



May 24, 2011

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Re: Docket Number EPA-R09-OW-2010-0976

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Dear Ms. Foresman,

On behalf of Clean Water Action (CWA), we would like to thank you for this opportunity to comment on your advanced notice of proposed rulemaking (ANPR) related to the water quality challenges in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta Estuary).

Clean Water Action is a national organization of over a million members working to empower people to take action to protect America's waters, build healthy communities and make democracy work for all of us. Eighty five thousand of our members live in California, primarily in the geographic area covered by this ANPR. CWA's California staff has been deeply involved in a variety of projects related to the ecological health of the Bay Delta Estuary, including the development of mercury and PCBs TMDLs for San Francisco Bay and a methylmercury TMDL for the Delta, efforts to reduce nitrification and pesticide levels in Central Valley water supplies through agricultural reforms, empowering low income communities of color to address serious drinking water contamination, and sustainable management of the region's water resources so vital for both human and wildlife health. We draw upon this experience as the basis for the following comments related to questions you ask in the ANPR.

Question A:1:1 (Page 22): Are there contaminants, other than those named above, causing adverse impacts to aquatic resource designated uses in the Bay Delta Estuary and that should receive more focused review?

CWA was disappointed not to see mercury included in the list of priority contaminants discussed in this ANPR. While not directly associated with the plummeting fish populations in the region, mercury levels in the Delta, its tributaries, and San Francisco Bay



have lead to numerous listings on the 303(d) list due to bioaccumulation in fish tissue. Consequently, mercury loads pose a significant health risk to both wildlife and human fishing populations. Because of our commitment to Environmental Justice, we are particularly concerned with the continued threat to low income communities and communities of color who consume high levels of locally caught fish because of economic need and/or cultural tradition.

Currently an EPA-approved mercury TMDL for San Francisco Bay is being implemented, though the timeline for meeting water quality objectives is many decades, and potentially over a century¹. A methylmercury TMDL for the Delta was adopted by the Central Valley Regional Water Quality Control Board (CVRWQCB) in 2010² and is awaiting State Water Quality Control Board (State Board) and EPA approval. Despite the fact that the TMDL processes for these major sections of the Bay Delta Estuary are moving forward, it is not clear that they will in fact return water quality standards in accordance with their beneficial uses. Furthermore, major contributors of mercury to the Bay Delta Estuary have yet to be addressed, including federal properties. Consequently, further consideration of mercury by EPA is warranted for the following reasons:

Upstream mines have not been adequately addressed

Among the major sources of both methyl and total mercury into the Bay Delta Estuary are the upstream mining areas, including abandoned mines on federal lands. Though the TMDLs for the Delta and Bay were prioritized by the State, there has not been a corresponding effort yet to address mercury in most of the tributaries that carry new loadings from these mines. While we recognize that part of the problem is the extent of the problem and limited resources, we are also aware that a contributing factor is debate over who has jurisdiction over some of the mines contributing mercury to the watershed. Recognizing this issue, the State Board committed in 2005 to "...convene a meeting with the USEPA, Western States Petroleum Association, the Bay Area Clean Water Agencies, and with the San Francisco Bay and Central Valley Water Boards and other interested stakeholders, to investigate methods of addressing and financing the redress of mercury from the mining legacy"³. To our knowledge, however, little has been accomplished to

¹ http://www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/sfbaymercurytmdl.shtml

² Resolution R5-2010-0043 can be accessed at http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2010-0043_res.pdf

³ Resolution 2005-0060 , Resolved #16, p. 5.

http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2005/rs2005-0060.pdf



address the mining legacy, including that stemming from federal lands. Furthermore the proposed Delta methylmercury TMDL does not address upstream tributaries, despite efforts by stakeholders to include them in the implementation plan. Instead, the Central Valley Regional Water Quality Control Board (CVRWQCB) chose to delay action by consigning these impaired tributaries to future TMDL processes. We believe a more integrated approach that integrates source control in the upstream mining areas will lead to better results within a speedier time frame. **We look to EPA to facilitate and coordinate with the State, the CVRWQCB, other applicable agencies, tribes, and impacted communities to expedite development and implement a plan to address mercury loads emanating from upstream mines.**

The influence of wetlands

During the development of the mercury TMDL for the Delta, CWA advocated for load allocations to be attached to all sources of methylmercury, including restored wetlands. While we strongly support the restoration, management, and protection of wetlands as part of a healthy environment, such efforts must be carried out in a way that also protects both wildlife and human populations who depend on fish in those areas. Consequently, restoration and management must also entail strategies to reduce methylmercury levels either by addressing the presence of mercury (in whatever form) or interfering with the methylation process.

