Central Valley Regional Water Quality Control Board
5/6 June 2014 Board Meeting

Response to Comments for the City of Stockton Stockton Regional Wastewater Control Facility Tentative NPDES Permit Renewal

The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit No. CA0079138) renewal for the City of Stockton (Discharger) Regional Wastewater Control Facility (Facility).

The tentative NPDES Permit (tentative Permit or tentative Order) was issued for a 30-day public comment period on 26 March 2014 with comments due by 25 April 2014. The Central Valley Water Board received public comments regarding the tentative Permit by the due date from the Discharger, the Central Valley Clean Water Association (CVCWA), the State Water Contractors and San Luis & Delta-Mendota Water Authority (Water Contractors), and the California Urban Water Agencies (CUWA). Late comments were also received from the United States Environmental Protection Agency, Region IX (USEPA) on 29 April 2014. Changes were made to the tentative 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 OF STOCKTON (DISCHARGER) COMMENTS

Discharger Comment No. 1. – I. Proposed Nitrate plus Nitrite Limitation
The tentative Order includes a proposed average monthly effluent limitation of 10 mg/L for nitrate plus nitrite (as N). According to the Fact Sheet, the effluent limitation is being proposed because "the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL," and because the discharge has reasonable potential to also "cause or contribute to an exceedance of the Basin Plan's narrative water quality objectives for biostimulatory substances and taste and odors." (Tentative Order, p. F-57.) The Tentative Order appears to deny a mixing zone and dilution credits for compliance with the maximum contaminant level (MCL) for nitrate because of concerns regarding nitrate as a nutrient rather than a drinking water constituent. Ultimately, the Tentative Order includes the proposed limit of 10 mg/L because treatment technologies exist that can bring about compliance, and because the Tentative Order proposes to find that the limit is within the "zone of reasonableness." (*Id.*, p. F-58.)

Such justifications are problematic for several reasons. The Tentative Order states that it is denying the mixing zone requested by the Discharger for compliance with the primary MCL for nitrate, but decouples the municipal (MUN) use protected by the MCL from the MCL itself. This is improper, as the State Water Resources Control Board (State Water Board) has explained in a precedential order. To the extent that the proposed effluent limitation is based on narrative water quality objectives other than the primary MCL, the Tentative Order fails to properly interpret the stated applicable narrative objectives to identify a water quality-based effluent limitation (WQBEL). In this regard, the Tentative Order also asserts that there is no assimilative capacity for additional loading of nutrients, at unspecified locations in "the Delta." This is not supported by evidence, and continued discharges of nitrate from the Facility would *not* constitute "additional" loadings. In fact, the seasonal 26/30 mg/L limitations proposed in Nitrate

Option 1 represent a 25-35 percent reduction in permitted effluent nitrate concentrations, relative to the current permit. The Tentative Order also improperly relies on a non-precedential State Water Board Order and inapplicable case law to claim that the proposed limit is appropriate because it is within a "zone of reasonableness." Fundamentally, the Tentative Order also fails to include specific findings based on evidence in the record to support the proposed effluent limit and denial of a mixing zone. For these and other reasons, the 10 mg/L nitrate plus nitrite (as N) effluent limit should not be adopted. Nitrate Option 1 is justified and appropriate.

RESPONSE: Central Valley Water Board staff does not concur. The Discharger requested a mixing zone for nitrate plus nitrite for compliance with the Department of Public Health (DPH) Primary MCL implementing the Basin Plan's narrative chemical constituent objective for the protection of the municipal and domestic water supply (MUN) beneficial use (10 mg/L Nitrate plus Nitrite as N). However, the discharge of nitrate may also impact aquatic life beneficial uses. Excessive nitrates in drinking water pose a human health concern, particularly for human fetuses and infants (Primary MCL protects human health). Excessive nitrogen in the form of nitrates can also contribute to excessive algal growth and change the ecology of a waterbody[1], which has impacts to aquatic life and municipal uses. In addition, increased nutrient loads can create excessive algal growth in the Delta, resulting in impacts to municipal drinking water supplies that convey and treat the water for municipal and domestic use. Consequently, for nutrients, the most stringent water quality objectives are the Basin Plan's narrative biostimulatory substances objective and narrative taste and odor objective. USEPA has established CWA section 304(a) criteria for total nitrogen of 0.31 mg/L in its Aggregate Ecoregion I criteria that may be used to interpret the biostimulatory substances and taste and odors narrative objectives.

The Central Valley Water Board is concerned with the effects of the discharge of nutrients, including nitrate and nitrite, on biologically sensitive aquatic resources and critical habitats, as are present in the Delta, and the impact of nutrients on the use of the water for municipal uses. The recent decline in pelagic fishes in the Delta is referred to as the Pelagic Organism Decline (POD). The POD refers to the decline in indices representing the abundance of delta smelt, longfin smelt, striped bass, and threadfin shad, since approximately 2000. *Multiple stressors may be leading to POD, including top-down effects (e.g., water diversion, predation), bottom-up effects (e.g., food availability and quality), and the effects of changes in physical and chemical fish habitat (e.g., water quality, contaminants, disease, toxic effects of toxic algal blooms) (Sommer et al. 2007).*[2]

The Discharger's mixing zone study indicates that at the current discharge rate of 30 MGD the discharge increases nitrate concentrations at the State Water Project and Central Valley Project Pumping Plants up to 0.3 mg/L (as N) on a long-term average and up to 1.0 mg/L (as N) as a daily maximum. The mixing zone study also confirms that nutrient loadings at the Delta export pumping plants are already at levels that can cause algal blooms in the

[1] Glibert, P.M. 2010. Long-term change in nutrient loading and stoichiometry and their relationships with changes in food web and dominant pelagic fish species in the San Francisco Estuary, California. Reviews in Fisheries Science. 18(2):211-232
Glibert, P.M., et al. 2011, Ecological stoichiometry, biogeochemical cycling, invasive species, and aquatic food webs; San Francisco Estuary and comparative systems. Reviews in Fisheries Science, 19(4):358-417

[2] Sommer, T.R., et al. 2007. The collapse of pelagic fishes in the upper San Francisco Estuary. Reviews in Fisheries Science, 32:270-277

water conveyance and storage facilities. Elevated nutrient loads can create excessive algal growth, resulting in impacts to municipal drinking water supplies.[3] Increased algal growth can result in increased concentrations of total organic carbon (TOC) that negatively impacts municipal drinking water suppliers, because it may result in the creation of harmful byproducts during chlorination. Source water with elevated TOC must receive a higher level of treatment to ensure the disinfection byproducts are not produced during chlorination. High algae levels in source water can also impact water conveyance systems and treatment plants, because algae can clog filters and reduce the efficiency of filtration, and aquatic weeds and algae can clog water conveyance systems. In addition, some species of bluegreen algae are associated with the production of compounds such as geosmin and 2-methylisoborneol (MIB) that impart objectionable odors and tastes to waters, even at very low concentrations.

The current science is not certain on the precise factors causing the POD. The State Water Resources Control Board addressed this uncertainty in Order WQ 2012-0013[4] for the Sacramento Regional Wastewater Treatment Plant as follows, "*Neither the Clean Water Act, nor U.S. EPA's regulations allow indefinite delay until better science can be developed, or a statewide policy can be adopted. In almost every case, more data can be collected and the hope or anticipation that better science will materialize is always present in the context of science-based agency decision-making…The U.S. Supreme Court has held that U.S. EPA cannot avoid its statutory obligation by noting the presence of uncertainty[5]. Various appellate courts have held that where a complex statute requires an agency to set a numerical standard or effluent limitation, it will not overturn the agency's choice of a precise figure where it falls within the 'zone of reasonableness.'*[6]"

The Basin Plan states, "*Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water Board or Regional Water Board, and that may be reasonably controlled*." (page IV-15.00) Since the Delta is presently exhibiting cultural eutrophication at the current nutrient loading levels[7], discharge at the current nutrient loading will not be protective of downstream beneficial uses. Nutrient reduction is necessary to protect the beneficial uses of the Delta.

