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January 31, 2012

Mr. Bill Johnson
Mr. Vince Christian
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject Comments of Public Water Agencies on Tentative Order No. R2-2011-XXXX, NPDES No. CA0037648 for the Central Contra Costa Sanitary District Wastewater Treatment Plant

Dear Messrs. Johnson and Christian:

The State Water Contractors[1] and the San Luis & Delta-Mendota Water Authority[2] ("Public Water Agencies") on behalf of and with each of their member agencies respectfully submit the additional attached comments on the tentative renewal of the National Pollutant Discharge Elimination System permit for the Central Contra Costa Sanitary District's Wastewater Treatment Plant,

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[1] The State Water Contractors (SWC) organization is a nonprofit mutual benefit corporation that represents and protects the common interests of its 27 member public agencies in the vital water supplies provided by California's State Water Project ("SWP"). Each of the member agencies of the State Contractors holds a contract with the California Department of Water Resources ("DWR") to receive water supplies from the SWP. Collectively, the SWC members deliver water to more than 25 million residents throughout the state and more than 750,000 acres of agricultural lands. SWP water is served from the San Francisco Bay Area, to the San Joaquin Valley and the Central Coast, to Southern California. The SWC's members are: Alameda County Flood Control and Water Conservation District Zone 7; Alameda County Water District; Antelope Valley-East Kern Water Agency; Casitas Municipal Water District; Castaic Lake Water Agency; Central Coastal Water Authority; City of Yuba City; Coachella Valley Water District; County of Kings; Crestline-Lake Arrowhead Water Agency; Desert Water Agency; Dudley Ridge Water District; Empire-West Side Irrigation District; Kern County Water Agency; Littlerock Creek Irrigation District; Metropolitan Water District of Southern California; Mojave Water Agency; Napa County Flood Control and Water Conservation District; Oak Flat Water District; Palmdale Water District; San Bernardino Valley Municipal Water District; San Gabriel Valley Municipal Water District; San Gorgonio Pass Water Agency; San Luis Obispo County Flood Control & Water Conservation District; Santa Clara Valley Water District; Solano County Water Agency; Tulare Lake Basin Water Storage District.

[2] The San Luis & Delta Mendota Water Authority (Authority) is a joint powers authority, established under California's Joint Exercise of Powers Act. (Gov. Code, § 6500 et seq.). The Authority is comprised of 29 member agencies, 27 of which hold contractual rights to water from the federal Central Valley Project (CVP). The Authority member agencies have historically received up to 3,100,000 acre-feet annually of CVP water for the irrigation of highly productive farm land primarily along the San Joaquin Valley's Westside, for municipal and industrial uses, including within California' Silicon Valley, and for publicly and privately managed wetlands situated in the Pacific Flyway. The areas served by the Authority's member agencies span portions of seven counties encompassing about 3,300 square miles, an area roughly the size of Rhode Island and Delaware combined. The Authority's members are: Banta-Carbona Irrigation District; Broadview Water District; Byron Bethany Irrigation District (CVPSA); Central California Irrigation District; City of Tracy; Columbia Canal Company (a Friend); Del Puerto Water District; Eagle Field Water District; Firebaugh Canal Water District; Fresno Slough Water District; Grassland Water District; Henry Miller Reclamation District #2131; James Irrigation District; Laguna Water District; Mercy Springs Water District; Oro Loma Water District; Pacheco Water District; Pajaro Valley Water Management Agency; Panoche Water District; Patterson Irrigation District; Pleasant Valley Water District; Reclamation District 1606; San Benito County Water District; San Luis Water District; Santa Clara Valley Water District; Tranquillity Irrigation District; Turner Island Water District; West Side Irrigation District; West Stanislaus Irrigation District; Westlands Water District.

including the San Francisco Bay Regional Water Quality Control Board ("Regional Board") staff's draft Response to Comments that was shared with the Public Water Agencies and other interested parties on January 20, 2012.