The proposed methylmercury TMDL for the Delta allows for an 8-year study period to further characterize methylation patterns and potential methods to reduce methylmercury production. While we recognize that there is still much to be learned about methylation, including in wetlands, CWA advocates that there should be no delay in requiring actions to reduce methylmercury loads based on current knowledge. Furthermore, research efforts should favor pilot programs with the potential of tangible results. There is precedent for such an approach. While the mercury TMDL for the Guadalupe River was still in development, the Santa Clara Valley Water District, *with EPA support*, piloted an aeration program in the local reservoirs in the hope of limiting methylmercury production. The pilot had promising results and will inform implementation of the now completed TMDL.

CWA urges EPA to support inclusion of methylmercury load allocations for wetland management and restoration projects when they review the Delta and future regional TMDLs and to incorporate methylmercury monitoring and actions to prevent methylmercury production in other wetlands projects. We also ask that the agency direct the CVRWQCB to prioritize pilot studies during their 8-year study



period and enforce load reductions when such studies demonstrate reasonable results before the 8 years is up. Finally, CWA advocates that EPA actively participate, facilitate, and provide resources to promote the development and implementation of pilot programs to reduce methylmercury in wetlands and other appropriate sources.

Limited Goals Will Not Support Beneficial Uses

Mercury related listings are primarily due to the danger this bioaccumulative contaminant has on anglers. However, the fish tissue targets established in both the San Francisco Bay and Delta TMDLs do not reflect actual human fishing practices in those regions. While CVRWQCB staff provided several potential fish tissue targets in their staff report for the methylmercury TMDL⁴, they ultimately chose a weak target; one that will protect wildlife, but will limit local communities to one meal a week of locally caught fish.

CVRWQCB staff claim that because this consumption rate exceeded the EPA default rate used in determining other alternative fish tissue targets, it is “more protective of people who by custom, need, or enjoyment, more frequently eat Delta fish”. They further defend it based on the fact that a similar target was adopted by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for the Bay and on species consumption trends⁵ despite testimony by tribal representatives, public interest groups working with low income communities of color, impacted community representatives that because of the region’s economic and cultural diversity, a significant portion of the population eats much higher levels of self caught fish on a weekly basis, including species that are not safe to consume at such rates. This testimony appears to be supported by findings in the Department of Public Health’s Delta Fish Project Needs Assessment Final Report and other outreach efforts⁶

⁴ Central Valley Regional Water Quality Control Board, Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary: Staff Report. April 2010, pp. 15-30.

⁵ Ibid., pp. 28-29.

⁶ Environmental Health Investigations Branch of the California Department of Health Services, Research, Outreach, and Education on Fish Contamination in the Sacramento – San Joaquin Delta and Tributaries

(AKA Delta Fish Project), January 2004. Also see the DPH’s newsletter on fish contamination in the Delta where they discuss consumption of both locally caught and store bought fish at http://www.ehib.org/projects/New_Version_JK.pdf.



In addition to the fact that various groups are consuming higher than safe amounts of fish, tribal cultural uses of local waters, including their spiritual connections to salmon and fish consumption, are not considered as legitimate beneficial uses by the Central Valley or San Francisco Bay Regional Boards.

These disparities between the stated goals in mercury TMDLs and what is actually needed to promote safe fishing and return our watersheds to their beneficial uses could not exist without EPA approval. Consequently, we respectfully suggest that EPA review its policy on what is a legitimate goal for a given TMDL and hold California accountable for fish tissue standards that better reflect actual fishing practices in the watersheds they are seeking to remediate.

Question A:1:2 (Page 22): How can pollutant-specific water quality criteria effectively address or incorporate interactive effects between multiple contaminants and other physical, chemical and biological stressors

CLEAN WATER ACTION's long participation in the Cal-Fed Drinking Water Subcommittee⁷ largely involved a discussion of how to manage multiple contaminants. In that case, we were looking at the Cal-Fed water quality targets of 50 parts per billion of bromide and 3 parts per million of organic carbon as benchmark water quality standards for water pumped from the Delta. However, the Cal-Fed Record of Decision also allowed for the establishment of alternative targets which would provide an "equivalent level of public health protection" or ELPH. The "ELPH" strategy looked at the role that a number of efforts – including source control, real-time water quality monitoring, blending, and treatment – could play in providing a high level of drinking water quality despite fluctuations in water quality in the Delta. For some participants, including CWA, it also presented an opportunity to investigate and prioritize those contaminants posing the greatest risk to public health. The demise of Cal-Fed prevented a full investigation of this idea – but EPA has the ability to move such an investigation forward and provide leadership in the development of this concept.