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[3] Heidel, K., et al. 2006. Conceptual Model for Nutrients in the Central Valley and Sacramento-San Joaquin Delta

[4] Order WQ 2012-0013 is not precedential with respect to nitrate. However, the determinations made by the State Water Board are relevant in this case and provide support for the regulation of nutrients.

[5] *Massachusetts v. U.S. Environmental Protection Agency* (2007) 549 U.S. 497, 534.

[6] *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Environmental Protection Agency, supra*, 690 F.3d at p. 28; *National Maritime Safety Assn. v. Occupational Safety & Health Admin.* (D.C. Cir. 2011) 649 F.3d 743, 752; *Reynolds Metals Co. v. U.S. Environmental Protection Agency* (4th Cir. 1985) 760 F.2d 549, 559.

[7] Archibald Consulting et al. 2012. California State Water Project Watershed Sanitary Survey, 2011 Update. Prepared for the State Water Project Contractors Authority and the California Department of Water Resources; Alameda County Flood Control District et al., Summary of Drinking Water Quality Issues and Requested Permit Conditions for the Sacramento Regional Wastewater Treatment Plant NPDES Permit Renewal, (December 2007)

For the reasons discussed above, the requested mixing zone for nitrate plus nitrite was denied in the proposed Permit. The proposed Permit includes an average monthly effluent limit (AMEL) for nitrate plus nitrite of 10 mg/L (total as N), based on the technical capability of publicly-owned treatment works. An AMEL of 10 mg/L for nitrate plus nitrite as nitrogen is appropriate and is within the zone of reasonableness. This limit is readily achievable using standard denitrification technologies. Although effluent limits based on USEPA's Aggregate Ecoregion I Criteria for total nitrogen would further reduce nutrient loading, effluent limits based on this criteria are not technologically feasible with standard treatment technologies. Additionally, nutrient cycling in waterways is complex, USEPA's Ecoregion I Criteria have not been developed considering the Delta's unique nutrient needs and characteristics; and therefore, may not be directly applicable. The criteria do, however, provide a reference to consider for the protection of aquatic life beneficial uses. The nitrate plus nitrite effluent limit in the proposed Permit is protective of the MUN beneficial use, and is a technologically achievable limit that results in a reduction in nutrient loadings from the previous Order that is protective of aquatic life beneficial uses.

Discharger Comment No. 2 – I.A. Denial of a Mixing Zone for Compliance with the Primary MCL is Improper

The Tentative Order identifies three relevant water quality objectives: chemical constituents, biostimulatory substances, and taste and odors. Of the three identified water quality objectives, the Tentative Order associates only one, the chemical constituents objective, with a numeric criterion. In that case, the Tentative Order identifies the primary MCL of 10 mg/L for the sum of nitrate plus nitrite (as N), which is incorporated by reference in the chemical constituents objective. (Tentative Order, p. F-57.) The Tentative Order finds reasonable potential as it relates to the primary MCL because the maximum effluent concentration was higher than the primary MCL of 10 mg/L. The City does not dispute the finding of reasonable potential for nitrate plus nitrite as it relates to the MUN beneficial use and chemical constituents objective, as expressed in the primary MCL.

The primary MCL for nitrate exists to protect consumers of water from excessive concentrations of nitrate, which can cause adverse health effects. However, it is unnecessary to meet the MCL at end-of-pipe in order to prevent adverse effects from consumption of nitrate plus nitrite. As reflected on page F-22 of the Tentative Order, the City "requested a mixing zone for nitrate plus nitrite for compliance with the DPH Primary MCL implementing the Basin Plan's narrative chemical constituent objective for the protection of the MUN beneficial use." (See also Tentative Order, p. F-20 [describing the City's request for a mixing zone for the MCL].) The City provided appropriate studies to support a mixing zone and dilution credit as it relates to the MUN beneficial use. Further, the existing permit for the RWCF includes a mixing zone and dilution credit for nitrate, which results in a current nitrate plus nitrite limit of 40 mg/L. (See, e.g., Order No. R5-2008-0154, pp. F-37 to F-38.)

The Tentative Order does not appear to dispute that, for the protection of human health from nitrate plus nitrite, a mixing zone is justified. (See Tentative Order, pp. F-21 to F-22.) However, the Tentative Order states that, "the requested mixing zone for nitrate plus nitrite is denied." (*Id.*, p. F-23.) The denial of the mixing zone that was requested by the City is not due to a concern over nitrates/nitrites in drinking water or concentrations of nitrates/nitrites in the requested mixing zone. Rather, it is based on concerns regarding nitrates and nitrites as nutrients in the aquatic ecosystem, and alleged resultant effects of nutrient loading. (*Ibid*.) The City believes that this is exactly what the State Water Board has determined the Central Valley Water Board may *not* do. Specifically, in its Order WQ 2012-0013 the State Water Board evaluated the denial

of a mixing zone for compliance with the MCL, and concluded that denial for reasons unrelated to the potential for excessive concentration of nitrates in drinking water was improper.

It is possible that the proposed denial of a mixing zone is to be read as a denial related to the narrative water quality objectives referenced in the Tentative Order, and further discussed below. If so, the necessary inference is that a nitrate plus nitrite concentration of 10 mg/L equates to the narrative water quality objectives. If that is the case, allowance of the mixing zone requested by the City would result in only a small area where the narrative water quality objectives are not attained, and the criteria for granting a mixing zone would be met outside that zone. Yet the Tentative Order's discussion of nutrient effects is not related to the area of the requested mixing zone.

RESPONSE: The Discharger requested a mixing zone for nitrate plus nitrite for compliance with the Primary MCL implementing the Basin Plan's narrative chemical constituent objective for the protection of the municipal and domestic water supply (MUN) beneficial use (10 mg/L Nitrate plus Nitrite as N). The Discharger provided a Nitrate Study that provided information supporting allowance of a mixing zone for nitrate plus nitrite considering the primary MCL. However, in this case for nutrients, such as nitrate and nitrite, the most stringent water quality objectives are the Basin Plan's narrative biostimulatory substances objective and narrative taste and odor objective. This is because excessive nitrogen in the form of nitrates can also contribute to excessive algal growth and change the ecology of a waterbody, which has impacts to aquatic life and municipal uses.

In order to satisfy the mixing zone requirements of the SIP, the Discharger's Nitrate Study evaluated predominantly near-field impacts in and around the discharge that would comprise the mixing zone for nitrate plus nitrite considering protection of human health impacts protected by the primary MCL. Based on the results of the Nitrate Study it appears that a mixing zone based on the primary MCL for nitrate plus nitrite to protect human health meets the SIP's mixing zone requirements. However, the applicable water quality objectives in this case are the Basin Plan's narrative biostimulatory objective and narrative taste and odor objective.

Central Valley Water Board staff concur that the reasonable potential analysis discussion in the Fact Sheet does not clearly identify the applicable water quality criterion to implement the narrative objectives for biostimulatory objectives and taste and odor. USEPA has established CWA section 304(a) criteria for total nitrogen that may be used to implement these narrative objectives. USEPA's December 2001, Ambient Water Quality Criteria Recommendations, Rivers and Streams in Nutrient Ecoregion 1, recommends a criterion of 0.31 mg/L for total nitrogen to address cultural eutrophication, which is the adverse effects of excess human-caused nutrient inputs. The criterion was derived for streams and rivers in Ecoregion 1, which includes the Delta, to represent surface waters that are minimally impacted by human activities and protective of aquatic life and recreational uses. USEPA's nutrient criteria are not typically used for nitrates for use in interpreting these narrative objectives, but must be considered in this case because cultural eutrophication is a problem in the Delta.

