permit if funding to complete phase two of the Jackson Valley Irrigation District (JVID) water project is not attained by JVID (project is to remove potable water users from Lake Amador source water to Mokelumne River, or Pardee Reservoir, source water).

RESPONSE: The proposed NPDES Permit contains a prohibition for discharging tertiary-level treated effluent "into Jackson Creek in amounts that cause the downstream Lake Amador water to exceed greater than five percent volume of wastewater in Lake Amador" (20:1 dilution). This prohibition is in effect until JVID's water project is completed. For clarification, Prohibition III.E and Provision VI.C.1.g. were changed in the proposed NPDES Permit, as shown in underline/strikethrough format below, and throughout the proposed NPDES permit as appropriate:

III. DISCHARGE PROHIBITIONS

E. ~~Effective immediately Until 1 January 2017 completion of Jackson Valley Irrigation District's (JVID) Pardee Reservoir drinking water replacement project~~, the Discharger is prohibited from discharging wastewater into Jackson Creek in amounts that cause the downstream Lake Amador water to exceed greater than five percent volume of wastewater in Lake Amador (one part wastewater in 20 parts of lake water, or 20:1 dilution).

VI. PROVISIONS

C. Special Provisions

1. Reopener Provisions

g. **20:1 Dilution in Lake Amador (Prohibition III.E).** This prohibition is based on California Department of Public Health's (CDPH) recommendation that discharges from wastewater treatment plants to municipal water supplies maintain a minimum of 20:1 dilution to ensure the protection of the downstream domestic beneficial use of Jackson Creek and public health. Jackson Valley Irrigation District's drinking water replacement projects that will provide a primary drinking water source supply from Pardee Reservoir is projected to be completed by 31 December 2016. If this project is not completed Once CDPH determines and provides written notification to the Central Valley Water Board that the 20:1 dilution for the disinfected tertiary-level treated effluent discharge is no longer necessary, and Lake Amador remains the primary drinking water source, this Order may be reopened to remove extend the time frame for Prohibition III.E (20:1 dilution prohibition in Lake Amador).

TOCA Comment No. 3.

The Oaks Community Association posed the question of whether the City of Jackson will be allowed to increase the discharge of effluent. Or, what happens if the City is ready to increase the effluent discharge before the JVID water project is operational. The Oaks Community Association further requested placing restrictions on the permit which would not allow additional discharge until the JVID water project is complete.

RESPONSE: The proposed NPDES Permit retains the 0.71 million gallons per day (MGD) average dry weather flow limit from the City's existing NPDES Permit, Order R5-2007-0133-01; therefore, the Discharger is not permitted to discharge any additional flow beyond the 0.71 MGD limitation. The proposed NPDES permit maintains this average dry weather flow limit for five years, which is several additional years beyond the estimated completion date for the new drinking water

source supply for the Oaks Community. See also response to TOCA Comment No. 2.

TOCA Comment No. 4.

The Oaks Community Association comments that JVID has identified Lake Amador as an emergency secondary municipal water source once the second phase of the water project is completed; therefore, Lake Amador should continue as a municipal water source and should be carefully regulated.

Response: The Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins established Jackson Creek as a municipal and domestic supply (MUN). With this designation all NPDES permitted discharges to Jackson Creek must comply with the MUN beneficial use. The proposed NPDES Permit's final effluent limitations are based on protecting the MUN beneficial use as well as other beneficial uses established by the Basin Plan for Jackson Creek.

JACKSON VALLEY IRRIGATION DISTRICT (JVID)

Request for Designated Party Status. Jackson Valley Irrigation District requested designated party status for the Central Valley Water Board hearing scheduled for 5 and 6 December 2013 with regard to the proposed renewal of the NPDES Permit for the City of Jackson, Wastewater Treatment Plant. The commenter will be granted designated party status for the subject hearing.

JVID General Comment No. 1. (Page 2)

JVID states that the proposed elimination of the 20:1 dilution provision after the two major users (Lake Amador Resort and Oaks Mobile Home Park) are taken off the lake water source still leaves approximately 81 homes still connected to the water source. The impact on the 81 homeowners will be magnified by the elimination of the dilution requirement and will certainly be exposed to greater concentration of wastewater above the 5% existing threshold.

Response: See Staff Response to TOCA Comment No. 2 above

JVID General Comment No. 2. (Page 2)

The elimination of the 20:1 dilution provision will subject the Lake Amador Resort and Sterling Caviar Company fish hatcheries to future impacts related to the increased concentration of wastewater components that studies have determined to be harmful to aquatic life.