We respectfully request that the Regional Board consider these further comments before taking action on the proposed permit and thank the Regional Board for the additional opportunity to present our views.

Sincerely,

Daniel G. Nelson
Executive Director
San Luis & Delta-Mendota Water Authority

Terry L. Erlewine
General Manager
State Water Contractors

Attachment

Public Water Agencies' Supplemental Comments On the Tentative NPDES Permit Renewal For the Central Contra Costa Sanitary District Wastewater Treatment Plant January 31, 2012

The State Water Contractors ("SWC") and the San Luis & Delta-Mendota Water Authority ("SLDMWA" or "Authority") and their members (collectively, "Public Water Agencies") appreciate the opportunity to comment further on the tentative renewal of the National Pollutant Discharge Elimination System permit ("Tentative Order") for the Central Contra Costa Sanitary District's ("CCCSD") Wastewater Treatment Plant ("Treatment Plant"), including the draft Response to Written Comments ("Draft Response") that Regional Board staff provided on January 20, 2012. These comments supplement our earlier comments. *See* Public Water Agencies' Comments on the Tentative NPDES Permit Renewal for the Central Contra Costa Sanitary District Wastewater Treatment Plant (October 31, 2011), (including digital disc with supporting evidence) ("Public Water Agencies' Comments").

I. The Regional Board should consider substantial information that further establishes the nexus between discharges and impacts on aquatic life

The Draft Response acknowledges that "available scientific information provides cause for concern" about the ammonium impacts caused by CCCSD's treatment plant discharge. Draft Response at 5. As outlined below, we support the Regional Board's commitment to work with the local discharger group Bay Area Clean Water Agencies ("BACWA") to develop more data documenting the impacts of nutrient discharges into the Bay-Delta ecosystem. Draft Response at 4, 9. Indeed, we agree that additional study focused on discharges of ammonium and other nutrients will be helpful in further defining the scope of problems caused by nutrient discharges.[3]

More discharge impact data will be useful, given the importance of Suisun Bay, an embayment within the defined critical habitat for threatened and endangered aquatic species and part of the greater San Francisco Bay/Sacramento-San Joaquin Delta Estuary system (the "Bay-Delta") - the largest estuary on the United States' Pacific coast. The CCCSD Treatment Plant in fact discharges directly into habitat occupied by delta smelt and longfin smelt. *See* Attachment 1 (maps depicting location of Delta smelt and longfin smelt and points of discharge for the CCCSD and Vallejo Sanitation and Flood Control District treatment plants).

However, we respectfully disagree with the contention that current information is not sufficient to require CCCSD to remove nutrients by applying nitrification treatment to its discharge. *See* Draft Response at 4 ("We believe more information is needed before imposing an ammonium limit that requires additional treatment."). Rather, the best available science shows that the ammonium in the 40 million gallons per day of secondary treated wastewater discharged by CCCSD is harming aquatic life right now. Among other things, the discharge is disrupting the Suisun Bay food web that sustains delta smelt and longfin smelt. It is true that the scientific community's understanding of the harmful effects of excessive nutrient discharges is advancing rapidly, but that is no reason to call the scientific basis for requiring nutrient removal insufficient. Instead, new field data and resulting analyses continue to confirm the causal nexus

[3] To that end, representatives of the Public Water Agencies recently met with representatives of CCCSD to discuss the Tentative Order and explore whether there may be ways the parties might reach agreement on a path forward to propose to the staff and Regional Board. We intend to continue those discussions in good faith in the time remaining before the scheduled February 8, 2012 hearing on the Tentative Order.

between excess ammonium from treatment plant discharges and the inhibition of diatom growth at the foundation of the food web essential to aquatic life:

> Publication of Dugdale work. The ammonium inhibition studies by Drs. Dugdale, Wilkerson and Parker were recently published in a well respected scientific journal. *See* Parker, A.E., et al. Elevated ammonium concentrations from wastewater discharge depress primary productivity in the Sacramento River and the Northern San Francisco Estuary. *Mar. Pollut. Bull.* (2012) doi:10.1016/j.marpolbul.2011.12.016 (Attachment 2) ("These results indicate that control of river nutrients, especially NH_4 loading, is essential to management efforts to restore the river/estuary to a productive condition."). This significant, peer reviewed evidence must be seriously considered now – not after another five years of continued high ammonium discharges into critical habitat – as the Regional Board considers how to manage wastewater discharges into Suisun Bay.
>
> Fall 2011 bloom. In addition, during fall 2011, a diatom bloom occurred when ammonium concentrations in receiving waters were reduced to levels that allow diatoms to uptake nitrate and grow. The data documenting this diatom bloom were collected as part of the Interagency Ecological Program (IEP) Fall X2 adaptive management studies and were reported by Dr. Dugdale at the November 17, 2011, meeting of the IEP Estuarine Ecology Team. These additional field data support the conceptual nitrate uptake model Dugdale, Wilkerson and Parker have developed through testing and studies on diatom productivity. Indeed, the fall 2011 diatom bloom is the second in two years that fits squarely with the conclusion that high ammonium levels from treatment plant discharges impair nitrate uptake by diatoms, which reduces their productivity and inhibits diatom blooms. These new data are compelling and should be considered now, not after another five years of water quality degradation.
>
> Increase in zooplankton growth following blooms. A corollary to the conclusion developed by Dr. Dugdale and others is that if the diatom blooms were no longer inhibited by excessive nutrients (*i.e.,* caused by treatment plant ammonium discharges), then the species that rely on diatoms for their food source will thrive. Thus, following spring 2010 diatom blooms (as documented by the Regional Board's own SWAMP monitoring program), one would predict an increase in zooplankton abundance, if diatom growth were in fact limiting zooplankton growth. And, in fact, that is exactly what occurred, as documented by the analyses recently completed by staff with the California Department of Fish and Game at the request of the Regional Board (April Hennessy, personal communication, May 20, 2011) (*See* Attachment 3). Again, the best scientific data available confirm ammonium discharge impacts, are compelling, and should be considered now, not after another five years of water quality degradation.

Although some of the preceding analyses will undergo further development and peer review, they constitute best available science right now. Accordingly, these data provide further support for the conclusion that reducing ammonium from treatment plant discharges will allow diatom blooms to rebound, which will restore the food source that aquatic life, including delta smelt and longfin smelt, need to survive.

Indeed, despite the unwillingness of some scientists to accept the expanding evidence, ***none*** of the field data collected over the past two years have contradicted the core conclusion that ammonium is suppressing diatom growth, which is essential to delta smelt and longfin smelt. All have, in fact, supported it.

While we agree that there are other factors also impacting the Bay-Delta food web, such as benthic grazing by invasive bivalves (clams), the Regional Board should not delay nitrification at treatment plants pending further studies of ammonium inhibition of productivity in the context of other possible factors. Draft Response at 5. In fact, Dr. Dugdale and his colleagues at San Francisco State University (Dugdale et al. 2007) acknowledge that several factors must coincide for a diatom bloom to occur in Suisun Bay, including sufficient light availability and low grazing pressure by the invasive clams. However, until ammonium concentrations are reduced below the inhibitory level of 0.056 mg L-1, field and laboratory studies all indicate that significant blooms are unlikely to occur regardless of the other factors.

Further, the Regional Board should not delay nitrification at wastewater treatment plants pending further studies on the relative contributions of the various Suisun Bay ammonium sources to Suisun Bay ammonium concentrations and the contention that a large portion of CCCSD's ammonia flows out of Suisun Bay soon after discharge. Draft Response at 5. In fact, Dugdale et al. (2007) and Wilkerson et al. (2006) demonstrate the same inhibitory effect of ammonium in San Pablo and Central San Francisco Bay, albeit at lower frequency than Suisun Bay. The discharge of thousands of pounds of ammonium daily from CCCSD clearly contributes significantly to the total load of ammonium in the system.

In addition, there are sufficient data from historical monitoring by the U.S. Geological Survey (USGS) along a transect through Suisun Bay to demonstrate the direct impact of CCCSD's ammonia discharges on the ammonia concentrations in Suisun Bay. Figure 1 below presents annual average ammonium concentrations for USGS monitoring stations from 1988 to 2004. These data clearly show an increase in ammonium concentration at Station 7, Avon Pier, near the CCCSD outfall. (See Attachment 4 for a map and list of the USGS water quality sampling stations.) While the USGS stopped sampling station 7 in 2004, we are not aware of any changed circumstances at CCCSD that would indicate today's results would be any different.

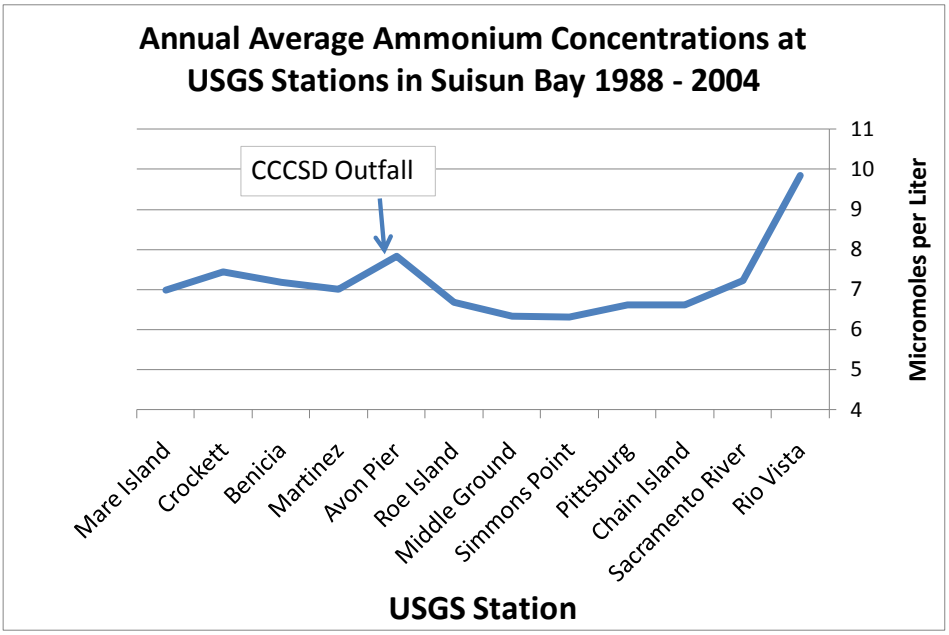

Figure 1. Annual average ammonium concentrations (micromoles per liter) at USGS water quality sampling stations in Suisun Bay from 1988 to 2004.

More science properly conducted can be useful. But that principle must be tempered by acknowledging the strength and consistency of the best available science showing that ammonium discharges from CCCSD and other treatment plants are degrading receiving waters, harming aquatic life and impairing beneficial uses. Most municipal wastewater treatment plants that discharge into the critical habitat of the Bay-Delta have already made the investments to nitrify their wastewater to remove ammonium. *See* Pubic Water Agencies' Comments at 6. Moreover, the conclusion that removing ammonium from a wastewater discharge will help restore aquatic life is well supported. The conclusion is supported by data and analyses, not only from the Bay-Delta system, but from around the world. *See* Glibert, P.M., D. Fullerton, J.M. Burkholder, J.C. Cornwell, and T.M. Kana. 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 (research collecting and reviewing the data from, among others, Hong Kong, Tunisia, Germany, Spain, Korea, and Japan, Florida, New York, and Washington D.C.).

In their comments, BACWA, an association of wastewater treatment plants that discharge treated effluent into the Bay-Delta, question the work of Dr. Glibert, a world renowned scientist and researcher. *Compare* BACWA CCCSD Comments at 8-10 (December 8, 2011) *with* Public Water Agencies' Comments at 7, 10-11 (citing Technical Memorandum). Yet, BACWA offers no substantive criticism of Dr. Glibert's peer reviewed 2011 article that analyzes data from numerous systems in the United States and around the world to document the well established relationship between balanced nutrient stoichiometry and the health of aquatic life. In fact, the wastewater treatment dischargers offer no counter-evidence, except to mistakenly assert that the 2011 peer-reviewed article relied on statistical analyses from an earlier 2010 peer-reviewed article by Dr. Glibert – an assertion that is simply false – and to remark that local scientists have not rebutted the findings and analysis in the 2011 article. These errors and assertions are not reasonable bases for this Board to disregard the conclusion of the best available science that has been peer reviewed, published and accepted and presented at conferences around the world.[4]

The Central Valley Regional Water Quality Control Board already requires such nutrient controls for essentially all municipal wastewater treatment plants discharging to Central Valley region streams draining to the Bay-Delta. And, as noted in our prior Comments, the Central Valley Regional Board required nitrification and denitrification in the new Permit adopted for the Sacramento Regional Wastewater Treatment Plant ("SRWTP"). We recognize that the SRWTP's large discharge (permitted at 181 million gallons per day average dry weather flow) is indisputably the predominant source of ammonium that impairs beneficial uses in receiving waters from the Sacramento River at Freeport all the way through Suisun Bay. The SRWTP discharges 14 tons per day of ammonium—28,000 pounds per day—while CCCSD's treatment plant discharges 7,000 pounds per day. Thus, CCCSD's ammonium discharge is comparatively smaller, representing only a fourth of that coming from the SRWTP. Meanwhile, the geographic zone of impact from CCCSD's ammonium discharge into far western Suisun Bay is

[4] BACWA cites to a pre-publication draft of a critique (Cloern, et al.) of the "CUSUM" statistical analysis in Dr. Glibert's 2010 paper. Dr. Glibert, et al. responded to that critique, and thus the final in press response is provided with this letter to complete the record. *See* Lancelot, C., P. Grosjean, V. Rousseau, E. Breton and P.M. Glibert. 2011. Rejoinder to "Perils of correlating CUSUM-transformed variables to infer ecological relationships (Breton et al. 2006, Glibert 2010)". *Limnology and Oceanography*, in press. (Attachment 5) *See also* Declaration of Dr. Patricia Glibert, May 3, 2011, (provided with Public Water Agencies' Comments, explaining statistical analyses). Importantly, at its core, the Cloern critique essentially only criticized how one aspect of the analysis (the "p" value) was applied; it does not negate the use of CUSUM or its Strengths as a tool. Moreover, the Cloern critique says absolutely nothing about nutrient ratios, and thus it in no way diminishes the core proposition that an imbalance in nutrient ratios is harmful to phytoplankton ecology. Finally, the BACWA suggestion that the 2011 results rely "at least, in part, on the statistical analysis" suggests a fundamental misunderstanding of that analysis. Dr. Glibert's 2011 paper expressly did not rely on the CUSUM analysis.

also smaller than the zone of impact from SRWTP's discharge, which extends from Freeport on the Sacramento River through Suisun Bay.

Even though there are important differences between the SRWTP discharge and CCCSD's discharge, time is of the essence with respect to limiting ammonium discharges from all municipal wastewater treatment plants affecting delta smelt, longfin smelt and other aquatic life in the Bay-Delta. It is well documented that water quality and aquatic resources within the Bay-Delta estuary are under stress. The estuary and many of its tributaries are listed as impaired, and the populations of both pelagic and anadromous fish have suffered serious declines in recent years. Indeed, as noted here and in our earlier comments, CCCSD discharges directly into habitat occupied by delta smelt and longfin smelt. That should not be allowed to continue unabated. Further delay in requiring nutrient controls means critical investments will not be made, allowing continued impairment of the ecosystem and impacts to aquatic life. We urge the Regional Board to reconsider the approach of its staff, to confirm that best available science is more than sufficient to conclude that ammonium discharges from CCCSD's treatment plant are harming aquatic life and impairing beneficial uses, and to impose final effluent limitations that require full nitrification.

II. However, if the Regional Board does not require nitrification, the final Permit should include firm requirements for studies and other measures

We submit that the best available science makes full nitrification at CCCSD's treatment plant inevitable. However, we understand from the Draft Responses that the Regional Board staff may not propose a Permit that would require full nitrification. Thus, in the alternative, as we outlined in our earlier Comments, if the Regional Board determines to proceed without full nitrification at this time, then the Regional Board should at least ensure that the new Permit includes a detailed, enforceable work plan and time schedule to complete the further studies the Regional Board decides are needed before it will require nitrification. To the extent the studies have been identified, those studies and that schedule should be directly incorporated into the Permit. To the extent they are still being defined in detail, the Permit should set a future, near-term date providing for the Executive Officer's approval of a detailed work plan and schedule for the studies, with an opportunity for the public to comment on the plan before it is finalized. The plan should have two principal objectives: (1) Establish a clear set of studies for determining whether permitted conditions are protective of aquatic life and beneficial uses in the Bay-Delta; and (2) Require interim steps to ensure that if the Regional Board decides to require nutrient removal, CCCSD will be ready to proceed expeditiously to implement Best Practicable Treatment or Control without further delay. *See* Pubic Water Agencies' Comments at 15-16.

A. The general outline is encouraging, but more clearly defined and enforceable study requirements are needed

The Draft Response circulated by Regional Board staff "mostly agrees" with the alternative further-study approach outlined in our original Comments. Draft Response at 9. Specifically, the Draft Response states an intention "to complete the studies necessary to develop ammonia limits that account for ammonium impacts," and that the staff is "working with BACWA to obtain this information …." Draft Responses at 8 and at 9. Further, the Draft Response indicates that the Tentative Order would "allow the Water Board to reopen the Permit and reconsider ammonium limits when more information is available. Prior to any Water Board action on this matter, it would provide opportunities for public participation, as it does with any permit reissuance or amendment." *Id.*

Those are positive developments. However, we have not yet seen the proposed revised Tentative Order, including how any special studies may be addressed, and so the Public Water Agencies reserve more specific comment until we have reviewed and considered the precise language implementing the preceding principles. The details will be critical to ensuring that the information is gathered in a timely way, that sound methods and appropriate scientific tools are used, that there is a clear path for evaluating the data and making a decision on whether to proceed with further treatment (i.e., nitrification), and that the Regional Board is committed to using its enforcement powers if necessary to prevent undue delays in the studies. Moreover, we recognize that the Regional Board has only recently received the proposal from BACWA, but that is not yet a fully formed work plan and will require additional work before it can be implemented. That said, we request that any Final Order[5] include the following:

1. Firm deadlines and procedures for funding and completing the SWAMP work. The Final Order should include a schedule for promptly completing the SWAMP sampling and associated studies outlined in the existing approved SWAMP plans, with assured funding of that work by CCCSD as a condition for receiving the new permit. *See* Taberski, Dugdale, et al., SWAMP Monitoring Plan 2011-2012, *San Francisco Bay Region Work Plan, Monitoring Spring Phytoplankton Bloom Progression in Suisun Bay* at 1 (Dec. 2010) .[6] This is a three year study and the commitment should be made to complete it.[7]

2. Firm deadlines and procedures for completing any other studies and data gathering, such as the work outlined by BACWA. The BACWA letter (referred to in the Draft Responses as "Exhibit 1") has a very general timeline at the close of the letter. While a helpful start, the letter does not yet include the level of detail and specificity that a complete and adequate work plan would provide. With more specificity, interested parties could better gauge whether the 5-year timeline outlined is reasonable or whether a shorter schedule would be appropriate.

   Also, the project needs benchmarks, such as interim deadlines and deliverables, to help the Regional Board manage the work and ensure that the work is defined clearly, conducted properly, and completed on time.

3. Additional monitoring is needed to properly characterize nutrient loads. A recent nutrient workshop hosted by BACWA emphasized the need to "get the loads right" when assessing the effects of a particular discharge. Accordingly, at this time, CCCSD should be required to characterize fully and adequately its nutrient concentrations, loadings, and fate including form and ratios of both organic and inorganic nitrogen and phosphorus in its discharge and receiving waters. This could then be a standard for the Regional Board to apply more generally, so that as other wastewater treatment plant permits come up for renewal, the Regional Board would require other similar dischargers to provide similar data.

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[5] Alternatively, these requirements should at a minimum be mandated by the Regional Board under California Code § 13267. Moreover, the work should be transparent such that members of the public, like the Public Water Agencies, will have access to the data collected and may comment on the plans and reports.

[6] http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/workplans/1112rb2wp.pdf

[7] BACWA points to the SWAMP work as being concluded "next year." BACWA CCCSD Comments at 3 (December 8, 2011). If CCCSD and BACWA claim the data are insufficient, they should be required to ensure that effort is completed. Moreover, as BACWA notes, certain of the Public Water Agencies are participating in the SWAMP effort. BACWA CCCSD Comments at 8. The fact that these agencies are participating in further scientific studies in no way diminishes the Agencies belief that conclusions can and should be drawn from the existing science.

However, it is unnecessary to complete an analysis of all potential nutrient-related water quality issues affecting the entire San Francisco Bay and the Bay-Delta before requiring CCCSD to stop discharging ammonium into western Suisun Bay. The impact of the ammonium discharge from CCCSD's Treatment Plant is a discrete and well-defined problem that can and must be resolved expeditiously. The Regional Board should reject any suggestion by BACWA or others that Treatment Plant upgrades must wait until all potential Baywide nutrient issues are fully understood and the dischargers and all other stakeholders unanimously agree on any remedies.

4. Further evaluation of copepod toxicity. CCCSD and BACWA allege concerns about Dr. Swee Teh's scientific work showing the toxic effects of ammonium on copepods. BACWA comments at 3-6. If the Regional Board has questions about the validity of Dr. Teh's results or the applicability of those results to the Suisun Bay environment, then we urge this Regional Board to require CCCSD to fund an investigation of copepod toxicity using Dr. Teh's or another appropriate methodology, beginning this year. Otherwise, we will continue to hear the same critiques raised about Dr. Teh's study when the permit is reopened or next up for renewal.[8]

5. Ensure continued progress in on-going nutrient studies. The science of nutrient impacts in the Bay-Delta estuary is developing rapidly, and the BACWA nutrient study work plan should incorporate on-going studies and identify priority follow-up studies to ensure that all relevant nutrient studies are considered. Specifically, the work plan should include studies evaluating the role of ammonium in primary productivity and zooplankton abundance, the significance of nutrient ratios, and the role of sediment biogeochemistry in nutrient fluxes.

6. An interim deadline for evaluating the new ammonium data. The Draft Response indicates that there would be a separate reopener procedure, but staff was reluctant to set an early deadline for reopening the permit before more studies have been completed. Draft Responses at 9 ("We did not, however, commit the Water Board to reopen the permit within 12 months. In our view, more time will be needed to complete necessary studies (note the schedule set forth in our correspondence with BACWA, Exhibit 1.").

We appreciate that early deadlines can present challenges. However, firm deadlines are critical to preventing undue delay and ensuring that all best efforts are made to have sufficient information in hand as soon as reasonably possible to provide the greatest likelihood that permitted conditions are protective of aquatic life. Accordingly, we suggest that the Regional Board include deadlines for all studies that cause data to be obtained and analyzed to allow the Regional Board to reconsider the ammonium limits no later than 30 months after the Regional Board completes the pending Permit proceeding. If the Regional Board reviews the newest data and still finds that the information is insufficient, it could make that finding and defer the matter to a later date.

[8] The Public Water Agencies dispute the objections to Dr. Teh's work, it was undertaken at the direction of the Central Valley Regional Water Quality Control Board – and was replicated when questions were first raised about aspects of his results. *See* Declaration of Swee Teh (April 29, 2011) (submitted with Water Agencies' Comments) and Swee Teh, et al., FINAL REPORT, Full Life-Cycle Bioassay Approach to Assess Chronic Exposure of Pseudodiaptomus forbesi to Ammonia/Ammonium Submitted to: Chris Foe and Mark Gowdy State Water Board / UC Davis Agreement No. 06-447-300 SUBTASK No. 14 (August 31, 2011), available at http://www.swrcb.ca.gov/rwqcb5/water_issues/delta_water_quality/ambient_ammonia_concentrations/tehetal_ammonium_exposure2011.pdf

B. Steps should be taken to ensure that CCCSD is positioned to move forward if nitrification is required in a future permit

Although the need for nitrification of CCCSD's discharge is evident right now, if the Regional Board decides to require further studies before imposing that requirement, we request that CCCSD be required to start taking steps now to prepare to add nitrification to its treatment process. Indeed, we recognize and support the efforts that CCCSD has already undertaken to assess what adding nitrification would entail (at least sufficient to prepare a scoping estimate of $70 million that is in the District's long term capital budget). Central Contra Costa Sanitary District, FY 2011-12 Capital Improvement Budget at FY 2011-12 CIB TP-13 - 14. We view all efforts made to position CCCSD to prepare for nitrification as a positive development, as otherwise CCCSD would be starting from scratch after an additional five years of water quality degradation impacts goes unmitigated.

However, there are additional steps that CCCSD has contemplated, that we suggest should be made requirements in the Final Order. For example:

1. Further scoping of nitrification alternatives, including pilot scale and pre-design work. We understand that CCCSD has suggested in its own budgeting documents that it may continue efforts to evaluate different nitrification technologies that are in use and/or are being developed. *See* Central Contra Costa Sanitary District, FY 2011-12 Capital Improvement Budget at FY 2011-12 CIB TP-21 ("The purpose of this project is to provide funding for pre-design and pilot scale system work that may be needed in the event that emerging regulatory initiatives require Treatment Plant process modifications to maintain compliance. Evolution of wastewater technology could also trigger an investigation under this project.") We support that goal, but urge the Regional Board to include a requirement in the permit that CCCSD complete the evaluation, including pilot scale and pre-design work, and provide a written report of its efforts to the Regional Board by December 31, 2013.

2. Site characterization. We further understand that CCCSD believes the property that it would contemplate using to construct the necessary facilities for nitrification would include land onto which waste materials were placed some decades ago. Accordingly, before the land could be used, we understand that permits may be needed and measures may be required to address site conditions. CCCSD has indicated that an initial step would be to conduct sufficient sampling to characterize the relevant portion of the site. We support that goal, but urge the Regional Board to include a requirement that CCCSD complete the sampling and provide a written report of its efforts to the Regional Board by December 31, 2012.

III. Proposed Permit Changes Should Be Approved

The Tentative Order should be revised as requested in the preceding further comments. To assist the Regional Board, the Public Water Agencies attach proposed revisions to the Tentative Order (*see* Attachment 6).

Thank you again for the opportunity to submit these additional comments.