The Discharger's Nitrate Study did not evaluate a mixing zone for nitrates, as a nutrient. Rather the study evaluated the mixing zone based on the primary MCL for protection of human health, and evaluated possible nutrient-related issues, such as increased algal blooms, that could be caused by allowing nitrate concentrations in the discharge and within

a mixing zone exceeding the primary MCL. These are important factors to consider and at the time seemed like a reasonable approach. However, as the Discharger's comment points out, the State Water Board's WQ 2012-0013, for the Sacramento Regional County Sanitation District, found that the reasons for denying a mixing zone must be related to the use that the applicable objective is intended to protect. Following this direction, the Central Valley Water Board evaluated the mixing zone for nitrates based on concentrations that are protective of the Basin Plan's narrative biostimulatory substances and taste and odor water quality objectives. The Discharger's mixing zone study did not provide this information. The mixing zone study only provided the mixing zone dimensions and discussion of applicable mixing zone requirements to justify a mixing zone for implementation of the primary MCL for the protection of public health.

Based on the Nitrate Study findings regarding the far-field impacts of the discharge, there is currently no assimilative capacity for nutrients in order to allow a mixing zone. The Discharger's Nitrate Study on page 28 states the following, "None of the locations [modeled far-field sites] showed nitrate concentrations near or above the 10 mg/L-N drinking water MCL; thus, the incremental contribution of nitrate under either effluent scenario would not cause or contribute to exceedance of the MCL. Furthermore, given the information discussed in the literature review section, since nitrate concentrations at Banks and Jones pumping plants are general well above 0.5 mg/L-N, it is unlikely that incremental contributions of nitrate under either effluent limitation scenario would cause algal blooms in SWP or CVP facilities downstream of the intakes, or result in undesirable taste and odors for downstream water users, *when they otherwise would not occur*." (*emphasis added*) This information acknowledges that nutrient levels are already high at the Delta export pumps, such that there are sufficient nutrients for algal blooms. This is consistent with information in the record that algal blooms occur in the water conveyance systems. It may be argued whether incremental nutrient loadings by the Facility discharge would cause additional algal blooms. However, that issue is irrelevant, because in order to allow a mixing zone there must be a demonstration that assimilative capacity exists. The Nitrate Study confirms that nutrient levels are elevated and assimilative capacity is not available for compliance the Basin Plan's narrative water quality objectives for biostimulatory substances and tastes and odors.

For the reasons discussed above, the mixing zone for nitrates was denied in the proposed Permit. A final effluent limit for nitrate plus nitrite of 10 mg/L (as N) was ultimately established in the proposed Permit. However, this limit was not based on the primary MCL. Rather it was based on the technical capability of publicly-owned treatment works. An average monthly effluent limit of 10 mg/L for nitrate plus nitrite as nitrogen is appropriate and is within the "zone of reasonableness." This limit is readily achievable using standard denitrification technologies. Although WQBELs based on USEPA's nutrient criteria would further reduce nutrient loading, WQBELs based on this criteria is not technologically feasible with standard treatment technologies. The nitrate plus nitrite effluent limit in the proposed Permit is protective of the MUN beneficial use, and is a technologically achievable limit that results in a reduction in nutrient loadings from the previous Order that is protective of aquatic life beneficial uses.

Discharger Comment No. 3 – I.B.1. Tentative Order Fails to Comply with State and Federal Regulations

The Tentative Order finds that the "most stringent water quality objectives are the Basin Plan's narrative biostimulatory substances objective and narrative taste and odor objective." (Tentative Order, p. F-23.) Such a finding is not improper *per se*. If this statement is correct, it is appropriate to evaluate reasonable potential, and develop WQBELs, based on the narrative water quality objectives. However, the Tentative Order departs from applicable law and policy in interpreting such objectives to determine reasonable potential, calculate WQBELs, and consider whether a mixing zone and dilution credits should be applied.

Applicable federal regulations provide that WQBELs are to be adopted if "a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard . . . ." (40 C.F.R. § 122.44(d)(1)(ii).) The Tentative Order identified the narrative biostimulatory substances and taste and odor objectives as the most stringent water quality standards (Tentative Order, p. F-23), and finds reasonable potential for discharges from the RWCF for both of these narrative standards. (*Id*., p. F-57.)

However, the Tentative Order does not properly interpret the two narrative objectives at issue in order to determine reasonable potential and calculate numeric WQBELs. The Basin Plan contains a "Policy for Application of Water Quality Objectives," which includes the Regional Board's adopted regulatory policy for interpreting and applying narrative water quality objectives. The Policy in general provides that the Regional Board must adopt numeric limits in order to implement narrative objectives, and that such limits will be determined on a case-by-case basis. (Basin Plan, pp. IV-16.00-18.00.) "To evaluate compliance with the narrative water quality objectives, the Regional Water Board considers, on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant **numerical criteria** and guidelines developed and/or published by other agencies and organizations . . . . In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective . . . ." (Basin Plan, p. IV-17.00, emphasis added.) The Tentative Order does not follow this required procedure.

Rather than making such an interpretation in conformance with state and federal regulations, the Tentative Order makes unsubstantiated, generalized statements with respect to nutrients, and then adopts an effluent limit of 10 mg/L for nitrate plus nitrite based on the capabilities of available technologies. A limit based on "technical capability" is not a WQBEL that is derived in a manner consistent with applicable law. Further, a 10 mg/L effluent limitation is not a technology-based limit required under federal law. (See 40 C.F.R. § 133.102.) A limit based on technical capability that is not a technology-based limit required by federal law cannot be adopted absent compliance with Water Code section 13241 and the adoption of findings related to factors specified in Water Code section 13241.

RESPONSE: Central Valley Water Board staff concur that the reasonable potential analysis discussion in the Fact Sheet does not clearly identify the applicable water quality criterion to implement the narrative objectives for biostimulatory objectives and taste and odor. USEPA has established CWA section 304(a) criteria for total nitrogen that may be used to implement these narrative objectives. USEPA's December 2001, Ambient Water Quality

Criteria Recommendations, Rivers and Streams in Nutrient Ecoregion 1, recommends a criterion of 0.31 mg/L for total nitrogen to address cultural eutrophication, which is the adverse effects of excess human-caused nutrient inputs. The criterion was derived for streams and rivers in Ecoregion 1, which includes the Delta, to represent surface waters that are minimally impacted by human activities and protective of aquatic life and recreational uses.

Although effluent limits based on USEPA's Aggregate Ecoregion I Criteria for total nitrogen would further reduce nutrient loading, effluent limits based on this criteria are not technologically feasible with standard treatment technologies. Additionally, nutrient cycling in waterways is complex, USEPA's Ecoregion I Criteria have not been developed considering the Delta's unique nutrient needs and characteristics; and therefore, may not be directly applicable. The criteria do, however, provide a reference to consider for the protection of aquatic life beneficial uses. Therefore, the proposed Permit includes a final average monthly limit for nitrate plus nitrite of 10 mg/L (total as N), based on the technical capability of publicly-owned treatment works. The State Water Board addressed this rationale for establishing water quality-based effluent limits for the Sacramento Regional Wastewater Treatment Plant in Order WQ 2012-0013, which states, "*Various appellate courts have held that where a complex statute requires an agency to set a numerical standard or effluent limitation, it will not overturn the agency's choice of a precise figure where it falls within the 'zone of reasonableness.'*[8]"

An average monthly limit of 10 mg/L for nitrate plus nitrite as nitrogen is appropriate and is within the zone of reasonableness. This limit is readily achievable using standard denitrification technologies. The total nitrogen loading allowed in the proposed Permit is protective of the MUN beneficial use, and is a technologically achievable limit that results in a reduction in nutrient loadings from the previous Order that will reduce the Facility's contribution to: cultural eutrophication in the Delta, algal blooms in the state water project conveyance system, and is protective of aquatic life beneficial uses.