Response: Staff does not fully concur with the comment; mainly because the proposed NPDES Permit includes limitations that will reduce concentrations of nutrients and other constituents from current discharge levels. Regardless, the proposed NPDES Permit has been modified to implement the requirement for 20:1 dilution of wastewater in Lake Amador to protect those using the water as a potable source. In this comment, JVID references studies noted in an April 2013 report (*White Paper Prepared On Behalf of The City of Jackson*, Stantec); but the studies were not provided. The April 2013 report further states that the studies were conducted “in somewhat unique environmental settings, e.g. carp in the Las Vegas arm of Lake Mead receiving Las Vegas effluent, and white suckers living in the plume from an effluent discharge to Boulder Creek in Colorado.” However, JVID or Sterling Caviar Company has not provided how these environmental settings, and thus the studies, would apply to this situation.

For this site, Department of Public Health recommended a 20:1 dilution (one part wastewater in 20 parts of Lake Amador water) for protection of Lake Amador water as a domestic supply source. Therefore, the proposed NPDES Permit requires 20:1 dilution until JVID customers have received a new drinking water source. As a policy, the Department of Public Health recommends 20:1 dilution only for discharges of secondary-level treated wastewater into surface waters for protection of public health associated with using the water for recreation. Furthermore, Federal regulations require that permits include requirements based on Secondary Treatment Standards, which establish monthly and weekly standards for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) at 30 mg/L and 45 mg/L, respectively, and Maximum Daily limits at 60 mg/L (30/45/60). The proposed NPDES Permit restricts the City’s discharge to tertiary-level standards of 10/15/20 instead of the less stringent secondary treatment level at 30/45/60. Additionally, the proposed NPDES Permit contains ammonia limitations based on the National Ambient Water Quality Criteria for protection of freshwater aquatic life, including salmonids and early fish life stages, and contains nitrate-plus-nitrite limits that will lead to reductions in the nutrients (e.g., ammonia and nitrate+nitrite) discharged to Jackson Creek and Lake Amador from current levels. In addition, the proposed NPDES Permit contains effluent limitations to control discharges of constituents to Jackson Creek for protection and enhancement of beneficial uses, including water contact recreation (REC-1), Non-contact water recreation (REC-2), Warm freshwater habitat (WARM), Cold freshwater habitat (COLD), Migration of aquatic organisms, warm and cold (MIGR), and Spawning, reproduction, and/or early development, warm (SPWN). However, some waste discharge requirements in the proposed NPDES Permit are associated with the City’s WWTP upgrades. Thus the City cannot immediately comply until the upgraded treatment system is operational, which is projected to be 1 March 2018.

JVID General Comment No. 3. (Page 2)

JVID contends the elimination of the 20:1 dilution provision may have detrimental impacts on farming operations within JVID in the future related to the growing of crops

intended for direct human consumption when irrigated with increasing concentrations of treated wastewater.

Response: Staff does not concur. The proposed NPDES Permit contains requirements that the discharge meet the criteria described in California Code of Regulations (CCR) Water Recycling Criteria for food crop irrigation (CCR, Title 22, Division 4, Chapter 3; or Title 22). Title 22, Article 3, §60304 states that disinfected tertiary recycled water can be used for, in part, (a) “(1) Food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop.”

JVID General Comment No. 4. (Page 2)

JVID contends the change in the 20:1 dilution ratio compliance determination from monthly to annual averaging will mask the exposure to wastewater effluent and its concentration in Lake Amador.

Response: Staff does not concur. The City’s existing NPDES Permit, Order R5-2007-0133-01, was to determine compliance with the 20:1 dilution ratio when in effect by comparing the previous month volume of water in Lake Amador to the City’s daily effluent discharge into Jackson Creek. Using this compliance determination, the City’s daily effluent discharges in the year 2012 never exceed 0.05% volume in Lake Amador. Dissimilarly, the proposed NPDES Permit uses the harmonic mean of annual inflows into Lake Amador (excluding the City’s effluent discharge) to conservatively estimate dilution in Lake Amador. Using this compliance determination, the City’s 2012 year’s effluent average dry weather flow (i.e. $[(\text{July} + \text{August} + \text{September})/92] * 365$) was 1.8% of the inflow into Lake Amador for that year, which is more conservative than the monthly determination in the existing NPDES Permit.

The 20:1 dilution in Lake Amador prohibition is based on California Department of Public Health’s (CDPH) recommendation that discharges from wastewater treatment plants to municipal water supplies maintain a minimum of 20:1 dilution to ensure the protection of the downstream domestic beneficial use. CDPH staff has indicated in an email to Board Staff (from Carl Carlucci, CDPH, to Adam Laputz, Staff; 14 November 2013), that the proposed NPDES Permit’s 20:1 Compliance Determination language is acceptable.