⁷ Calfed Water Quality Subcommittee archives can be found at
http://calwater.ca.gov/calfed/objectives/Water_Quality.html



The Cal-Fed Drinking Water Committee suggested that drinking water risks are best evaluated at the tap once supplies have been blended and treated to maximize water quality. In this case, the risks for this beneficial use are lessened because Delta supplies are diluted. Unfortunately, Delta-based species do not have that option, and, because of that, an argument could be made that they represent the most vulnerable population, meaning that contaminants be prioritized according to the risk to these populations.

The Drinking Water Committee also noted the need for time sensitive water quality monitoring, since changes in water quality, particularly salinity can happen rapidly, often because of changes in pumping from the Central Valley and State Water Projects. The same rapid changes in salinity also impact aquatic species within the Delta. More precise information on fluctuations in water quality may assist the development of new standards or pumping regimes.

The California Office of Environmental Health and Hazard Assessment recently issued a report titled "Cumulative Impacts: Building a Scientific Foundation"⁸ that provided a road map for identifying cumulative impacts across several exposure media. In addition, EPA itself is revising its process for regulating drinking water contaminants by developing regulations based on "families" of contaminants. Both of these policies should provide guidance for EPA's evaluation of the multiple stressors in the Delta.

Question A:1:3 (Page 22): What methods can be used in developing and implementing TMDLs to effectively address or incorporate interactive effects between multiple contaminant and other physical, chemical, and biological stressors on individual water bodies or for water bodies within a watershed?

While TMDLs have the potential to drive many water quality improvements, they are limited by their focus on individual contaminants and geographical sections. In many cases, this is necessary since specific contaminants behave differently from others, and the hydrologic factors and even beneficial uses associated with one water body may not correspond with another. TMDLs are further limited by their reactive function; they are plans to remediate a problem that already exists, instead of preventing pollution at the source.

⁸ "Cumulative Impacts: Building a Scientific Foundation" December 2010
<http://www.oehha.ca.gov/ej/pdf/CIReport123110.pdf>



Measures to address interactive effects between multiple contaminants and stressors in individual as well as multiple water bodies will require EPA and the State to employ a broader systemic approach to address water quality impairments and violations, of which TMDLs are only a part. However, in addition to technical methodologies and scientific efforts related to TMDL development and implementation, there are policy and procedural recommendations that can broaden the scope of and potentially expand the effectiveness of the water quality remediation efforts that derive from them.

How we approach TMDLs is often driven more from a perspective of having to crank them out to fulfill federal regulations than focusing resources on identifying and developing implementation plans that will address disparate and interacting impacts on water quality and evaluating their effectiveness as they progress. This process leaves in question how impairments are prioritized, whether actual implementation is emphasized and evaluated for success, and in the end, whether we are actually making a difference. It can also eat up resources better used in monitoring progress, adapting implementation plans, and seeking remediation strategies that either address more than one water quality problem or can be effective in myriad geographic areas.

Part of making TMDLs more agile in addressing multiple problems is to look beyond TMDLs themselves at other avenues of environmental improvement. **CWA strongly recommends that source control, not just by stopping the flow of contaminants into our waters, but by stopping their use so that they have not way to enter the environment, become a stronger priority in addressing water quality. While we discuss this specifically under the question below related to contaminants of emerging concern, it is justified to be repetitive and say that EPA should bring to bear its regulatory authority about chemicals used in products and processes that can impair water quality, marine life, and human health as part of its water oversight.**

CWA also sees a role for EPA, as it oversees California's TMDL process, to facilitate consideration of a more holistic approach. Elements of such an approach *may* include:

- Identification of statewide problems for which statewide action would be suitable
- Development of strategies to address a particular problem that are applicable to multiple watersheds



- Development of remediation plans that consider a waterbody as a whole and identify synergies between impairments. This could include a watershed-based focus on chemical/physical/biological integrity and holistic action plans, with necessary resources, full community engagement, and expectation that all pollution sources will be held responsible for their contributions without regard to how much of the problem they are causing.
- Improved enforcement of cleanup and abatement orders

In addition to these fundamental recommendations, CWA is in the process of working with other public interest groups to identify opportunities to improve the development, implementation, and evaluation of TMDLs and other processes by which to return California's impaired waters to their beneficial uses and water quality standards. While final recommendations have not been adopted, the following suggestions are potential areas of further consideration and study:

- Tap into to the expertise of local entities, such as watershed groups, local environmental organizations, fishing associations, and tribes to help inform not only TMDL development and implementation processes, but monitoring and other water quality programs as well. Often these groups have on the ground expertise about what is impacting their watersheds that is lacking by government agencies. This can include the sources of contamination, the variety of physical, chemical, and biological stressors impacting the watershed, and what the impacts are on local communities and the environment. However, their input is often not sought, or when it is provided, it is marginalized in favor of the “official” agencies and the consultants they contract with from outside of the local area. CWA specifically recommends that when available, such local entities be contracted to perform monitoring, community outreach, data collection on sources of contamination, remediation activities, and other implementation functions to the degree possible, instead of outside consultants.
- Create an adaptive management framework that allows actions to improve water quality forward based on current understanding of one or more contaminants and/or environmental stressors, with the expectation that those actions can be revised and/or new actions required as knowledge about the interactions of multiple environmental threats increases.
- Build an ambient water quality baseline and monitor accordingly in order to identify trending problems and assess progress of restoration efforts. In addition, require toxicity testing and evaluation as part of ambient water monitoring in order to figure out where the problem stems from, better assess the state of the water, and capture cumulative impacts.
- Incorporate data on flow impacts on water quality into TMDL development. As we know, flow and the actual availability of water in the Bay Delta Estuary has been associated with fish population declines. Flow can also impact the transport of multiple and individual contaminants



into our waterbodies, levels of contamination and the behavior of environmentally sensitive substances such as mercury and selenium.

- In addition to impacts on wildlife, research on watershed's human fish consumption rates across various cultures/economic strata should be required as TMDLs are developed when that TMDL is in response to fishing as a beneficial use. Because various contaminants collect in different parts of fish, exposure reduction advice for fish consumers can vary. Consequently, the cumulative health impacts of multiple contaminants known to exist in the watershed and local fish populations must also be reviewed and considered as exposure reduction advice and advisories are developed. This will require coordinated efforts between the water boards, EPA, state and local health departments, as well as members of impacted communities with expertise in communicating to their populations.
- EPA should urge the State of California to create accountability mechanisms to track resources used by regional boards on TMDL development to ensure they set targets based on greatest threats, efficient actions, and understanding of interactive impacts of contaminants and environmental stressors on their watersheds.
- Integrate research into remediation technologies and methods that address multiple contaminants known to exist in a given watershed as part of EPA, the State Water Resource Control Board, and the State's regional water boards' TMDL programs.

Section A:2:c:3 (page 29); What information is available on nonpoint sources of total ammonia nitrogen and how they may most effectively and efficiently be controlled?

Ammonia nitrogen in the Delta cannot be effectively controlled until agricultural sources – both irrigated agriculture and confined animal feeding operations - are identified and monitored. Unfortunately, while the Central Valley Regional Water Quality Control Board is in its third year of regulating nonpoint source discharges from the 1500 dairies in its purview, and is developing a similar program for seven million acres of irrigated agriculture in the Delta watershed, there is still limited available data to indicate where nitrogen runoff is occurring and how its impacts can be controlled. The California Department of Food and Agriculture maintains data on fertilizer sales by county⁹, which can be used to provide an idea of the relative quantities of fertilizer compared with nonpoint source discharges by wastewater treatment plants.

While EPA has no ability to regulate discharges from agriculture, improved reporting and monitoring can help pinpoint specific problem areas.

⁹ "Fertilizing Materials Tonnage Report January – June 2009" California Department of Food and Agriculture



Question A:3:c:1 (Page 25): What, if any, additional information is available to better characterize selenium sources, loadings and impacts within the watershed of the Bay Delta Estuary?

Clean Water Action supports EPA's listing of selenium as a contaminant of concern because of the threat it poses to diving birds, sturgeon, as well as predators and human hunters that consume them. We recommend that any rulemaking on this contaminant incorporates the potential relationship between selenium in the food chain and invasive species.

While the ANPR reports that selenium load reductions are being explored and implemented in both the Bay and Delta regions, the disparity between actual water quality standards and the impacts on fish and other wildlife species makes it clear that we must also focus on the bioavailability of the selenium already in the Bay Delta Estuary. This is particularly true because, as the ANPR states, controlling mobilized selenium is difficult. There is no evident way to remove it from the biotic system and removal from water is still under investigation. In addition, given the scope of the problem, "contamination in the Basin and Delta can be expected for years – possibly centuries" ¹⁰

In its 2005 draft "Project Definition for the San Francisco Bay Selenium Listing", the SFBRWQCB described the role of the Asian Clam in increasing selenium levels within the food web:

*The problem seems to have been exacerbated by the introduction of the Asian Clam (*Potamocorbula amurensis*) in to the Bay in 1986. This non-native clam is a prodigious filterfeeder, and by consuming large quantities of selenium-laden particles, it has moved a considerable mass of selenium into the benthic food web and thus to diving ducks and large fishes such as sturgeon. Concentrations in sturgeon have declined from a peak in 1990 to levels that are below proposed USEPA criteria, but which are still elevated.*

The ANPR also refers to an invasive species of clam, Corbula amurensis, in San Pablo and Suisun Bays, and the central and southern Delta as particularly efficient in bioaccumulating

¹⁰ Ibid., p. 35



selenium and moving it up the food web¹¹. Given that the ANPR recognizes both selenium and invasive species as affecting the overall health of the Estuary, we urge EPA to ensure that any actions taken to address selenium include, when appropriate, corresponding actions to reduce invasive species that intensify the problem – whether the water body or section is considered officially impaired by that species or not. Because of the ANPR's statement that wetlands conditions can also exacerbate bioaccumulation, wetlands management and restoration projects need to include requirements to study, pilot, and implement mitigation strategies to prevent bioaccumulative selenium production similar to that which must occur with mercury.

Question A:4:d:2 (Page 46) What, if any, actions should EPA take under its authority to improve the effectiveness of regulating pesticide contamination of the Bay Delta Estuary Watershed?

Question A:4:d:10 (Page 47): Should EPA use its residual designation authority to designate currently unregulated stormwater discharges that contribute pesticides to surface waters?

A major data gap that could be addressed by EPA is a requirement that pesticide manufacturers develop test methods for their products and derivatives in water and that regular monitoring occur for these contaminants. The Department of Pesticide Regulation has a list of restricted use pesticides; yet for many of these pesticides, no test methods are available to identify whether the chemicals or their derivatives are accumulating in the environment. EPA has the ability to require the development of such test methods. Filling this data gap will provide the information needed to prioritize chemicals for further regulation our source control methods, and may have the added benefit of reducing groundwater contamination.

Question A:5:d:4 (Page 51): What, if any, methods are most effective to minimize introduction of Contaminants of Concern into the Bay Delta Estuary?

¹¹ ANPR, p. 30. Note that the Delta is not considered impaired by invasive species and no TMDL to address Corbula amurensis is planned



Because of the resources and funds expended to address currently identified water quality problems related to “traditional” contaminants such as mercury, nitrates, PCBs, and legacy pesticides, proactive strategies to prevent the next generation of contaminants are not prioritized and fall by the wayside. This creates a never-ending cycle of trying to catch-up on an expanding list of contaminants that impact our water resources. It also results in dependence on treating or remediating our way out of our problems – strategies that are both technologically questionable and fiscally unsustainable -- instead of stopping them at the source. The problem is aggravated by limitations on waste and stormwater authorities’ ability to control pollution sources. Limited information on chemicals in use in products and industrial products makes it difficult, and costly to identify the sources of toxicity violations or of the chemicals, once identified, themselves. In addition, unlike the California Air Board and EPA, the State and regional water boards do not have the authority to regulate the use of chemicals in products or processes.

Addressing emerging contaminants will necessitate regularly scheduled monitoring requirements to identify substances of concern that are entering the Bay Delta Estuary, as well as their sources, and their potential impacts on water quality, marine life, and public health. Such rules should be accompanied with viable funding sources, recommended protocols, and a way to share information among water stewards, such as a contaminant data base including hazard traits. However, it will also require strategies that go beyond traditional water quality management and remediation. **EPA must bring to bear other avenues of environmental protection, including chemical policy reforms and regulations to actively reduce the use of toxic, bioaccumulative, and persistent chemicals and promote environmentally sound alternatives. Full due diligence on alternatives is essential in such a process.** It will be imperative to avoid the introduction of equally or even more problematic chemicals, such as the rise in the use of pyrethroids as a substitute to other pesticides that were banned from use because of their impacts on water quality and aquatic life.

CWA strongly urges EPA to work closely California’s Environmental Protection Agency, as it seeks to implement SB 509 (Simitian) and establish a clearing house of information on chemicals in commercial use and their hazard traits. We also recommend that EPA use its own regulatory authority to address the use of CECs being found in the Bay Delta Estuary as an effective pollution prevention strategy. Finally, we ask that EPA use its influence to create a partnership with the Federal Drug Administration (FDA) and key law enforcement authorities both to promote the development of more efficient medications in order to reduce their excretion



into our water systems and to allow accessible collection programs for unused medications.

Thank you for allowing us the opportunity to comment on this important regulatory development.

Sincerely,

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