

Central Valley Regional Water Quality Control Board
16/17 April 2015 Board Meeting

Response to Written Comments on
Supplemental Notice Concerning Ammonia Effluent Limits in Waste Discharge
Requirements for
Bell-Carter Olive Company, Inc. and City of Corning
Bell-Carter Industrial Wastewater Treatment Plant
Tehama County

At a public hearing scheduled for 16/17 April 2015, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0083721) for the Bell-Carter Olive Company, Inc. and City of Corning Industrial Wastewater Treatment Plant. A Supplemental Notice was issued by the Central Valley Water Board on 3 March 2015 concerning revisions to the water quality-based effluent limitations for ammonia in the Tentative Order.

The United States Environmental Protection Agency (USEPA) recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Recommended Criteria"). The 2013 Recommended Criteria is an update to USEPA's 1999 recommended water quality criteria for ammonia (the "1999 Criteria"). Although the 2013 Recommended Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Recommended Criteria may not be present in some Central Valley waterways. The 2013 Recommended Criteria document provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*" Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Recommended Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives.

This document contains responses to written comments received from interested parties in response to the Supplemental Notice. Written comments from interested parties were required to be received by the Central Valley Water Board by 2 April 2015 in order to receive full consideration. Comments were received before the deadline from:

1. USEPA (received 31 March 2015)

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

USEPA COMMENTS

USEPA COMMENT #1 – 1999 vs. 2013 Ammonia Criteria

USEPA recommends that the 2013 Recommended Criteria be implemented with mussels present, rather than using the 1999 Criteria, because USEPA contends that the proposed final ammonia effluent limits based on the 1999 Criteria are not adequate to ensure protection for all aquatic life. USEPA also asserts that improving water quality conditions in the Sacramento River will lead to improved habitat and re-colonization of mussels and snails.

RESPONSE:

Central Valley Water Board staff (Board staff) agrees that improving water quality conditions in the Sacramento River will lead to improved habitat. However, there are questions regarding applicability of the 2013 Recommended Criteria within Central Valley waterways and with respect to the mussel species found in the west.

The 2013 Recommended Criteria is an update to the 1999 Criteria and reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae. The 2013 Recommended Criteria includes equations to calculate ammonia limits based on whether or not mussels are present. However, the mussel species tested during development of the 2013 Recommended Criteria may not be present in some Central Valley waterways and are predominately present in waterways east of the Mississippi River. USEPA acknowledges in its 2013 Recommended Criteria document that, “*unioid mussel species are not prevalent in some waters, such as the arid west...*”, and provides that, “*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*” This calls into question whether the criteria is applicable as developed or needs refinement for applicability in California’s waterways. Implementing criteria that does not apply to Central Valley waterways would not serve to improve habitat and could have other detrimental impacts to the environment (e.g., increased energy use for treatment producing greenhouse gases).

Therefore, Board staff does not agree that the 2013 Recommended Criteria should be applied without further data being collected to determine how and where to appropriately implement the criteria. These are recommended criteria and not promulgated under law. The Board has the discretion to decide whether the criteria are applicable to its waters when permitting discharges. The Basin Plan states that, “in considering such criteria, the Board evaluates whether the specific numerical criteria...are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective.” In addition, the forward to the 2013 Recommended Criteria states: “...*Under the [Clean Water Act], states and tribes are to establish water quality criteria to protect designated uses. State and tribal decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those used in these criteria when appropriate.*”

USEPA argues that that the proposed final ammonia effluent limits are not adequate to ensure protection for all aquatic life. However, USEPA’s basis for this concern assumes that the recommended 2013 Recommended Criteria are fully applicable in the vicinity of Bell Cater’s

waste discharge and the criteria are fully applicable to mussels found in the west. Without more information, Board staff does not agree that the recommended 2013 Recommended Criteria are directly applicable to Central Valley waters. Board staff is working to develop this information, and in the meantime is implementing the 1999 Criteria, which the board finds is applicable to this discharge and fully protective of beneficial uses.

In addition, Board staff contends that while existing data can be used to determine where mussels have been historically present it is not clear where mussels have not been historically or where they can or cannot be expected to be found. Input from experts and field studies are necessary to provide the clarity needed to appropriately implement the 2013 Recommended Criteria. This additional information will provide Board staff with the necessary data to determine if the mussel species used in the development of the 2013 Recommended Criteria are present in Central Valley waterways and if a recalculation of the criteria is necessary.

Board staff is recommending continuing to work with experts, the state and federal fisheries agencies, and stakeholders to complete the Basin Planning effort. This direction is similar to how states neighboring California are currently implementing USEPA's recommended criteria for ammonia. The below table provides a summary of how other western states are addressing toxicity due to ammonia.

EPA Region	State	Criteria Included in Water Quality Standards (i.e., Basin Plan)	USEPA Recommended Criteria Currently Used
8	Utah	Yes	1999
9	Nevada	Yes	1999
	Arizona	Yes	1999 ¹
10	Oregon	Yes	1985 ²
	Washington	Yes	1999 ³
	Idaho	Yes	1999

¹Currently under a governor issued moratorium and cannot update standards until the moratorium is lifted.