JVID Specific Comment No. 1. (Page 2)

JVID contends that the elimination of the 20:1 dilution provision in the proposed NPDES Permit does not coincide with the actual timelines for JVID’s water supply project because the first and second phases will provide water to the two largest users (Lake Amador Resort and the Oaks Mobile Home Park) but a third phase is required to extend

a pipeline to the 80 or so households now under the mandatory bottled water program. Therefore, the Central Valley Water Board should not approve the change until after JVID has removed all homes from using raw Lake Amador water for domestic use.

Response: See the Staff Response to TOCA Comment No. 2 above.

JVID Specific Comment No. 2. (Page 3)

JVID is opposed to the elimination of the 20:1 dilution provision at any time because they believe that eliminating the provision will harm the long term environmental health of Lake Amador and diminish its viability for recreational and aquaculture uses.

Response: See the response to JVID General Comment No. 2 above.

JVID Specific Comment No. 3. (Page 4)

JVID contends that the 20:1 dilution compliance point should be measured daily at the point of discharge and the discharge should only occur when 20:1 dilution at the discharge point is achievable. JVID believes this would force the Discharger to potentially construct a storage and/or land discharge system that was previously planned.

Response: Staff does not concur. The 20:1 dilution prohibition is required for use of Lake Amador water as a municipal source (as recommended by CDPH). As such, compliance with the prohibition needs to be determined based on an estimation of the amount of wastewater and diluting water entering the lake. See also response to JVID General Comment No. 4.

JVID Specific Comment No. 4. (Page 4)

JVID requests that the proposed NPDES Permit adoption be delayed until the Discharger performs a Beneficial Use Attainment Study (Study) of Lake Amador to determine the impact of the Discharger's present and planned discharges into Jackson Creek. JVID contends their suggested Study requirement be completed prior to any modification of the 20:1 dilution provision and JVID should be given input regarding the consultants hired by the Discharger and JVID should have a direct role in overseeing the work of consultants, including the right to review and approve the Study document prior to completion.

Response: The proposed NPDES Permit has been modified to implement the requirement for 20:1 dilution of wastewater in Lake Amador to protect those using the water as a potable source. Because the 20:1 prohibition is continued in the proposed NPDES Permit, immediate action in regards to requiring the commenter's

proposed study is premature. If the NPDES Permit is reopened to remove the prohibition, public comments will be considered as part of the action. The appropriate time to consider the need for this study would be during Board consideration of the removal of the 20:1 prohibition. It is also important to consider that the City will be implementing upgrades that will reduce nutrient discharge from current levels. Staff notes that as more information is collected in this next permit term, the Executive Officer may at any time require such a study under California Water Code section 13267.

Commenters have expressed that the lake is experiencing algal blooms and eutrophication; it is unclear what is causing these problems. At this time, the Board does not have evidence indicating that the City's wastewater discharge is causing impairment of Jackson Creek or Lake Amador. The City of Jackson has conducted a Beneficial Use Attainment Study for Jackson Creek (July 2009). The study methods were developed in close coordination with the California Department of Fish and Game. One of the findings of the study provides that "all Basin Plan beneficial uses were met under current conditions." Jackson Creek and Lake Amador share the same beneficial uses; therefore it is reasonable to assume that the wastewater entering Lake Amador via Jackson Creek should not lead to impairment of beneficial uses in Lake Amador. This is an especially reasonable assumption when considering that there is little to no dilution in Jackson Creek, while Lake Amador has dilution provided by other flows entering the lake (e.g., for 2012, wastewater discharge is 1.8% of flows entering Lake Amador). The proposed NPDES Permit requires reduction of nutrient concentrations associated with the City's WWTP upgrades. These reduced concentrations will lead to higher quality of water in Jackson Creek and Lake Amador.

Attachment B: JVID Specific Comment No. 5. (Page 4)

JVID contends it will never totally eliminate its reliance on Lake Amador as a source water for domestic water use because of JVID's restricted water right on the Mokelumne River. JVID is concerned that in extremely dry years they may not receive any water from Lake Pardee and must rely on Lake Amador water as a domestic water source. Therefore, they want to maintain the 20:1 dilution provision indefinitely.

Response: See the Staff Response to TOCA Comment No. 4 above. The proposed NPDES Permit has been modified to implement the requirement for 20:1 dilution of wastewater in Lake Amador to protect those using the water as a potable source. The proposed NPDES Permit contains a reopener provision that will allow removal of the prohibition upon recommendation by the California Department of Public Health. Because the prohibition has been included, and removal requires reopening the permit, this comment is mute. If the permit is reopened to remove the prohibition, public comments will be considered as part of the action. The appropriate time to address this comment would be during board consideration of the removal of the 20:1 prohibition.