Clarifying language has been added to the Fact Sheet identifying the applicable numeric criteria, as discussed above.

Discharger Comment No. 4 – I.B.2. Finding of "Reasonableness" to Support the Limit Does Not Comply with the Law

The Tentative Order concludes that the nitrate plus nitrite limit is "appropriate and is within the zone of reasonableness." (Tentative Order, p. F-58.) The Tentative Order effectively asserts that any effluent limitation landing within a "zone of reasonableness" is lawful, even if applicable regulations have not been followed. To the contrary, an evaluation of the reasonableness of a conclusion is relevant only when the Regional Board has followed the law applicable to calculating effluent limitations in the first instances. If that has occurred, a court may evaluate whether the conclusion is reasonable. But "zone of reasonableness" is not an independent ground or procedure for developing permit limits, and in any event the concept is not used properly in the Tentative Order.

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[8] *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Environmental Protection Agency, supra*, 690 F.3d at p. 28; *National Maritime Safety Assn. v. Occupational Safety & Health Admin.* (D.C. Cir. 2011) 649 F.3d 743, 752; *Reynolds Metals Co. v. U.S. Environmental Protection Agency* (4th Cir. 1985) 760 F.2d 549, 559.

RESPONSE: Central Valley Water Board staff concurs that the tentative Permit did not provide a clear discussion of the steps taken to establish the WQBELs for nitrate plus nitrite. As discussed in the previous response (Response to Discharger Comment No. I.B.1), the tentative Permit failed to discuss the applicable numeric criteria to interpret the Basin Plan's narrative water quality objectives for biostimulatory substances and taste and odors. In this situation USEPA's nutrient criteria could be used to interpret the narrative objectives, which would result in stringent effluent limits that are not technically achievable. The tentative Permit recognizes that although the science regarding the effects of nutrients on aquatic life is not certain, the NPDES regulations do not allow indefinite delay until better science is developed. The State Water Board noted that, "Various appellate courts have held that where a complex statute requires an agency to set a numerical standard or effluent limitation, it will not overturn the agency's choice of a precise figure where it falls within the 'zone of reasonableness.'[9] " Considering the uncertainty of the science, but also the need to implement requirements to control the discharge of nutrients, the proposed Permit established effluent limits for nitrate plus nitrite that are technically feasible, rather than calculate limits based on USEPA's nutrient criteria. The proposed limits are appropriate and are within the "zone of reasonableness." The limits are readily achievable using standard denitrification technologies, are fully protective of MUN use, and represent a reduction in nutrient loading to the Delta to reduce the Discharger's impact on beneficial uses.

Clarifying language has been added to the Fact Sheet identifying the applicable numeric criteria, as discussed above.

Discharger Comment No. 5 – I.C. Nitrate Plus Nitrite (as N) Limit is not Supported by the Evidence in the Record or Appropriate Findings

Beyond the inconsistencies with regulatory requirements described above, the Tentative Order's conclusions are not supported by the evidence. They are often vague, and the Tentative Order fails to include findings that would bridge the analytical gap between "the raw evidence and ultimate decision or order." (*Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506, 515 (*Topanga*).)

RESPONSE: Central Valley Water Board staff concurs that the discussions in the Fact Sheet that support the implementation of the nitrate plus nitrite effluent limits are somewhat vague and have provided clarifying language in the Fact Sheet to provide specific citations to scientific studies used in the evaluation.

Discharger Comment No. 6 – I.D. Costs of Meeting 10 mg/L-N Average Monthly Effluent Limitation are Excessive

In addition to the legal and regulatory concerns expressed above, the City is also concerned with the practical implications with respect to costs and financing associated with meeting the proposed limit, which would force the City to build denitrification facilities. Such implications are especially of concern in light of the City's other efforts and needs related to facility improvements.

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[9] *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Environmental Protection Agency, supra*, 690 F.3d at p. 28; *National Maritime Safety Assn. v. Occupational Safety & Health Admin.* (D.C. Cir. 2011) 649 F.3d 743, 752; *Reynolds Metals Co. v. U.S. Environmental Protection Agency* (4th Cir. 1985) 760 F.2d 549, 559.

RESPONSE: Central Valley Water Board staff understands that compliance with the proposed nitrate plus nitrite effluent limits will be costly. However, as discussed in Fact Sheet and Staff Responses, above, the effluent limits are necessary to protect the beneficial uses of the Delta.

Discharger Comment No. 7 – I.E. Proposed Nitrate plus Nitrite Limitation is Appropriate and Protective

Modeling (DSM2) of nitrate concentrations under a scenario granting the requested dilution credit and mixing zone (i.e., existing RWCF performance-based concentrations) and a scenario where RWCF effluent concentrations are held to the proposed 10 mg/L-N AMEL was conducted to show the relative difference in Delta nitrate plus nitrite levels with and without a dilution credit. As detailed in Attachment C, restricting the nitrate plus nitrite AMEL to 10 mg/L-N, when compared to the City's requested AMELs, would result in a reduction on the order of 0.35 mg/L-N in long-term average nitrate plus nitrite contributions to the DWSC near Rough and Ready Island, and substantially lesser reductions at other Delta locations, typically about 0.1 mg/L-N or less, which consequently is below typical analytical reporting limits. In the areas that would show the greatest reduction (i.e., in the mixing zone), as indicated previously, algae levels are already low due to other factors (i.e., hydrodynamics and grazing). As described previously and in other materials, because nitrate plus nitrite levels are not controlling algal biomass in the San Joaquin River or Delta, maintaining current nitrate levels in the effluent would not result in excessive algal growth, adverse ecological changes, or impacts to municipal drinking water supplies in the Delta. Imposing a 10 mg/L-N AMEL, however, would result in great, yet unnecessary, economic costs. (See Attachment E to the City's comments.) There is simply no justification to impose such costs on the City when no evidence exists to demonstrate a corresponding benefit to water quality and beneficial uses.

RESPONSE: See responses to Discharger Comments Nos. 1 – 6, above.

Discharger Comment No. 8 – II.A.1. Final Ammonia Effluent Limitations

The maximum daily ammonia mass limitation for November is in error. Based on the permitted effluent concentration and flow, it should be 4,600 pounds per day.

RESPONSE: Central Valley Water Board staff concurs and the correction has been made to the proposed Permit.

