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Comments on Matters to be Addressed at January 22, 2008 Workshop – Consideration of the Pelagic Organism Decline in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

The Sacramento Regional County Sanitation District (District) appreciates the opportunity to provide comments to the State Water Resources Control Board (State Water Board) on the Consideration of the Pelagic Organism Decline (POD) in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The District is a regional sanitation district that serves over a million customers in the Sacramento metropolitan area and owns and operates the Sacramento Regional Wastewater Treatment Plant (SRWTP). The SRWTP discharges directly into the Sacramento River downstream of Freeport, which is part of the Delta Waterways (northern portion), in the Central Valley Regional Water Quality Control Board area.

The District is very interested in the development of effective solutions to the POD as a stakeholder in the Sacramento River watershed and the Bay-Delta. The District is also very interested in the ongoing research regarding the POD, in particular those studies that are based on a working hypothesis that the discharge of effluent from wastewater treatment facilities is a significant contributor to the decline. The District, as well as other municipal agencies that treat wastewater in the Central Valley, owns and operates sophisticated facilities. The District's discharge is highly regulated under the Clean Water Act and the California Water Code. The District performs regular monitoring of whole effluent toxicity and many individual chemical constituents and has an excellent performance record for compliance with its NPDES permit.

Comments on Notice of Public Workshop

In the Notice of Public Workshop, the State Water Board indicated that it is seeking information and recommendations in specific areas for actions to improve fishery resources in the Bay/Delta. Of the areas listed, those of specific interest to the District include:

- Status of the National Center for Ecological Analysis and Synthesis (NCEAS) report summarizing the latest POD work team efforts;

- Findings of toxicological studies related to the POD, including ammonia discharge and its effect on the lower trophic level of the Delta food chain;

- Any new findings related to effects of water exports, invasive species and contaminants on the POD; and,

- Short-term and long-term actions the State Water Board should consider for improving habitat conditions for fishery resources.

Unfortunately, the available information for the January 22 workshop pertaining to the above topics is quite limited. In fact, important information, such as work plans and other documents related to work efforts on water exports, invasive species and contaminant effects have not been provided by the State Water Board in advance of the comment deadline or workshop. As a result, the District has the following questions, rather than comments, to offer:

- Can the State Water Board furnish a complete current listing of all of the ongoing research related to the impacts of water exports, invasive species and contaminants on the POD?

- How will work performed by others be evaluated for use by the State Water Board in its regulatory process? How will the regulatory processes for POD issues vary from the Basin Planning/NPDES permitting that is in current use (and has been used for over 30 years in California)?

- How will decisions be made by the State Water Board regarding the prioritization of resources, and what process will be used by the State Water Board to prioritize its evaluation of ongoing research projects/working hypotheses?

- Does the State Water Board have the authority to set priorities or otherwise influence the studies being performed by the Interagency Ecologic Program (IEP) POD team or other State-funded researchers working on the fishery decline in the Delta?

Concerns Regarding Implementation of State Water Board Resolution No. 2007-0079

The District supports the oral comments and written request made by the Central Valley Clean Water Association (CVCWA) that the State Water Board efforts to develop its strategic plan and implement its December 4, 2007 resolution regarding the POD and other Bay-Delta issues be done in an open and transparent public process. Unfortunately, much of the work to date by POD researchers has not been publicly available and it is unclear how and to what extent other agencies are coordinating their efforts with the State and Regional Water Boards. If such work is to be considered in the State Water Board's regulatory process, public input and independent peer review of the work plans and research work is essential.

Comments on Work Plans and Investigational Studies Relating to Ammonia Toxicity Informally Obtained by CVCWA

Although no formal documents have been provided for public review, the District has informally obtained a copy of one of the work plans for research planned this spring that has been proposed by Inge Werner of UC Davis. This work plan (which was initiated by DWR) involves toxicity studies to explore the hypothesis that

the District's discharge is causing toxicity to Delta smelt. It is disturbing to the District that a work plan and investigational study has been proposed that directly relates to its discharge, yet the District was not consulted as an affected stakeholder. The District believes it could be a valuable resource – providing technical information to help improve the study design and protocols. For instance, the District is concerned that the work plan is inadequate in a number of areas, as highlighted below.

- How will pH and temperature be properly accounted for in proposed ammonia toxicity studies? These parameters must be controlled during testing, given the significant effect they can have on ammonia toxicity.

- How will the testing procedure be designed to simulate actual conditions in ambient waters at the location of concern to Delta smelt?

- What are the acceptability criteria for the bioassay test results? The work plan fails to address this and other key issues regarding the performance of non-standard toxicity tests with endemic organisms. Proper information and protocols for the use of Delta smelt as test organisms are lacking.

- How will the relative sensitivity of the test organisms compared to the wild population be addressed?

- Will the seven-day testing be performed using a single grab sample or composite or from daily effluent and river samples?

- The work plan should include a test using undiluted Sacramento River water to determine if there is a downstream effect at the location of concern.

- The work plan should include more details for the test procedure, conditions and daily monitoring to ensure that the results are repeatable and dependable.

These deficiencies highlight the need for proper scientific peer review and stakeholder input into the entire suite of research activities.

The District also wishes to reiterate and support the comments made by CVCWA in its letter dated November 28, 2007 regarding the research performed to date by the Department of Water Resources to examine the potential for ammonium inhibition of the Delta food web and the resulting impact on fisheries. CVCWA has stated that it views that work to be largely incomplete due to the absence of information regarding (a) the presence of the effect in the Bay-Delta, (b) adverse food chain implications, and (c) linkage to population level effects on fish species of concern. More specifically, CVCWA has identified the following major issues that must be addressed before this inhibition effect can be verified.

- The relative importance of ammonium inhibition on primary productivity in Northern San Francisco Bay (existing work by Dugdale *et al.*) has not been well established. Clearly light limitation and invasive species impacts are significant factors affecting annual phytoplankton primary productivity which must be considered in assessing the relative importance of the inhibition effect.

- The alleged inhibition effect in Northern San Francisco Bay has not been linked to wastewater dischargers. Connections to wastewater are based on an unquantified assessment which fails to address ammonium conditions or trends over time.

- The ammonium inhibition effect in the Delta alleged in the work by DWR is extrapolated from the work in Northern San Francisco Bay. Similar work has not been performed in freshwater areas of the Delta. It is entirely premature to conclude that the existence of this effect occurs throughout the Delta.

- Differences in levels of nitrates and ammonium in the Delta versus the levels of these constituents observed in Northern San Francisco Bay have not been studied.

- The importance of an alleged inhibition effect on primary productivity in the Delta has not been quantified in comparison to light limitations and invasive species impacts.

- The linkage between changes in primary productivity and POD has not been clearly established. Presumed impacts on the Delta food web related to ammonium concentrations have not been demonstrated. A holistic assessment of ecosystem linkages relating the POD to food web changes has not been documented.

Conclusion

The District understands the urgency to address the POD. However, the District also believes a methodical approach is critical to ensure meaningful, scientifically defensible studies are performed that have been considered in an open and transparent public process. Not only is coordination with other agencies essential, it is also key that independent peer review of work plans and study results be performed prior to the finalization of technical or policy determinations. The District offers to assist the State Water Board in its strategic planning effort related to the POD and in the review of relevant work plans, investigational studies and research. In particular, the District seeks involvement in ongoing studies that are targeting POTW discharges as the source of significant impacts to fishery resources in the Delta.

Sincerely,

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