Attachment B: JVID District Engineer Comment No. 1.

JVID comments that in the July 2012 Draft Environmental Impact Report for the City of Jackson's WWTP, Stantec's report of December 2011, it very clearly includes effluent storage and land disposal on Busi Ranch as part of the proposed project for the City of Jackson. Nothing would have led JVID to think anything had varied from this up until Stantec issued their "white paper" of April 2013 which concluded that year round creek discharge would be ok, primarily due to JVID's phase 2 water distribution project. Given this unsuspected chain of events, JVID currently has to take a position which protects their long term interests in the health of Lake Amador and the many activities and uses which it supports.

Response: The comment has been noted by the Central Valley Water Board. See response to JVID Specific Comment Nos. 4 and 5, and TOCA Comment No. 1.

Attachment B: JVID District Engineer Comment No. 2.

JVID is concerned that the removal of the 20:1 dilution provision after completion of the phase 2 project will not get all of their customers off of raw Lake Amador water. Further, JVID contends that holding to the 5% rule, regardless of why it was originally implemented, is JVID's only real way of having any control over the long term sustainability and health of Lake Amador and the activities it supports.

Response: See the Staff Response to JVID Specific Comment No. 5. See also TOCA Comment Nos. 1 and 2 and JVID General Comments Nos. 2 and 3 above.

JVID District Engineer Comment No. 3.

JVID requests that the proposed NPDES Permit adoption be delayed until the Discharger performs a Beneficial Use Attainment Study (Study) of Lake Amador to determine the impact of the Discharger's present and planned discharges into Jackson Creek. JVID contends their suggested Study requirement be completed prior to any modification of the 20:1 dilution provision and JVID should be given input regarding the consultants hired by the Discharger and JVID should have a direct role in overseeing the work of consultants, including the right to review and approve the Study document prior to completion.

Response: See the Staff Response to JVID Specific Comment No. 4 above.

Attachment B: JVID District Engineer Comment No. 4.

JVID contends Order R5-2007-0133 stated the Discharger is prohibited from discharging to Jackson Creek when Lake Amador is greater than 5% effluent. This prohibition gave JVID the very clear impression that the Discharger would be forced within 5 years to diminish discharges to Jackson Creek. This appears to not be happening, as new WDRs are vague to the point (see JVID District Engineer Comment No. 5) that 5% guidance is now being evaluated on an annual basis. The 5% guidance should be on a monthly basis.

Response: See the response to JVID General Comment No. 4 above.

Attachment B: JVID District Engineer Comment No. 5.

JVID contends Order R5-2007-0133 stated in section VII.I that compliance with 5% is on a monthly basis. This has been updated in the current proposed WDRs to vaguely state *“the Discharger is prohibited from discharging wastewater into Jackson Creek in amounts that cause the downstream Lake Amador water to exceed greater than five percent volume of wastewater in Lake Amador”*.

Response: See Staff Response to JVID General Comment No. 4. Staff concurs in part. The current NPDES Permit, Order R5-2007-0133-01, section VII.I states that “Compliance with provision III.E [20:1 Dilution of Wastewater in Lake Amador] will be determined by comparing the previous calendar month estimated volume of Lake Amador to the average daily flow of effluent for each day from the Facility to Jackson Creek [emphasis added].” It further states “The daily discharge of effluent (by volume), that exceeds five percent of the previous calendar month estimated volume of Lake Amador is prohibited.” Thus, the daily effluent discharge is prohibited from exceeding 5% the volume of Lake Amador. As shown previously in staff Response to JVID General Comment No. 4, the effluent daily discharge never exceeded 0.05% of the volume of Lake Amador. Staff does not concur that the proposed language has been changed, or is vague. The prohibition language remains the same: *“the Discharger is prohibited from discharging wastewater into Jackson Creek in amounts that cause the downstream Lake Amador water to exceed greater than five percent volume of wastewater in Lake Amador (one part wastewater in 20 parts of Lake water, or 20:1 dilution).”* The only difference is when the 20:1 dilution is in effect; the prohibition in the current NPDES Permit, Order R5-2007-0133-01, is effective 1 March 2015; whereas, the prohibition is effective immediately in the proposed NPDES Permit.

Attachment B: JVID District Engineer Comment No. 6.

JVID contends that other foothill communities (Angels Camp, San Andreas) WDRs evaluate 20:1 guidance on a daily basis at the point of discharge. Obviously in the Discharger's case this would be impossible without effluent storage at land disposal facilities. These facilities appeared to be included within Stantec's December 2011 Facilities Description, but have since been discarded. Most foothill communities have long been required to incorporate effluent storage/land disposal in periods not conducive to surface discharge in order to protect the many downstream uses below the foothill communities.