Discharger Comment No. 9 – II.A.2. Interim Nitrate plus Nitrite Effluent Limitation and, II.A.5. Compliance Schedule

The Discharger pointed out that the interim nitrate plus nitrite limit in the Limitations and Discharge Requirements, Table 5, is presented as a Maximum Daily Effluent Limitation (MDEL), but the corresponding discussion in the Fact Sheet presents the interim limit as an Average Monthly Effluent Limitation (AMEL). Additionally, the date for compliance with the final effluent limitation for nitrate plus nitrite in the Limitations and Discharge Requirements sections IV.A.2.b and VI.C.7.c (30 December 2023) is not consistent with the final compliance report due date in the compliance schedule (1 June 2024). Additionally, the Discharger requests additional time to comply with the following: Financing Plan submittal; contends a separate Rate Analysis Report is unnecessary; and believes a deadline for the Stockton City Council to adopt the Discharger's compliance alternative is unwarranted. The Discharger has requested the following modifications be made to the compliance schedule for nitrate plus nitrite:

	Task	Date Due
i.	**Submit Method of Compliance Workplan.** Submit workplan that ensures compliance with final effluent limitations for nitrate plus nitrite by the final compliance date.	**31 December 2014**
ii.	**Submit and Implement Pollution Prevention Plan (PPP) for Nitrate Plus Nitrite in accordance with Water Code section 13263.3(d)(3).** The PPP shall be prepared and implemented in accordance with Attachment F, Section VI.B.3.	**31 December 2014**
iii.	**Progress Reports.** The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.	**30 June**, annually, beginning June 2015 until final compliance.
~~**iv.**~~	~~**Rate Analysis Report**. Submit a report with the annual progress report that includes the following:~~ ~~1) Identification of the funding alternatives and sources, such as revenue bonds, State Revolving Fund loan, etc.; and~~ ~~2) An evaluation of the source of rate revenue necessary to fund the selected compliance project(s).~~	~~**30 June 2015**~~
~~**v.**~~	~~**Complete Financing Plan.** Submit with the annual progress report a financing plan for the selected compliance project(s) and a schedule for obtaining funding.~~	~~**30 June 2016**~~
~~**vi.**~~**iv.**	**Complete Treatment Technology Evaluation and Pilot Testing.** Submit with the annual progress report confirmation of compliance with this task.	**30 June 2016**
~~**vii.**~~**v.**	**Select Preferred Treatment Option and Complete Preliminary Design.** Submit with the annual progress report confirmation of compliance with this task.	**30 June 2017**
vi.	**Complete Financing Plan.** Submit with the annual progress report a financing plan for the selected compliance project(s) and a schedule for obtaining funding.	**30 June 2019**
vii.	**Complete CEQA Documentation for Implementation of the Preferred Treatment Option.** File CEQA Submit environmental documents to the State Clearinghouse~~ and submit notice of determination~~.	**31 December 2019**
~~**ix.**~~**viii.**	**Award Construction Bid.** Submit a letter confirming and describing detailed information on awarded construction bid process (e.g. date awarded, company, etc.).	**31 December 2020**
ix.	**Obtain Funding.** Submit with the annual progress report confirmation of compliance with this task.	**30 June 2021**

	Task	Date Due
~~**xi.**~~	~~**Approval of Project by City Board.** Submit with the annual progress report confirmation of compliance with this task that includes a summary of the outcome of the City Board meeting (e.g., resolution on compliance alternative).~~	~~**30 June 2021**~~
~~**xii.**~~**x.**	**Complete Construction of Preferred Treatment Option.** Submit construction approval documentation.	**31 December 2023**
~~**xiii.**~~	**Final Compliance.** Submit report demonstrating compliance with the final effluent limits for nitrate plus nitrite.	**1 June 2024**

RESPONSE: Staff agrees that the discussion in the Fact Sheet which presents the interim nitrate plus nitrite limit was incorrectly referred to as an AMEL. The Fact Sheet has been modified accordingly. The interim effluent limitation was developed using the statistical approach provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD provides guidance on estimating the projected maximum effluent concentration using a lognormal distribution of the observed effluent concentrations at a desired confidence level, as detailed in Section 3.3 of the TSD. The multipliers in Table 3-1of the TSD were used to calculate the 99th percent confidence level and 99th percentile of the dataset based on the number of effluent samples and the coefficient of variation. The multipliers from the table were multiplied by the highest observed effluent concentration to estimate the maximum expected effluent concentration; this value was used as the interim MDEL. Additionally, the date for compliance with the final effluent limitation for nitrate plus nitrite in the Limitations and Discharge Requirements sections IV.A.2.b and VI.C.7.c (30 December 2023) will be corrected to 1 June 2024 to align with the compliance report due date in the compliance schedule. Additionally, the Discharger's requests for additional time to comply with the Financing Plan submittal, Rate Analysis Report removal, and City Council resolution removal have been granted. Staff believes the requests are reasonable and substantial progress will be made toward compliance with the final effluent limitations for nitrate plus nitrite during the term of the proposed Permit.

Discharger Comment No. 10 – II.A.3. Interim Total Methylmercury Effluent Limitation
The Discharger is concerned with the approach to the calculation of the interim total mercury loading effluent limitation, specifically the flow and effluent quality data used to derive the performance-based interim limitation. The tentative Permit's interim effluent calendar annual total mercury load was specified to not exceed 57 grams, which would remain in effect until 31 December 2030. The Discharger is concerned that historical discharge rates of approximately 26 million gallons per day (mgd) should not have been used to make the calculation to set the interim effluent limitation, but instead the permitted discharge rate of 55 mgd should be used. Additionally, the Discharger believes that the Central Valley Water Board should not have used effluent mercury data after the Facility was upgraded because it unfairly penalizes them for early implementation of actions to reduce mercury in their effluent prior to adoption of the Delta Methylmercury Control Program (Methylmercury TMDL). The Discharger points out that the Methylmercury TMDL derived methylmercury wasteload allocations (WLA) for Stockton's Regional Wastewater Control Facility based on effluent methylmercury data collected between August 2004 and July 2005. As a result, the Discharger

requests the interim total mercury mass limitation be derived based on pre-upgrade effluent quality and the permitted discharge rate.

RESPONSE: Central Valley Water Board staff concurs in part, see Response to CVCWA Comment No. 5, below.

Discharger Comment No. 11 – II.A.4. Pretreatment Requirements

The Discharger requests a longer timetable, extending from 6 months to 1 year, for completion of the pretreatment requirement actions specified in the Limitations and Discharge Requirements section VI.C.5.a.i.

RESPONSE: Central Valley Water Board staff agrees and has revised the requirement in the Limitations and Discharge Requirements section VI.C.5.a.i, extending the pretreatment requirement timetable to 1 year.

Discharger Comment No. 12 – II.B.1. Pond(s) Monitoring Requirements

The Discharger contends that there is no basis for pond monitoring as the plant has received no odor complaints in the past five years. The Discharger is also concerned with the additional costs of such monitoring requirements. The Discharger contends that the previous Order R5-2008-0154 required pond monitoring to assess the impacts of percolate on groundwater, a task that was completed as part of the previously submitted *Background Groundwater Quality Characterization Technical Report* and therefore continued pond monitoring for these groundwater quality characterization constituents is not necessary for the Discharger to effectively conduct the BPTC Technical Evaluation required in the tentative Permit. As such, the Discharger requests all Table E-9 pond monitoring requirements related to the following constituents be eliminated from Table E-9: electrical conductivity, total dissolved solids, ammonia, nitrate, nitrite, Kjeldahl nitrogen, boron, chloride, iron, manganese, and sodium. If the Central Valley Water Board is not amenable to removal of these constituents from the pond monitoring, the Discharger requests at the very least the constituents be reduced to those monitored in the groundwater requirements as follows: freeboard, pH, DO, electrical conductivity, total dissolved solids, nitrate, nitrite, and Kjeldahl nitrogen at a frequency of two times per year.

RESPONSE: Central Valley Water Board staff agrees to reduce monitoring requirements for the ponds as shown in strikethrough below.

Table E-9. Pond(s) Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen[1]	mg/L	Grab	1/week	
pH	Standard Units	Grab	1/week	
Freeboard	feet	--	1/week	
Total Dissolved Solids	mg/L	Grab	2/year[2]	
Electrical Conductivity	µmhos/cm	Grab	2/year[2]	
~~Ammonia (as N)~~	~~mg/L~~	~~Grab~~	~~2/year[2]~~	
Nitrate (as N)	mg/L	Grab	2/year[2]	
Nitrite (as N)	mg/L	Grab	2/year[2]	
Total Kjeldahl Nitrogen	mg/L	Grab	2/year[2]	
~~Boron~~	~~mg/L~~	~~Grab~~	~~2/year[2]~~	

~~Chloride~~	~~mg/L~~	~~Grab~~	~~2/year~~[2]	
~~Dissolved Iron~~	~~mg/L~~	~~Grab~~	~~2/year~~[2]	
~~Dissolved Manganese~~	~~mg/L~~	~~Grab~~	~~2/year~~[2]	
~~Sodium~~	~~mg/L~~	~~Grab~~	~~2/year~~[2]	

[1] Samples shall be collected at a depth of one foot from each pond in use, opposite the
Samples shall be collected between 0700 and 0900 hours.