²Adopted revised Water Quality Standards to incorporate the 2013 Recommended Criteria on 7 January 2015. USEPA approval of the revised standards is necessary before the Oregon is able to implement the 2013 Recommended Criteria.

³Do not plan to update Water Quality Standards for at least one year. Using 1999 Criteria for acute and 1985 Criteria for chronic.

USEPA COMMENT #2 – Anti-Degradation

USEPA states that it has concerns that the proposed ammonia limits may be inappropriately relaxed in comparison to existing limits and current facility performance and that the proposed Order may therefore be inconsistent with federal antidegradation requirements.

RESPONSE:

As explained in section IV.D.4 of the Fact Sheet, Board staff believes that sufficient justification regarding compliance with anti-degradation requirements is already provided in the proposed Order. The proposed Order requires compliance with applicable Water Quality Based Effluent Limits where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. To calculate Water Quality Based Effluent Limits for ammonia, Board staff used the same 1999 Criterion methodology for both the proposed Order and the prior Order (Order R5-2007-0166); the numeric change between the proposed Order and the prior Order simply reflects the fact that Board staff used additional pH and temperature data collected during the prior permit term to calculate the ammonia limitations in the proposed Order. Additionally, the Discharger submitted, as part of the 2012 Report of Waste Discharge, a simple anti-degradation analysis which showed that a dilution credit of 20:1 for ammonia would result in using less than 10 percent of the available assimilative capacity in the receiving water and that the current level of treatment using the microfiltration membrane constituted best practicable treatment or control (BPTC) of the discharge. The proposed Order contains a provision and discharge prohibition that requires that the ultrafiltration membrane be used to the maximum extent practicable and prohibits discharge from Pond 6, respectively, both of which will result in better water quality in the discharge compared to the current permit. The change in ammonia limitations will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction in water quality. The changes between the proposed Order and the prior Order are consistent with the anti-degradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

USEPA COMMENT #3 – Anti-Backsliding

USEPA states that it has concerns that the proposed ammonia limits may be inappropriately relaxed in comparison to existing limits and current facility performance and that the proposed Order may therefore be inconsistent with federal anti-backsliding requirements.

RESPONSE:

Section IV.D.3 of the Fact Sheet explains how the permit complies with federal anti-backsliding requirements. As explained above, though the numeric ammonia limitations in the proposed Order are relaxed compared to the numeric ammonia limitation in the prior Order, this reflects the fact that Board staff used additional pH and temperature data collected during the prior permit term to calculate the ammonia limitations in the proposed Order.

This relaxation of the ammonia limitations may be justified under Clean Water Act section 303(d)(4) because the Sacramento River is considered an attainment water for ammonia, and because relaxation of the ammonia limitation, a limitation based on a water quality standard, is consistent with anti-degradation requirements. The proposed Order relaxes the effluent limitations for ammonia based on updated pH and temperature data used to calculate the 1999 Criteria for the protection of aquatic life. This relaxation will not result in an increase in pollutants or any additional degradation of the receiving water.

Furthermore, this relaxation of the ammonia limitations may be justified under Clean Water Act section 402(o)(2)(B)(i), which allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of

permit issuance. The prior Order includes effluent limitations for ammonia established based on USEPA's 1999 recommended water quality criteria for ammonia, which vary based on pH and temperature. The effluent limitations for ammonia in the proposed Order are based on the same USEPA recommended criteria, but have been revised based on the consideration of updated pH and temperature data collected during the prior permit term.

USEPA COMMENT #4 – Dilution Credit for Ammonia

USEPA recommends that the dilution credit for ammonia be reduced or eliminated in order to adequately protect all applicable beneficial uses. USEPA also notes that the proposed effluent limits for ammonia are approximately double what they are in the current permit.

RESPONSE:

Central Valley Water Board staff does not agree that the dilution credit for ammonia should be reduced or eliminated. The dilution credit of 50:1 in the current permit has already been reduced down to 20:1 in the proposed permit. Based on the Discharger's 2010 mixing zone study, the proposed 20:1 dilution credit results in a mixing zone of less than 25 feet long, using only a very small portion of the Sacramento River in this area. The proposed dilution credit and mixing zone comply with State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries (SIP), and other law and regulation, and are protective of the designated beneficial uses of the receiving water. A smaller dilution credit would result in a smaller mixing zone, but then the calculated effluent limits for ammonia would be more stringent than the Discharger could reliably comply with.

USEPA notes that the proposed effluent limits for ammonia are double what is allowed in the current permit. Based on the use of new data, less stringent criteria for ammonia were calculated, as compared to the current permit. Therefore less stringent effluent limits were able to be calculated. So even though the dilution credit was reduced, the resulting effluent limits for ammonia are less stringent than the current permit. Based on an analysis of the variability of the Discharger's effluent data, the proposed effluent limits are set at levels the Discharger can comply with, and still protect the receiving water. Attachment A is a graph of the discharged ammonia concentrations over time with the proposed effluent limits indicated. The proposed effluent limits are set to allow the Discharger to be in compliance, considering expected variability of the discharge. A reasonable safety margin is allowed.

Bell Carter Industrial WWTP Ammonia Effluent Concentrations