Response: Central Valley Water Board staff does not concur. Both the San Andreas Sanitation District's and the City of Angels' NPDES permits contain the 20:1 guidance for different reasons than the City of Jackson's permit. The San Andreas Sanitation District's Facility produces secondary treated wastewater, unlike the City of Jackson's Facility which currently produces equivalent to Title 22 tertiary treated wastewater. Since San Andreas produces secondary wastewater they are required to have at minimum 20:1 dilution at the point of discharge to meet REC-1 beneficial use requirements. Once a facility produces tertiary treated effluent the 20:1 dilution requirement is no longer applicable at the discharge point where a receiving water has a REC-1 beneficial use designation. (see also Staff Response to JVID General Comment No. 2)

The City of Angels produces tertiary treated effluent; however, in their CEQA document (negative declaration) they indicated that the Facility would be discharging tertiary treated effluent with 20:1 dilution (emphasis added). Therefore, the City of Angels put the 20:1 dilution requirement on themselves; it was not a regulatory requirement that they were to meet. But because the City of Angels discharges only when there is 20:1 dilution in the receiving water, the City of Angels permit contains less stringent limits based on dilution credits; whereas, the City of Jackson is required to meet end-of-pipe water quality standards and therefore the proposed NPDES Permit is protective of downstream water quality and beneficial uses. (see also Staff Response to JVID Specific Comment No. 3)

Attachment B: JVID District Engineer Comment No. 7.

JVID contends that Table 1 on page 4 of Stantec's April 2013 "White Paper", there are 3 out of 10 years where their estimated percent annual volume of effluent (0.71 MGD) exceeded the average annual lake volume, and it was close in 2 others. It would appear to say that Jackson cannot meet the 20:1 guidance a significant portion of the time. Undoubtedly this would be worse on a monthly basis as originally required in Order R5-2007-0133.

Response: See Staff Response to JVID General Comment No. 4.

Attachment B: JVID District Engineer Comment No. 8.

JVID contends that as noted in Joseph Spano's letter to the Regional Board on 13 July 2007 "...there are many chemicals, such as pharmaceuticals, endocrine disruptors, and personal care products that pass through both wastewater treatment processes and surface water treatment processes without being removed." Nothing has changed with respect to the above point made by Mr. Spano. By keeping the 5% guidance intact here, it will help minimize these potential impacts due to these chemicals which reach Lake Amador.

Response: The proposed NPDES Permit has been revised to retain the 20:1 dilution until Lake Amador water is no longer the primary drinking water source for residents. See also response to JVID Specific Comment No. 5.

Attachment B: JVID District Engineer Comment No. 9.

JVID contends that for 2012, using Stantec's Table 1 in their April 2013 report but on a monthly basis, the lake would have been over 5% effluent for 6 out of 12 months, and would have been over on 9 of 12 months under average dry weather flows of 0.71 mgd. Also of note, the calculations assume that the lake is completely mixed, which it is most certainly not. This fact would lead to the conclusion that there could be many portions of the lake that are well above the percentages shown in the spreadsheet. Under the existing WDRs the above would have been serious violations. Should it be concluded at some point that the 5% guidance (or something similar) be maintained, clearly it needs to be on a monthly basis.

Response: See Staff Response to JVID General Comment No. 4.

Attachment B: JVID District Engineer Comment No. 10.

JVID comments that there are numerous studies in other locations that have examined the long term effects of treated effluent on fresh water streams and lakes. These studies may or may not have bearing on the Lake Amador situation. Some studies were with respect to what Joe Spano made reference to, chemicals such as the synthetic estrogen in birth control pills. One Canadian study from 2007 states "*Over the past decade, there have been a number of studies in North America and Europe showing skewed sexual development in aquatic life living near outfalls from sewage plants. This study is the first to show that exposure to drugs not only changes sexual characteristics, but it can also destroy fish populations.*" There are too many other studies to mention here. Again, it would be pointless to try and debate this or any other issue with respect to what the Discharger's WWTP may or may not be contributing to the lake, and the possible effects on the lake, but there would seem to be more than enough documentation to warrant a study as outlined in JVID District Engineer

Comment No. 2 above. The future health of the lake and its associated industries (ag, fish, farms, recreation, etc.) are key to the future economic sustainability and viability of JVID.

Response: See the Staff Response to JVID Specific Comment No. 4, JVID General Comments Nos. 2 and 3, and JVID District Engineer Comment No. 2 above.

Attachment D: JVID Member Comment No. 1.