[2] Grab samples shall be collected from each pond at the specified sampling frequency
combined to create one composite sample.

Discharger Comment No. 13 – II.C. Rationale for Interim Nitrate Plus Nitrite Effluent Limitation

The discussion explaining the rationale for the calculated interim nitrate plus nitrite effluent limitation contains several factual errors and inconsistencies not noted in the City's overall discussion of concerns regarding this proposed limitation.

RESPONSE: See Response to Discharger Comment No. 9.

Discharger Comment No. 14 – II.C.2. Collection System Provision

The Discharger believes that the discussion in the Fact Sheet (section VI.B.5.ii) regarding the City's collection system is not consistent with Provision VI.C.5.c and has requested the final paragraph be deleted in its entirety and the addition explaining that, "The Discharger has applied and has been approved for coverage under Order 2009-0003-DWQ" should be added, as shown below.

> ii. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on May 2, 2006. The Monitoring and Reporting Requirements for the General Order were amended by Water Quality Order WQ 2008-0002-EXEC on February 20, 2008. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. <u>The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.</u>
>
> ~~Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.~~

RESPONSE: Central Valley Water Board staff concurs and have modified the Fact Sheet as requested by the Discharger.

Discharger Comment No. 15 – II.C.3. Pond Monitoring (Tentative Order, p. F-94).
As indicated above, the pond monitoring needs to be substantially revised. In conjunction with such changes, the discussion in the Fact Sheet regarding pond monitoring also needs to be revised. Moreover, as previously discussed regarding the need for, and type of pond monitoring, measurement of electrical conductivity is not necessary in order to ensure the proper operation of the ponds for the control of odors. Lastly, monitoring of odors is not included in the MRP.

RESPONSE: See Response to Discharger Comment No. 12.

Discharger Comment No. 16 – II.D. Time Schedule Order (TSO) Milestone Due Dates
The Discharger requests two of the internal due dates within the TSO be revised to ensure compliance with such milestones. Specifically, the Discharger requests the following revisions, shown below in strikeout/underline format:

Item	Task	Date Due
i.	**Annual Progress Reports.** The progress reports for DCBM and CDBM shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.	1 June, annually
ii.	**Submit a report demonstrating that a Request for Proposal for computer control programmer has been issued**	Complete
iii.	**Evaluate efficacy of expanded mixing zone and dilution credit and site-specific objectives for DBCM and BDCM.** Submit a report that includes: 1) an evaluation of an expanded mixing zone, dilution credit, and site-specific objectives for DBCM and BDCM, 2) a discussion of the preferred compliance alternative(s), 3) feasibility of compliance alternative(s) and funding sources, and 4) schedule for implementing the alternative(s).	1 April 2014
iv.	**Conduct identified evaluations, pilot studies, modeling, clean backwash lagoon, identify control system programmer.** Submit a report that includes: 1) a summary of evaluations conducted, 2) pilot studies implemented, 3) modeling results, 4) results of backwash lagoon cleaning, and 5) selected computer control programmer.	1 May 2014
v.	**Design and construct infrastructure and programming improvements identified by evaluations, studies and modeling.** Submit the following documents: 1) 90% design report, 2) 100% design report, 3) signed CEQA/NEPA notice of determination (as applicable), 4) notice of completion for infrastructure and programming improvement project(s), 5) "as-built" drawings, and 6) City of Stockton City Council approval of implementation project(s).	~~1 April 2016~~ 10 October 2016
vi.	**Startup and testing of upgrades, consistent compliance with DBCM and BDCM standard.** Submit a report that includes an evaluation of compliance with DBCM and BDCM final limits before and after implementing improvements.	~~28 February 2017~~ 28 August 2017
vii.	**Full compliance with effluent limitations for DBCM and BDCM.** Submit report demonstrating compliance with the final limits.	1 July 2018

RESPONSE: Central Valley Water Board staff concurs and has made the requested changes to the due dates shown above.

Discharger Comment No. 17 – Attachment B. Additional Comments and Factual Errors
The Discharger submitted Attachment B, which outlines factual corrections and requests for minor edits to the proposed Permit.

RESPONSE: Central Valley Water Board staff concurs with the edits proposed in Attachment B and have made the changes to the proposed Permit, with minor exceptions, discussed in the following four comments.

1) Dissolved Oxygen (DO) Effluent Monitoring
There are no effluent limitations for dissolved oxygen (DO), therefore the 1/day monitoring of effluent DO is unnecessary and the City requests DO be removed from Table E-3.

RESPONSE: Comments provided by USEPA have caused a change to the proposed Permit which in turn makes the Discharger's comment regarding effluent monitoring for DO irrelevant. Central Valley Water Board staff has retained the effluent limitations for dissolved oxygen from the previous Order R5-2008-0154. Therefore, 1/day DO effluent monitoring is necessary to determine compliance with effluent limitations.

2) p. E-9, Table E-6. Receiving Water Monitoring Requirements for Ammonia
The Discharger has requested to remove receiving water monitoring requirements for ammonia, concurrent with pH and temperature, contending it is unnecessary as the proposed tentative Permit does not contain a receiving water limitation for ammonia. Additionally, the Discharger believes that since compliance with ammonia limitations is determined at the effluent monitoring location (EFF-001), not in the receiving water, they should not be required to make a determination about ammonia toxicity in the receiving water.

RESPONSE: In August 2013, U.S. EPA published Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater 2013 (2013 Ammonia Criteria Document). The 2013 U.S. EPA freshwater criteria are generally more stringent than the 1999 criteria due to the use of new data for several freshwater mussels and invertebrate species. Additionally, the acute criteria magnitude is now affected by pH and temperature. The ammonia criteria can significantly vary depending on the pH and temperature used in calculating the criteria. The 2013 Ammonia Criteria Document provides the equations to calculate the applicable acute and chronic criteria; however, it does not provide guidelines on how states should select the pH and temperature for a site when calculating the site-specific ammonia criteria. There are different methods for selecting the appropriate site-specific pH and temperature.

In order to estimate ammonia criteria and determine ammonia effluent limitations for NPDES permits, Central Valley Water Board staff use a steady-state model approach. This approach analyzes combinations of worst-case scenarios utilizing available ammonia, pH and temperature data from the Discharger's effluent and receiving water. After evaluating the effluent and receiving water data, protective criteria will be selected and will allow for realistic effluent limitations. This can only transpire where a sufficient amount of effluent and receiving water data and information exists to support criteria that are fully protective and do not allow for toxicity to exist when mixing with the receiving water. Receiving water monitoring for ammonia is necessary for this evaluation, and is also needed to evaluate compliance with the surface water ammonia criteria to ensure compliance with the Basin Plan's narrative toxicity objective.

3) p. E-21, 5. Pretreatment Reporting Requirements.
Item a in this section requires annual priority pollutant monitoring for the influent and effluent. The annual priority pollutant monitoring frequency for the effluent conflicts with section VIII.D of the MRP, which specifies bi-monthly monitoring for one year in 2017. The City requests that the pretreatment program influent and effluent monitoring requirements be modified to be consistent with section VIII.D. Also, the pretreatment reporting requirements prescribe sludge sampling method. Sludge sampling is addressed in section VIII.A of the MRP. Therefore, the City requests the pretreatment reporting section be modified to cross-reference section VIII.A. Requested edits are shown below.

An annual report shall be submitted by **28 February** and include at least the following items:

a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of ~~an annual~~ full priority pollutant scan <u>on influent and effluent samples collected bi-monthly for one year</u>. The Discharger is not required to sample and analyze for asbestos. The Discharger shall submit the results of the annual priority pollutant scan electronically to the Central Valley Water Board using the State Water Board's CIWQS Program Website.

Sludge <u>sampling and analysis</u> shall be <u>conducted according to Section VIII.A of the monitoring and reporting program.</u> ~~sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually.~~ The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

RESPONSE: Central Valley Water Board staff does not concur. This request appears to align the monitoring requirements for the effluent in the Effluent and Receiving Water Characterization monitoring required in Section VIII.D of the Monitoring and Reporting Program (Attachment E), with this pretreatment program monitoring. The purpose of the annual pretreatment program monitoring is to maintain local limits for the Discharger's pretreatment program. Based on USEPA guidance for development of local limits[10], at least annual monitoring is necessary for this purpose. Whereas, the monitoring required for the Effluent and Receiving Water Characterization monitoring is for gathering information on the discharge for the next permit renewal. This is required to be conducted bi-monthly during 2017. This monitoring cannot be substituted for the annual pretreatment monitoring. However, the annual pretreatment monitoring in 2017 can be used as one of the Dischargers effluent samples for the Effluent and Receiving Water Characterization monitoring.

[10] Local Limits Development Guidance, July 2004 (EPA 833-R-04-002A)

Central Valley Water Board staff concurs partially with changes to streamline the sludge monitoring requirements in the second paragraph and have modified the second paragraph as follows:

> Sludge sampling and analysis shall be conducted according to Section VIII.A of the monitoring and reporting program, and sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. ~~The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually.~~ The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

4) Constituents with Limited or Insufficient Data

The Discharger has requested to have section IV.C.3.c in the Fact Sheet, referred to as "Constituents with Limited or Insufficient Data," renamed to "Constituents with Inconclusive Reasonable Potential." The Discharger contends the constituents listed in this section (diazinon, chlorpyrifos, and salinity related parameters) have sufficient data to characterize concentrations.

> **RESPONSE:** Central Valley Water Board staff does not agree to change the heading for this section. Insufficient data was provided for diazinon and chlorpyrifos based on the method detection limit (MDL) being above the chronic water quality objective for chlorpyrifos. The MDL used by the Discharger to analyze chlorpyrifos was 0.017 µg/L and the chronic criterion is 0.015 µg/L. Therefore, reasonable potential to determine compliance with the waste load allocation in the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load cannot be determined. In regards to the salinity parameters, the State Water Resources Control Board is currently revising the Bay-Delta Plan, and its draft revision includes consideration of application of the salinity objectives to municipal discharges. Until the Bay-Delta Plan is revised, the Central Valley Water Board is unable to conduct a reasonable potential analysis for salinity for this discharge.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA)

CVCWA Comment No. 1 – I. Reasonable Potential Analysis for Nitrate and Nitrite.

The Tentative Order includes a proposed average monthly water quality-based effluent limit for nitrate plus nitrite (as N) of 10 mg/L, because the Regional Water Board finds the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Primary Maximum Contaminant Level (MCL), which is used to implement the narrative chemical constituents objective, and because the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative water quality objectives for biostimulatory substances and taste and odors. CVCWA has serious concerns regarding the implementation of these narrative objectives in the Tentative Order.

To implement the chemical constituents objective for protection of municipal supply (MUN) beneficial use, the Tentative Order correctly refers to the primary MCL of 10 mg/L for nitrate

plus nitrite. This analysis is consistent with federal regulations. Specifically, where the permitting agency must establish effluent limits using a calculated and demonstrably protective water quality criterion; Clean Water Act section 304(a) recommended criteria; an indicator parameter; or state policy interpreting a narrative water quality criterion supplemented with other information. The Basin Plan contains such a policy: the Policy for Application of Water Quality Objectives. The Policy in general provides that where compliance with a narrative objective is required, the Regional Board will adopt numeric limitations, on a case-by-case basis, which will implement the narrative objective.

However, after correctly identifying a numeric criterion to interpret the chemical constituents objective for protection of MUN, i.e., the Primary MCL, the Tentative Order fails to identify any numeric criterion to implement the narrative biostimulatory substances objective and narrative taste and odors objective. This analysis conflates the numeric criterion and narrative objectives that the Regional Water Board purports to be implementing. The Regional Water Board must identify a relevant numeric criterion and other information, which must be substantiated in the record.

RESPONSE: See responses to Discharger Comments Nos. 1 – 6, above.

CVCWA Comment No. 2 – II. Effluent Limits Based on "Technical Capability" and "Reasonableness"

CVCWA comments that "technical capability" and "zone of reasonableness" should not be used as the basis for determining the nitrate plus nitrite effluent limit because is ignoring the applicable regulations since the effluent limits are based on subjective evaluation that a limit is reasonable and can be readily achieved.

RESPONSE: See responses to Discharger Comments Nos.1 – 6, above. As described in the above responses, the board is not solely basing the effluent limits on "technical capability" and "zone of reasonableness." The limitations are based on consideration of the Basin Plan's narrative objectives for biostimulatory substances and taste and odor, information that there have been algal blooms in the state water project conveyance system signifying the need to reduce nutrient inputs, concerns with the POD, and consideration that the limitation is within the technical capabilities and zone of reasonableness for a POTW.

CVCWA Comment No. 3 – III. Mixing Zone Analysis for Nitrate plus Nitrite.

CVCWA requests for Central Valley Water Board staff to reconsider the Discharge's request for a mixing zone, and revise the proposed permit to include a nitrate plus nitrite effluent limit incorporating appropriate dilution credits. CVCWA comments that basis for Central Valley Water Board staff denying a mixing zone is based on the MUN use but it is improper under the State Board's Order WQ 2012-0013. Additionally, CVCWA comments that the proposed Permit includes a general statement regarding the adverse effects of nutrients and nutrient loading in the Delta with limited reference (one study) to support the statements.

RESPONSE: See responses to Discharger Comments Nos.1 – 6, above.

CVCWA Comment No. 4 – IV. Compliance Schedule for Nitrate plus Nitrite.

CVCWA comments that the requirement of "Approval of Project by District Board" is unnecessary and burdens the Discharger Board's decision making process. CVCWA requests for Central Valley Water Board staff to remove the "Rate Analysis Report" because it does not account for contingencies likely to occur during project development or legal requirements that apply to a public agency. CVCWA also requests to delay the "Financing Plan" to allow the Discharger additional flexibility to determine financial options.

RESPONSE: See response to Discharger Comment No. 9.

CVCWA Comment No. 5 – V. Calculation of Interim Mercury Limit.
CVCWA remains concerned with the Regional Water Board's approach for calculating the interim effluent limitations for total mercury. In the tentative Order, it appears that the Regional Water Board is using actual flow data rather than permitted flow to calculate the mass limitation. In the City's case, this difference is significant as the City is currently discharging at approximately half of its permitted flow of 55 MGD. The City risks noncompliance with the limits as flows increase.

Furthermore, the tentative Order uses total mercury effluent data collected from 2009-2012. Once again, in the City's case, using this data is inappropriate as the City made significant plant upgrades in 2006 prior to adoption of the methylmercury Basin Plan amendment. In the Staff Report, Regional Water Board staff agreed that dischargers would not be unfairly penalized because of reasonable control actions to reduce mercury during Phase I of the control program. Specifically for the City, the Staff Report acknowledged the effect the City's upgrades had on its mercury levels.

CVCWA respectfully requests that the interim total mercury effluent limit be recalculated using permitted flow and pre-upgrade effluent data.

RESPONSE: During Phase 1, the Delta Mercury Control Program requires POTWs to limit their discharges of inorganic (total) mercury to facility performance-based levels. The interim inorganic (total) mercury effluent mass limit is to be derived using current, representative data. The interim limits in the tentative Permit were developed using current, representative data, in accordance with the Delta Mercury Control Program. These performance-based limits were calculated considering the current loadings at current flows for the Facility. The Delta Mercury Control Program does not specify use of permitted flow for the interim limits. The tentative Permit includes an interim loading limit for total mercury of 57 grams/year.

However, the Delta Mercury Control Program also requires that interim limits established during Phase 1 and allocations not be reduced as a result of early actions that result in reduced inorganic (total) mercury and/or methylmercury in discharges. Central Valley Water Board staff agrees with CVCWA that the Discharger has implemented early reductions of mercury and would be unfairly penalized if only the current data were considered in calculating the interim limits. Therefore, the interim limits for mercury have been recalculated using the same dataset that was used to develop the Discharger's waste load allocation (i.e., August 2004 – July 2005). This period is prior to the Discharger constructing tertiary filtration, and is consistent with the intent to not penalize dischargers for early

implementation of mercury controls. The proposed Permit has been modified to include an interim limit for total mercury of 217 grams/year.

CVCWA Comment No. 6 – VI. Collection System.
The discussion of the collection system in the Fact Sheet is not consistent with the Permit Findings. Accordingly, CVCWA suggests the following revisions to page F-88 of the Fact Sheet.

> ii. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on May 2, 2006. The Monitoring and Reporting Requirements for the General Order were amended by Water Quality Order WQ 2008-0002-EXEC on February 20, 2008. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. <u>The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.</u>
>
> ~~Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.~~

RESPONSE: See response to Discharger Comment No. 14.

STATE WATER CONTRACTORS AND SAN LUIS & DELTA MENDOTA WATER AUTHORITY (WATER CONTRACTORS)

Water Contractors Comment No. 1. Nitrate plus Nitrite
The Water Contractors support the tentative Permit, and in particular support the revised ammonia limits based on the 2013 National Ambient Water Quality Criteria for Ammonia and the more stringent nitrate plus nitrite limit of 10 mg/L.

RESPONSE: Comment noted.

CALIFORNIA URBAN WATER AGENCIES (CUWA) COMMENTS

CUWA Comment No. 1. Monitoring Requirements
CUWA requests the Discharger continue monitoring the effluent weekly for total Kjeldahl nitrogen (TKN) and the receiving water weekly/monthly for nitrogen constituents (nitrate, nitrite,

TKN) contending that these are constituents of concern for the Facility until denitrification facilities are constructed and operational.

RESPONSE: Central Valley Water Board staff has concluded that the tentative Permit requires sufficient monitoring as part of the Effluent and Receiving Water Characterization Monitoring (Fact Sheet, Table E-10). Bi-monthly (i.e. every other month) samples will be collected from the effluent and upstream receiving water and analyzed for TKN, nitrate and nitrite. Several years of effluent monitoring for TKN have been collected resulting in more than 200 data points. Additionally, the Delta Regional Monitoring Program (RMP) is under development by the Central Valley Water Board and expected to be adopted in 2014. The Delta RMP is expected to include receiving water monitoring for drinking water constituents of concern in the San Joaquin River.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) COMMENTS

USEPA Comment No. 1. Final Effluent Limits for Nitrate and Ammonia
USEPA supports the permit including final limits for nitrate (as N) at 10 mg/L, based on the monthly average, assuming such limits are demonstrated to be consistent with wasteload allocations in the Stockton Deep Water Ship Channel TMDL. USEPA points out that while they support the 10 mg/L limit, they recognize it has yet to be determined if that value is sufficiently protective for all applicable beneficial uses within the Delta. Given the uncertainty about nutrient impairments and necessary control levels, the final permit should not include the Central Valley Water Board's alternative nitrate limit option which provide for higher nitrate effluent limits including dilution in the vicinity of the discharge.

USEPA also supports implementing the updated 2013 Freshwater Aquatic Life Ambient Water Quality Criteria for Ammonia (2013 Ammonia Criteria) and supports the proposed effluent limits for ammonia in the proposed Permit.

RESPONSE: Central Valley Water Board staff appreciates the support of the nitrate plus nitrite (as N) effluent limitation as well as the ammonia limitations based on the new 2013 Ammonia Criteria.

USEPA Comment No. 2. Consistency of Stockton Permit with the Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen (DO) Total Maximum Daily Load (TMDL)
USEPA is concerned that the proposed Permit does not include dissolved oxygen effluent limits that are consistent with wasteload allocations and assumptions contained within the TMDL, which was approved by USEPA on 27 February 2007. USEPA believes Central Valley Water Board staff's decision not to carry forward the DO effluent limits from previous Order R5-2008-0154 may be inconsistent with the TMDL and should be reinstated in the permit unless it can be demonstrated the nitrate limit will result in attainment of the DO wasteload allocation. USEPA requests the proposed Permit include discussion of the TMDL as well as staff analyses of the Facility's discharge of DO levels and oxygen demanding substances and attain DO levels in the receiving waters.

RESPONSE: Central Valley Water Board staff concurs and have retained the effluent and receiving water limitations for DO from Order R5-2008-0154. Resolution R5-2005-0005 was adopted by the Central Valley Water Board on 27 January 2005, and approved by the USEPA on 7 February 2007, establishing the Control Program for Factors Contributing to

the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel Portion of the San Joaquin River, and is applicable to the Facility's discharge. Although the Facility improvements have reduced the discharge of oxygen demanding substances substantially and have resulted in increased DO in the Deep Water Ship Channel, the river, at times, continues to exceed the water quality objectives. Therefore, in accordance with the Control Program the proposed Order does not relax the DO effluent limitations. The proposed Order has been modified to include the effluent limitations for DO from the previous Order.

USEPA Comment No. 3. Monitoring Requirements for Edge of Mixing Zone and Total Nitrogen

USEPA requested the proposed Permit include receiving water monitoring at the edge of the mixing zone the proposed Permit allows for trihalomethanes (THMs). In addition, USEPA requested the Facility's effluent be monitored for total nitrogen.

RESPONSE: Central Valley Regional Board staff does not concur that monitoring for THMs is necessary at the edge of the mixing zone. The human carcinogen mixing zone and dilution credits were developed based on water quality modeling for reasonable worst-case conditions. Edge of a mixing zone monitoring for other constituents may have merit. However, in this situation receiving water monitoring at the edge of the human carcinogen mixing zone under tidal conditions, does not provide useful information. Mixing zones for human carcinogens are developed for long-term dilution, so there may be periods when the THM concentrations may exceed criteria at the edge of the mixing zone. This has little meaning, because the exposure periods must be evaluated over long periods. Also, due to the complex river dynamics for the San Joaquin River in the vicinity of the discharge, water quality modeling is needed to determine the critical conditions. The California Department of Water Resources Delta Simulation Model 2 (DSM2) was used to estimate the size of the mixing zone. DSM2 is a well calibrated and validated model for the Delta and provides the best information to establish protective effluent limits under the tidal conditions in the vicinity of the discharge.

With regard to the addition of effluent monitoring for total nitrogen, this monitoring is already required, though not specifically listed in the Monitoring and Reporting Program as a constituent. Total nitrogen is the sum of total kjeldahl nitrogen (i.e., sum of ammonia, organic and reduced nitrogen), nitrate, and nitrite. Monitoring is required in the proposed Permit for nitrate (as N), nitrite (as N), ammonia (as N) and total kjeldahl nitrogen as part of the Effluent and Receiving Water Characterization Monitoring, Table E-10.