JVID Members comment what is the timeframe and parameters of the timeframe before the City of Jackson is able to discharge above the current 20:1 dilution requirement?

Response: See the response to TOCA Comment No. 2 above.

Attachment D: JVID Member Comment No. 2.

JVID Members comment who, how and why was the 20:1 dilution requirement lifted?

Response: The proposed NPDES Permit has been revised to retain the 20:1 dilution until Lake Amador water is no longer the primary drinking water source for residents. Order R5-2007-0133-01 Discharge Prohibition III.E, which prohibits the Discharger from discharging into Jackson Creek that cause Lake Amador to exceed greater than five percent volume of wastewater in Lake Amador, is not in effect until 1 March 2015. Therefore, the 20:1 dilution requirement was never fully in effect.

Attachment D: JVID Member Comment No. 3.

JVID Members comment when specifically was the 20:1 requirement lifted or will be lifted and why was JVID not notified formally of these new conditions?

Response: See the response to JVID Member Comment No. 3 above.

Attachment D: JVID Member Comment No. 4.

JVID Members comment what is the process treatment for the new plant? Chemical? UV Disinfection? Other?

Response: The City of Jackson has proposed the following upgrades planned for completion by 1 March 2018.

- Modifications to chemical addition to improve nitrification/denitrification process pH control,

- Denitrification improvements including addition of anoxic basins and related appurtenances,
- Improvements to the existing oxidation ditch aeration system,
- RAS pump station improvements to accommodate denitrification and maintain current system capacity,
- Coagulation/flocculation improvements to facilitate enhanced filtration, and
- UV disinfection facilities to replace chlorination/dechlorination.

Attachment D: JVID Member Comment No. 5.

JVID Members question whether there is a failsafe to the treatment process to assure that all effluent is properly treated?

Response: The proposed NPDES Permit contains waste discharge requirements to protect downstream water quality and beneficial uses. The proposed NPDES Permit also contains a Monitoring and Reporting program (Attachment E) to monitor the discharge and to determine compliance with the NPDES Permit. The City reports the analytical monitoring results to California Integrated Water Quality System (CIWQS) and the Board's Compliance and Enforcement staff regularly evaluate the data to determine compliance with the NPDES Permit.

Attachment D: JVID Member Comment No. 6.

JVID Members comment on what is the proposed increase in volume versus what is currently being discharged?

Response: See the response to TOCA Comment No. 3 above.

Attachment D: JVID Member Comment No. 7.

JVID Members comment on how continued discharge and possible increased discharge will affect Lake Amador specific to farming, recreation, environmental, fishing, aqua-farming, industrial or any other activities associated with JVID that depend on the quality of water from Lake Amador?

Response: Note that the proposed NPDES Permit does not increase the wastewater discharge flow limit from the previous permit. See the Staff Response to TOCA Comment No. 4 and JVID General Comments Nos. 2 and 3 above. See also Staff Response to JVID Specific Comment No. 4.

Attachment D: JVID Member Comment No. 8.

JVID Members comment JVID currently has listed with the CDPH, Lake Amador as a secondary source for raw water used for treatment for the newly installed water treatment plant in circumstances when JVID is not able to access Lake Pardee water, specifically in a drought scenario. How does the potential increase in discharge affect the status of using Lake Amador as a secondary source for water treatment?

Response: See the Staff Responses to JVID Specific Comment No. 5 and TOCA Comment No. 4 above.

Attachment D: JVID Member Comment No. 9.

JVID Members question why the City of Jackson is being treated differently than other foothill communities that discharge treated effluent into bodies of water that are used for primarily the same purposes (raw domestic/irrigation)? For example, the nearby city of Angels Camp that discharges into New Melones Reservoir is known to have much more severe regulations and dilution requirements for discharge.

Response: See the Staff Response to JVID District Engineer Comment No. 6 above.

Attachment E: Lake Amador Resort Comment No. 1

Lake Amador Resort requests that the Central Valley Water Board launch a full scale investigation into the wastewater release procedures in the City of Jackson and investigate the outlying homes and businesses that allow their wastewaters to bypass the City's treatment program. The Lake Amador Resort contends the City's facilities are too small to handle the influx of new usage.

Response: The existing NPDES Permit, Order R5-2007-0133-01, and the proposed NPDES Permit, requires the City of Jackson to monitor the effluent for approximately 180 constituents of concern and water quality parameters. The City of Jackson's analytical monitoring results are reported to California Integrated Water Quality System (CIWQS) and regularly evaluated by the Board's Compliance and Enforcement staff to determine compliance. These analytical monitoring results were also used to determine if the discharge may cause, have a reasonable potential to cause, or contribute to an excursion above any applicable water quality standard or objective (referred to as RPA). The results of the RPA were used to prescribe the waste discharge requirements in the proposed NPDES Permit. In addition, the Board's Compliance and Enforcement staff routinely conduct site inspections of the City's Facility and records to ensure that the treatment systems are properly operated and maintained. The Compliance and Enforcement Unit has not received notification of illegal discharges of wastewaters; however, if illegal wastewater discharges are suspected, or known, contact the Board's Compliance

and Enforcement Program Manager directly at wwyels@waterboards.ca.gov so that staff may investigate the concern.

See Staff Response to TOCA Comment No. 3 above in regards to the City's facilities being too small to handle the influx of new usage.

STERLING CAVIAR LLC (STERLING)

Request for Designated Party Status. Sterling Caviar LLC requested designated party status for the Central Valley Water Board hearing scheduled for 5 and 6 December 2013 with regard to the proposed renewal of the NPDES Permit for the City of Jackson, Wastewater Treatment Plant. The commenter will be granted designated party status for the subject hearing.

Sterling Comment No. 1.

Sterling contends that increased amounts of treated sewage, especially containing nitrates or phosphates are allowed as a percentage of Lake Amador's volume, will increase the eutrophication of Lake Amador creating an ever increasing likelihood of problems for all the fish farms that pull water from the lake during fall turnover. An additional consequence of increased phytoplankton population or blooms, is that they have the ability to pull oxygen out of the water, thus leading to mortality in the fish population in the lake itself, specifically the trout which are more susceptible to low dissolved oxygen levels than warm water fish. With Lake Amador being a highly prized trout fishing lake, anything that disrupts the trout population in the lake could be considered a detrimental consequence.

Response: See Staff Response to JVID General Comment No. 2.

Sterling Comment No. 2.

Sterling contends that any increase in the percentage of water that Jackson WWTP can discharge into Lake Amador, if it contains any level of heavy metals or pesticides, that this would bio-accumulate in their females destined for caviar production and restrict their ability to meet European Union (EU) food safety limits on their caviar. This is a serious concern to Sterling because almost half their sales yearly are thru the EU currently and likely to increase over time.

Response: Central Valley Water Board does not concur. The proposed NPDES Permit retains the 0.71 million gallons per day (MGD) average dry weather flow limit of the previous permit; therefore, the Discharger is not permitted to discharge any additional flow beyond the 0.71 MGD already permitted. Additionally, the proposed NPDES Permit contains effluent limits to protect aquatic life where the discharge demonstrated reasonable potential of causing an exceedance in the receiving water

(e.g. Jackson Creek or Lake Amador). All other constituents of concern analytical monitoring results indicated that the discharge contained concentrations below applicable water quality standards or objectives, including pesticides and mercury that bio-accumulates in aquatic life. See also Staff Response to JVID General Comment No. 2.

Sterling Comment No. 3.

Sterling contends that they have had some problems with Geosmin taste, an earthy muddy taste in their caviar from fish raised at their Lake Amador site. An increase in nutrients into Lake Amador from the Jackson WWTP could further disrupt the ecosystem and increase the likelihood of undesirable blooms which would have catastrophic consequences on their ability to sell their caviar as a premium product. Additionally, fish caught out of Lake Amador would also have an increase likelihood of being tainted with Geosmin, which would impact recreational fishing opportunities on the lake for the highly prized trout in the lake.

Response: See Staff Response to JVID General Comments Nos. 2 and 3. The commenter links the threat of increased geosmin taste with increased nutrient levels in the lake. As provided in responses to JVID General Comment Nos. 2 and 3, the proposed NPDES Permit sets limitations that will reduce nutrient discharges from current levels (upon completion of facility upgrades). Also, the proposed NPDES Permit immediately implements the 20:1 dilution prohibition. Therefore, if anything, the proposed NPDES Permit acts to reduce overall nutrients discharged from the Facility, thereby reducing the threat of any potential geosmin taste caused by the discharge. However, Staff notes that it is unclear whether the City's discharge is causing or contributing to the geosmin taste concern.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA)

CVCWA Comment No. 1.

CVCWA contends that the Fact Sheet of the tentative NPDES Permit includes new findings that water quality based effluent limitations for BOD and TSS are necessary to protect aquatic life, but provides no evidence to support such a statement. CVCWA requests that the findings for BOD and TSS be revised to mirror the findings in the NPDES Permit (Order R5-2007-0133) that the BOD and TSS limitations are necessary to ensure proper operation of a tertiary treatment process.

Response: Central Valley Water Board staff concurs and has removed the findings for BOD and TSS in the proposed NPDES Permit (section IV.C.3.d.ii.) and made changes to section vi. Pathogens of the Fact Sheet, as shown in part in underline/strikethrough format below:

vi. Pathogens

(a) WQBELs. ...

This Order contains effluent limitations for BOD₅, total coliform organisms, and TSS, and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code Section 13241 in establishing these requirements.

Final WQBELs for BOD₅ and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires compliance with AMELs for BOD₅ and TSS of 10 mg/L and compliance with average weekly effluent limitations of 15 mg/L, which is based on the technical capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD₅ and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

(d) Plant Performance and Attainability. The Discharger is unable to consistently comply with the final effluent limitations for total coliform organisms. TSO R5-2011-0909 provides a compliance schedule to achieve compliance with the final effluent limitations for total coliform organisms by 1 March 2015. TSO R5-2011-0909 was amended to reference this Order. This Order contains effluent limitations for BOD₅ and TSS that the Discharger was able to meet over the previous permit term. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations for BOD₅ and TSS is feasible.

CVCWA Comment No. 2.

CVCWA contends that they are concerned that the prohibition language in Section III.E may create compliance problems for the City during drought years or in the event the proposed JVID drinking water replacement projects are not completed in 2016. The California Department of Health email cited on Page F-4 of the Fact Sheet states that: "Given that the City of Jackson's current wastewater treatment plant provides disinfected tertiary treatment and the City usually provides 20:1 dilution in Lake Amador, our Department believes that adequate public health protection is being provided until

both domestic water supply intakes are removed from Lake Amador.” CVCWA requests that language be added to the prohibition that would provide greater flexibility in the compliance determination during drought conditions.

Response: Staff does not concur. See Staff Response to JVID General Comment No. 4.

CENTRAL VALLEY WATER BOARD STAFF (STAFF) CHANGES

Staff Change No. 1.

The Maximum Daily concentration and mass-based final effluent limitations in the proposed NPDES Permit for Biochemical Oxygen Demand and Total Suspended Solids were corrected as 20 mg/L and 120 lbs/day, respectively, to appropriately limit at the technical capability of the tertiary process. The changes to the proposed NPDES Permit are shown below in underline/strikethrough format:

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	30 <u>20</u>	--	--
	lbs/day ¹	60	90	180 <u>120</u>	--	--
Total Suspended Solids	mg/L	10	15	30 <u>20</u>	--	--
	lbs/day ¹	60	90	180 <u>120</u>	--	--

¹ Based upon an average dry weather flow of 0.71 MGD.

Staff Change No. 2.

Removed section VI.C.5.c Continuous Monitoring Systems and the corresponding section in Fact Sheet, Attachment F because the Discharger recently upgraded to a SCADA based alarm system, and therefore, this provision is no longer applicable.

Staff Change No. 3.

Removed second sentence from section VIII.A. Notification of Interested Parties because the Discharger was not required to post the Notice of Public Hearing in the Amador Ledger Dispatch.

Staff Change No. 4.

Changed an interim compliance dates in Attachment A of the Order Amending TSO R5-2011-0909-02 as amended in TSO R5-2011-0909-01 on 13 November 2013 as shown in part in underline/strikethrough format below:

Task	Compliance Date
Complete Planning, Design, and Bid Process for Alkalinity Adjustment System, Prefilter Coagulation/Flocculation improvements, and Increase in Chlorine Mixing Energy	4 November 2013 <u>30 January 2014</u>

Staff Change No. 5.

Changed the following findings in the proposed TSO as shown in underline/strikethrough format below:

13. By statute, a Cease and Desist Order or Time Schedule Order may provide protection from MMPs for no more than five years. ~~Per the requirements of Water Code Section 13385(j)(3)(C)(ii)(I) for the purposes of treatment facility upgrade, the time schedule shall not exceed 10 years. Per the requirements of Water Code Section 13385(j)(3)(C)(ii)(II) 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 Central Valley Water Board may extend the time schedule for an additional five years beyond the initial five years, if the Discharger demonstrates that the additional time is necessary to comply with the effluent limitation.~~

20. Section 13300 of the California Water Code states in part: "Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements. ~~"When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventative action..."~~

Staff Change No. 6.

Changed the following statement within the order of the proposed TSO as shown in underline/strikethrough format below:

IT IS HEREBY ORDERED THAT pursuant to California Water Code Sections 133004 and 13267, ~~the Discharger shall cease and desist from violating~~ to ensure compliance with the requirements of Order R5-2013-XXXX, or subsequently adopted order, and the Discharger shall comply with the following:

1. ~~Pursuant to California Water Code Section 13300, t~~The Discharger shall comply with the following time schedule to ensure completion of the compliance projects: