Central Valley Clean Water Association
Representing Over Fifty Wastewater Agencies

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February 17, 2017

Felicia Marcus, Chair
Members of the State Water Resources Control Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
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SUBJECT: **Comments on *Proposed Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bay and Estuaries of California – Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions***

Dear Chair Marcus and Members of the Board:

The Central Valley Clean Water Association (CVCWA) appreciates the opportunity to provide written comments on the proposed revisions to the proposed *Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays and Estuaries of California – Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Proposed Beneficial Uses and Mercury Provisions). CVCWA is a non-profit association of public agencies located within the Central Valley region that provide wastewater collection, treatment, and water recycling services to millions of Central Valley residents and businesses. We approach these matters with the perspective of balancing environmental and economic interests consistent with state and federal law. This letter is submitted in conjunction with three other representatives of publicly owned treatment works (POTWs): the California Association of Sanitation Agencies (CASA), the Southern California Alliance of POTWs (SCAP), and the Bay Area Clean Water Agencies (BACWA). CASA represents over 100 public wastewater agencies located throughout the state of California. SCAP represents over 80 wastewater treatment and collection system agencies located in the seven southern California counties. BACWA is a joint powers agency comprised of local clean water agencies that provide sanitary sewer services to the more than seven million people living in the nine-county San Francisco Bay Area.

We sincerely appreciate the time that individual State Water Resources Control Board (State Water Board) members and staff have taken over the last month to work with us on these issues. We believe that these collaborative discussions should broaden to include tribal and subsistence fishing representatives as a means to arrive at a sustainable and productive approach to implementation of the three proposed beneficial uses in the Central Valley and throughout California.

As we have stated in our meetings to date, CVCWA is supportive of the three new proposed beneficial uses. We agree with tribal and subsistence fishing representatives that these uses have long existed and should be formally recognized as part of our water quality control planning process under the Clean Water Act and California Water Code. CVCWA does have some remaining concerns about the manner in which these beneficial uses have been proposed. Our primary questions pertain to the definitions used and the process and principles to be used by Regional Boards in the designation and implementation of those uses and associated water quality objectives. We have included some ideas for your consideration on this topic in this letter. As we have discussed, CVCWA and other POTW representatives look forward to working collaboratively with Regional Boards, tribal representatives, and subsistence fishing representatives on these issues.

Regarding the proposed Mercury Provisions, we advocate that the proposed policy be modified to take full advantage of available information and understanding we have derived from the significant collaborative work and research devoted to mercury standards and total maximum daily loads (TMDLs) over the past 15 years. As we have discussed, under the proposed implementation plan for municipal and industrial NPDES permittees, many point sources which are not significant contributors to mercury loadings would be required to install costly treatment plant upgrades. We do not believe this is an intentional action by the State Water Board, as it would not contribute to meaningful reductions in levels of mercury in fish tissue. In this letter and attachments, we have provided alternative language to avoid these unintended consequences.

As you are well aware, in addition to impacting mercury objectives, the proposed beneficial uses, once designated, will impact water quality objectives for numerous other pollutants, including all of the human health objectives currently governed by fish consumption considerations. We believe it has been instructive to see how the implementation of the proposed uses would impact mercury fish tissue objectives and related implementation measures. The specific issues arising with regard to mercury provide a good case example to inform future implementation of new beneficial uses for other pollutants of concern, many of which are legacy problems requiring different solutions. CVCWA and other NPDES-permitted entities sees the need to collaborate closely with you and your staff, Regional Water Boards, tribal and subsistence fishing representatives, and other key stakeholders to work on these issues to develop meaningful regulatory requirements and implementation plans.

As a prelude to providing our direct comments on the proposed uses and Mercury Provisions, we begin by reviewing the information that we presented in public at the February 7, 2017 hearing which highlights some of our major concerns with the Proposed Mercury Provisions.

As stated in our testimony, significant work has been done under the San Francisco Bay and Delta mercury TMDLs to increase our understanding of mercury sources, control measure effectiveness

and fish tissue levels. In the Delta methylmercury TMDL (which was approved by the State Board in 2010 and has been in the Phase 1 implementation stage for almost five years), significant data collection, data analysis and control measure assessment activities have been undertaken by various entities. Under the CVCWA Methylmercury special project effort, accurate information has been developed to understand past, present and future POTW mercury source contributions to the Delta.

Figure 1 below shows the various sources of methylmercury to the Delta. The major sources, on a mass basis, are tributary rivers and streams, open water and wetlands. Loadings from POTWs, urban runoff and agricultural runoff are very small in proportion to the other sources. This chart also shows the diminishing load from POTWs as treatment upgrades to address existing NPDES permit requirements are implemented. These changes will occur over the next five to ten years, independent of other policies or requirements. These facts demonstrate that additional controls on POTWs and other insignificant mercury discharges to the Delta will not yield significant changes in either methylmercury loadings or methylmercury levels in fish. The question of whether major reductions can occur due to management of major sources is being studied under the Phase 1 TMDL effort; currently, this is a significant unknown. Clearly, if levels of mercury in fish are to dramatically decrease, this is where reductions must occur.

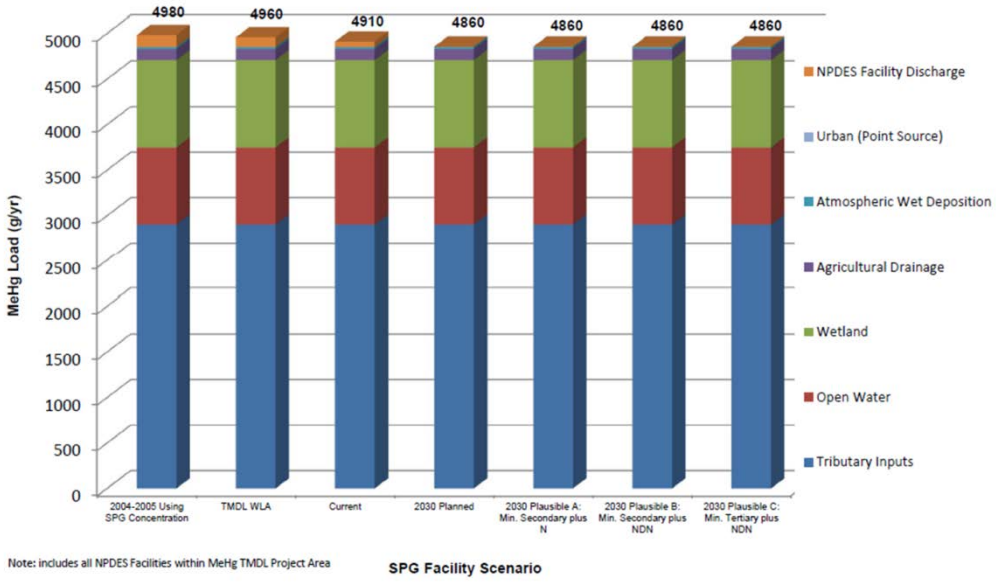


Fig. 1. Comparison of Methylmercury TMDL Project Area MeHg Loads at Varying SPG Facility Scenarios

Figure 2 below shows the ability of ten high-end, advanced wastewater treatment plants, consisting of nitrification, denitrification and tertiary filtration, to achieve the effluent limits described in the proposed Implementation Plan for NPDES dischargers. The chart shows the percentage of time that high performing POTWs could be expected to attain annual average effluent concentrations of total mercury ranging from 1 to 12 nanograms per liter (ng/l). Examination indicates that these plants could be expected to achieve 12 ng/l almost all the time, 4 ng/l 85% of the time, and 1 ng/l 33% of the time. The 1 ng/l effluent limit is associated with proposed fish tissue objectives for the Tribal Subsistence use in slow-moving waters. Arguably, this limit would pertain to most of the POTWs in the

Delta and in San Francisco Bay, where hydrodynamic conditions are tidally influenced. This would require most POTWs to upgrade beyond the most advanced treatment levels currently practiced in California. Given the insignificant beneficial impact of such actions (and the associated major resource commitment required to implement such actions), CVCWA and other POTW associations in California have identified the need to modify the NPDES implementation plan contained in the proposed Mercury Provisions.

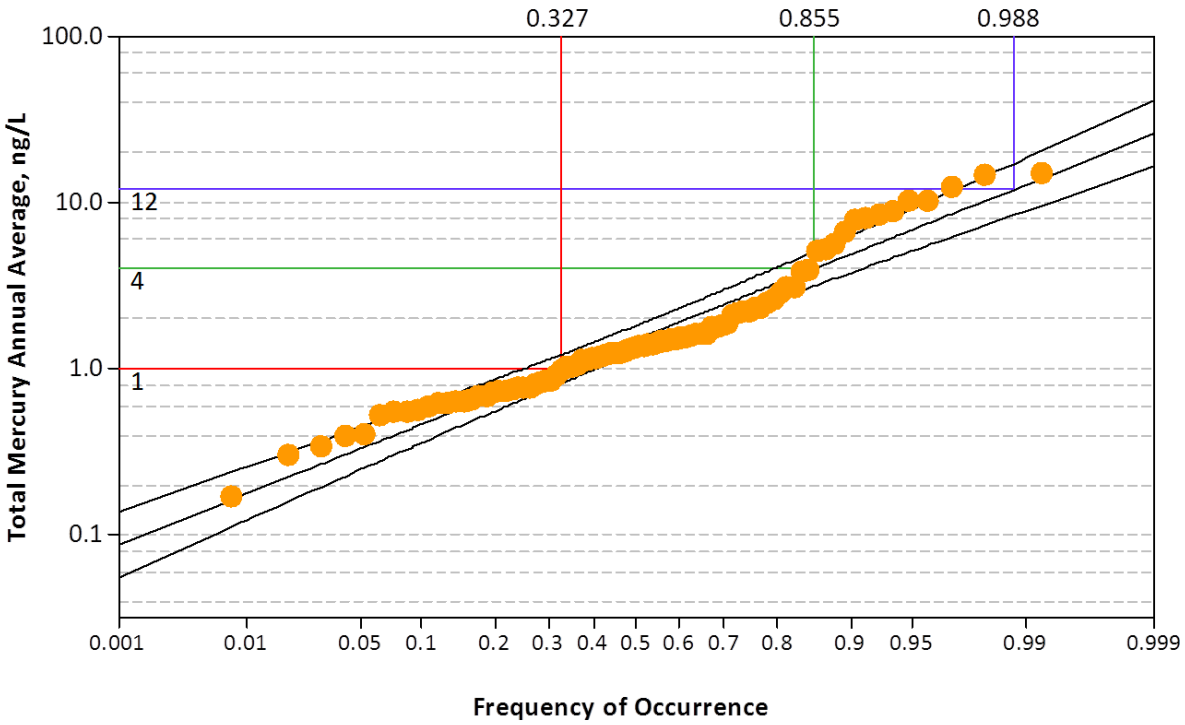


Fig. 2 Mercury Concentration Annual Average Probability Plot for Tertiary plus Nitrification/Denitrification Facilities

Full size versions of these two charts are included as Attachment A.

A. Major Comments

CVCWA's major comments on the Proposed Beneficial Uses and Mercury Provisions are provided below. Our major comments fall under the following major topic areas:

- MC–1: Implementation of Mercury Water Quality Objectives - Municipal and Industrial Wastewater Dischargers
- MC-2: Implementation of Mercury Water Quality Objectives – Assignment of Mercury Abatement Responsibility to State Agencies
- MC-3: Guidance to Regional Water Boards regarding Designation and Implementation of Proposed Beneficial Uses
- MC-4: Clarification of Language in Beneficial Use Definitions
- MC-5: Process for Adoption of Mercury Fish Tissue Objectives

Note that, in this letter, we have not attempted to identify all associated changes in the staff report and other documents to reflect changes we have suggested to the regulatory language. We do request that such changes be made, by reference, and are willing to work with staff on those changes subsequent to deadline for these written comments.

We have also included several Other Comments at the end of this letter addressing more specific issues.

MC-1: Implementation of Mercury Water Quality Objectives - Municipal and Industrial Wastewater Dischargers

Our comments address three main topics pertaining to the proposed implementation plan for municipal and industrial NPDES dischargers:

- Use of Bioaccumulation Factors to convert fish tissue objectives to water column values
- Determination of Reasonable Potential
- Development of Effluent Limitations

Specific comments in these topic areas are provided below.

Use of Bioaccumulation Factors to convert fish tissue objectives to water column values

The proposal to use bioaccumulation factors as a key element of the proposed NPDES implementation approach for mercury creates unacceptable outcomes. The following comments are intended to clarify this issue and illuminate the need for a different implementation approach.

<u>The use of BAFs is Not Legally Required</u>

First, it is important to point out that the decision to use bioaccumulation factors (BAFs) in the proposed mercury provisions (specifically in the implementation for NPDES-permitted municipal and industrial point sources) is not driven by federal or state legal requirements under the Clean Water Act (CWA). The decision to use BAFs, instead, is a policy choice which is intended to simplify the analysis of reasonable potential and the derivation of effluent limitations in the NPDES permitting process. However, this choice is not without many disadvantages, many of which are obliquely recognized in the Staff Report/SED. Given that it is a policy choice for the State Board, it is also appropriate to identify and understand the disadvantages associated with this decision.

With regard to the legal question, it is instructive to examine the evolution of the use of BAFs in application to the regulation of mercury at both the federal and State levels. In 2000, USEPA adopted mercury water column standards for California as an element of the California Toxics Rule (CTR), using bioaccumulation factors in reaching that determination. In 2010, USEPA revisited national mercury objectives – at that point, EPA decided to adopt the national mercury standards as fish tissue standards (0.3 mg/kg wet weight, based on an assumed consumption rate of 17.5 grams per day)[see Appendix O of SED/staff report]. Notably, EPA refrained from taking the step of converting those fish tissue standards into water column standards through the application of BAFs, in large part due to the

recognition that the determination and use of total mercury BAFs was unnecessary. Indeed, EPA's 2010 Guidance specifically states, "A state or authorized tribe could decide to develop TMDLs and to calculate WQBELs in NPDES permits directly without first measuring or calculating a BAF." (2010 Guidance, §3.1.2 at p. 21.)

In California, recent regulatory actions support the decision against using the BAF approach for translating fish tissue standards into water column concentration objectives. These examples come from the San Francisco Bay and Sacramento-San Joaquin Delta mercury TMDLs, which were approved by the State Water Board in 2007 and 2011, respectively. Notably, in neither case did these TMDLs convert fish tissue objectives into water column targets through the use of BAFs.

These examples are provided to clearly illustrate the point that the use of BAFs is not legally required under the CWA, and were not deemed appropriate from a policy standpoint. These examples also raise other considerations, as discussed below.

<u>There is no scientific consensus regarding the validity of the use of BAFs as proposed in the Mercury Provisions</u>

As noted above, probably the best California-specific evidence that BAFs are not well supported by science is the fact that neither the San Francisco Bay Mercury TMDL nor the Delta Methylmercury TMDL utilize a total mercury BAF (i.e. a multiplier that relates fish tissue concentrations to total mercury in the water column) as part of the TMDL implementation plan. Because the U.S. Environmental Protection Agency (US EPA) had advocated the use of BAFs in its 2001 Human Health guidance, this concept was considered, but not implemented for either TMDL. This is because evaluation of the relationship between total mercury concentrations in ambient waters showed no meaningful correlation with the levels of mercury in fish tissue. This conclusion led US EPA to revise its recommended approach for developing human health water quality objectives in 2010, wherein US EPA specifically rejected the BAF approach. According to the 2010 Human Health Guidance:

> Assessing and predicting methylmercury bioaccumulation in fish is complicated by a number of factors that influence bioaccumulation. These factors include the age or size of the organism; food web structure; water quality parameters such as pH, DOC, sulfate, alkalinity, and dissolved oxygen; mercury loadings history; proximity to wetlands; watershed land use characteristics; and waterbody productivity, morphology, and hydrology. In combination, these factors influence the rates of mercury bioaccumulation in various—and sometimes competing—ways. For example, these factors might act to increase or decrease the delivery of mercury to a waterbody, alter the net production of methylmercury in a waterbody (through changes in methylation and/or demethylation rates), or influence the bioavailability of methylmercury to aquatic organisms. Although bioaccumulation models have been developed to address these and other factors for mercury, their broad application can be limited by the site- or species-specific nature of many of the factors that influence

> bioaccumulation and by limitations in the data parameters necessary to run the models. (2010 Human Health Guidance, §3.1.3.1 at p. 26.)

Use of BAFs Lead to Unintended and Inappropriate Consequences

A consequence of using BAFs to create water column values is that it facilitates the application of these water column numbers in the NPDES permitting process. The unintended consequence of this action is to lose track of the importance of NPDES sources to fish tissue concentrations at the watershed level, and instead to focus on an end-of-pipe approach to NPDES permitting. Whereas holistic assessment of mercury sources (as is developed under a TMDL framework) provides a clear picture of the relative importance of NPDES sources to fish tissue levels and provides context for establishing reasonable regulatory requirements, the end-of-pipe permitting approach fails to recognize or account for the relative importance of a permitted source. This leads to the situation, as described in the staff report, where significant treatment requirements are anticipated for municipal and industrial point sources, even though those sources are recognized to be minor in the same staff report on page 146.

Information developed for the Delta Methylmercury TMDL highlights this point. As shown in Figure 1, NPDES sources are very minor contributors to the overall mercury mass balance in the Delta. Further, those sources will decrease over the next few years due to other NPDES permit requirements which have mandated increased levels of treatment at major treatment facilities (SRCSD and City of Stockton). Figure 1 shows that requiring point source dischargers to install new, very expensive, treatment processes to further remove such miniscule amounts of mercury from their effluent would make no measurable impact on levels of mercury in fish in the Delta. However, use of BAFs as the first step in an NPDES permitting sequence, in combination with anticipated future subsistence fishing use designations and associated mercury fish tissue objectives, would require such action. This course is neither reasonable nor prudent, and we urge the State Water Board to reject it.

It should also be pointed out that the use of BAFs to create surrogate water column values for mercury only affects NPDES sources through the issuance of effluent limitations. As seen in the remainder of the implementation plan in the proposed mercury provisions, other far more significant sources, would not be affected by the decision to use BAFs as stated in the proposed policy. This further brings into question the policy choice to use total mercury BAFs as an element of the proposed implementation plan. As described below, if changes are made to the implementation language, the use of BAFs will not be necessary for NPDES permitting purposes.

When the US EPA revisited nationwide mercury objectives and appropriate implementation, they concluded that fish tissue standards were more appropriate for mercury criteria development to avoid the potentially unintended consequences, described above, as well as to more "closely tie" the "fishable designated use goal" to specific waterbodies, to more consistently relate applicable fish tissue concentration values with how fish advisories are issued, and because at environmentally relevant concentrations, some forms of mercury are easier to detect in fish tissue than in water samples. (See, Human Health Guidance, §3.1.2.2 at p. 22.)

Determination of Reasonable Potential

With the establishment of new fish tissue objectives to protect the proposed three new beneficial uses, the obligation exists under USEPA CWA regulations (40 CFR 122.44) to evaluate whether NPDES-permitted discharges have the reasonable potential to cause or contribute to violations of those objectives. If "reasonable potential" is determined to exist, effluent limitations are to be included in NPDES permits to implement the subject fish tissue objectives.

As an alternative to the proposed implementation language in the Mercury Provisions, which relies on the use of BAFs to determine surrogate water column values and would modify Steps 1 through 5 of the existing NPDES reasonable potential analysis procedures (Section 1.3 of the State Implementation Policy (SIP)), we recommend that changes to Step 7 of Section 1.3 should be made. Step 7 allows for the consideration of "other information" in reaching a reasonable potential determination. This step in the process does not rely on the creation of surrogate water column values through the use of BAFs to interpret fish tissue objectives. In cases where TMDLs have already been approved and implemented, significant information exists which should guide the reasonable potential determination.

Suggested changes to Step 7 of the SIP reasonable potential procedures are included in Attachment B.

The State Water Board staff has recognized the minor (*de minimis*) nature of municipal and industrial point source dischargers to the mercury loading of many state waters in its staff report, and has proposed an exception for so-called, "insignificant discharges." While recognizing that many municipal and industrial point sources are indeed "insignificant discharges" to the overall mercury loading in any given water body, the State Water Board should state that, where, on a case-specific basis, that municipal or industrial point sources are determined to be *de minimis* (or insignificant) contributors of mercury, the permit writer would have discretion to determine that no reasonable potential exists to cause or contribute to water quality excursions, and thus not impose effluent limitations for mercury.

The suggested amendments to Step 7 of the SIP should allow the Regional Board permit writer to consider the relative mercury loading of a given discharger to a water body and, where appropriate, determine that there is no "reasonable potential" that would require the more restrictive water column concentration effluent limits. These determinations would not be mandatory but, rather, would provide sufficient discretion to the permit writer to utilize all appropriate data when determining whether new and more restrictive mercury WQOs should be imposed.

Development of Effluent Limitations

Where a determination is made that effluent limitations are required because a discharge has reasonable potential to cause or contribute to a violation of fish tissue objectives for mercury, the implementation language in the proposed Mercury Provisions should describe an approach to the

establishment of effluent limitations. The proposed Mercury Provisions put forward an approach that relies on the use of BAFs and water column values.

We recommend that an alternative approach be followed, as described below, consistent with past State Water Board and NPDES permitting approaches used in San Francisco Bay, and with legal precedent as described in *Communities for a Better Environment vs. State Water Resources Control Board* (2005) 132 Cal.App.4th 1313 ("CBEII"). This alternative approach intentionally avoids the use of BAFs and the associated problems as described above.

The recommended alternative approach to effluent limitations includes three elements, as described below and as captured in the markups shown in Attachment B:

- Interim Limitations – In water bodies where mercury TMDLs have been adopted and implemented, existing WLAs should serve as interim effluent limitations for point sources until amended TMDLs are developed and adopted. In water bodies where TMDLs are not yet adopted, but reasonable data confirm that point sources are *de minimis* contributors of mercury to the water, interim effluent limitations for point sources should be performance-based mass limits, intended to cap mercury mass loads until 303(d) listings and/or TMDLs have been adopted.

- Other interim requirements – In water bodies where TMDLs have been implemented, dischargers shall be required to continue to implement the requirements of those TMDLs. In addition, dischargers shall be required to participate in stakeholder processes to identify and assess the feasibility of control measures and strategies to reduce the major sources which are influencing fish tissue concentrations in the subject water body and to otherwise support development of future TMDLs. In water bodies where TMDLs have not been adopted, dischargers should be required to demonstrate implementation of best practices for mercury source control, including pollution prevention and industrial pretreatment. In addition, dischargers should be required to participate in stakeholder processes to identify and assess the feasibility of control measures and strategies to reduce both the major sources which are influencing fish tissue concentrations in the subject water body, as well as potential risks to consumers of fish, and to otherwise support development of future TMDLs.

- For interim limitations or requirements, long-term averages, such as annual averages, should be used rather than short-term averages, like weekly or monthly averages.

- Final WQBELs – Final WQBELs may be the WLAs developed under future TMDLs associated with future designated beneficial uses and associated fish tissue objectives. Alternatively, final WQBELs could be determined using one of the methods described in USEPA TMDL guidance for establishing WLAs. Such methods provide flexibility to take various factors, including relative source load contributions and existing control measures into account in the establishment of WLAs.

MC-2: Implementation of Mercury Water Quality Objectives – Assignment of Mercury Abatement Responsibility to State Agencies

California's regulatory and public health agencies have long been aware that fish and other aquatic-dependent wildlife are at risk for bio-accumulating methylmercury. In some instances, higher-tropic (larger) fish contain elevated levels of mercury in fish tissue that are consumed by humans, leading to fish consumption advisories by public health agencies. Over the past 15 or so years, considerable information about sources of mercury, control strategies, risk reduction and communication, and the underlying ability to achieve significant reductions in fish tissue mercury levels has been developed by Regional Boards. In some cases, these efforts have resulted in the development of TMDL budgets and plans for achieving reductions in the amount of mercury loading to those water bodies.

An important result of the studies and work leading up to Mercury TMDLs in various parts of the state is the recognition that traditional "point sources" - municipal and industrial wastewater treatment facilities – are considered to be an extremely small portion of the ongoing load of mercury to state waters. The *de minimis* nature of these point source contributions to ongoing mercury loading can be traced to aggressive pre-treatment, pollution prevention, and active treatment technologies over the past two decades. Indeed, municipal and industrial dischargers combined account for only about 1.4 percent of the ongoing mercury loading to San Francisco Bay. Planned NPDES loads to the Delta based on current permit requirements will represent less than 0.1 percent of the methylmercury load in 2030.

By comparison, open water, tributaries and existing wetlands are known to account for about 93.8 percent of ongoing mercury loading in the Delta. In San Francisco Bay, over 75 percent of the ongoing loading of mercury is coming from the Central Valley watershed, natural bed erosion, and atmospheric deposition. In both instances, the Regional Boards have struggled to find effective means of controlling these "untethered" sources of most of the mercury continuing to be taken-up by fish and other biota in the waters.

In 2010, the Central Valley Regional Board took the unprecedented step of assigning responsibility for open water and tributary sources of mercury to those State of California and federal agencies responsible for managing the land and water from which these mercury loads are derived. In its 2010 Delta Methylmercury TMDL, the Central Valley Regional Board specifically found that transportation and deposition of mercury-contaminated sediment from water management activities contribute to the Delta fish mercury impairment.

Specifically, the Regional Board determined that the State and Federal Water Projects affect the transportation of mercury and the production and transportation of methylmercury. Activities including water management and storage in and upstream of the Delta and Yolo Bypass, maintenance of and changes to salinity objectives, dredging and dredge materials disposal and reuse, and management of flood conveyance flows are subject to the open water methylmercury allocations. Agencies responsible for these activities in the Delta and Yolo Bypass include, but are not limited to, the Department of Water Resources, State Lands Commission, Central Valley Flood Protection Board,

U.S. Bureau of Reclamation, U.S. Army Corps of Engineers (USACE), and State Water Resources Control Board. The Regional Board also determined that the State of California owns and manages lands and waters of the state that contribute to methylmercury loads. As a result, the State Lands Commission and Department of Water Resources were also assigned responsibility for addressing these mercury contributions to the overall fish impairment.

Pursuant to the Delta Methylmercury TMDL, the state and federal agencies named as responsible parties must take the following actions:

- Characterize their projects' effects on ambient methylmercury and total mercury concentrations and loads in the Yolo Bypass and Delta;
- Conduct methylmercury and total mercury control studies to evaluate options to reduce methylmercury production in open waters under jurisdiction of the State Lands Commission and floodplain areas inundated by managed flood flows; and
- Minimize to the extent practicable any methylmercury and/or total mercury loading to the Delta and Yolo Bypass resulting from new and existing projects using feasible management practices that are not in conflict with salinity standard or other mandates (*e.g*., minimum flow and temperature mandates).

Assigning state and federal agency responsibility for mercury loads coming from land or projects over which these agencies have responsibility is reasonable, fair, and just. Without doing so, there is literally no hope of successfully abating mercury in fish from some California waters. Holding these state and federal agencies responsible is consistent with existing laws, regulations and authorities of the State and Regional Water Boards.

If the State Water Board intends to do everything reasonably possible to address mercury impairment of California's waters and the fish taken from them by tribal, subsistence and sport fishers, it is now time to assign responsibility for reducing ongoing mercury loading to the extent feasible to those state and federal agencies who own, operate, use or lease land and water projects that contribute to mercury to the systems. The State of California should also be asked to step forward to lead the public messaging and communication efforts to manage the risk from exposure to mercury in fish to women of child bearing age, children and other consumers of locally caught fish.

MC-3: Guidance to Regional Water Boards regarding Designation and Implementation of Proposed Beneficial Uses

The State Water Board should provide direction to Regional Water Boards in the following areas regarding the designation and implementation of the three new beneficial uses:

- How new beneficial uses should be designated in specific water bodies, including criteria for making this determination and a process for collecting, utilizing and interpreting fish consumption information;
- How to identify significant and insignificant sources, including generation and consideration of information regarding the relative contribution of sources, with an emphasis on

information developed as an element of an existing TMDL or through a TMDL-like analysis, and including legacy impacts associated with sediments flux, air deposition sources and other non-point source contributions; and

- The need to convene key stakeholders (tribes, subsistence fishing community, regulated community, State of California) as an element of the designation process and to address adoption and implementation of water quality objectives for designated uses. Considerations should include the full range of possible management measures and effectiveness, with the purpose of developing a common understanding of problems and potential solutions.

Suggested language for a State Water Board resolution is included as Attachment C to this letter.

MC-4: Clarification of Language in Beneficial Use Definitions

CVCWA remains concerned about the lack of limitations for the Tribal Tradition and Culture Use (CUL). Once a beneficial use is established and applied to a specific waterbody, that use must be protected, maintained, or attained where attainment does not currently occur. The proposed CUL use definition in the Staff Report provides no limitations as to how and when the use should be applied. This use currently includes "uses of water that support the cultural, spiritual, ceremonial, or traditional rights or lifeways of California Native American Tribes, including, but not limited to: navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials." It is difficult to see how this use could be protected, given that many of California's waterbodies have been highly modified over the years. This use should be revised with reasonable limitations, taking into account other factors, such as other uses of water, attainment expectations, and seasonality.

As has been discussed with your staff, concern exists regarding an element of the T-SUB and SUB beneficial uses definitions. The definitions for Tribal Subsistence Fishing (T-SUB) and Subsistence Fishing (SUB) both contain the word "individuals." The concern is that there may be confusion that this term is intended to indicate for any highly exposed individual engaging in the specified use. Use of the term "individuals", without further clarification or context, may lead to beneficial use designations for entire water bodies based on the activities of a single person. This approach would not be reasonable or feasible.

Based on our discussions, we do not believe this is the intent of the State Water Board in using this terminology. We therefore would ask for the addition of clarifying language. Specifically, we suggest the following additions:

Footnote to be added inSection II. BENEFICIAL USES.

5) Tribal Subsistence Fishing (T-SUB): Uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption **by individuals [see footnote],** households, or communities of California Native American Tribes to meet minimal needs for sustenance.

6) Subsistence Fishing (SUB): Uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption **by individuals [see footnote],** households, or communities, to meet minimal needs for sustenance.

[Footnote] – In the context of the T-SUB and SUB beneficial uses, the terms "individuals" or "households" are not intended to cover a single individual or single household engaging in these beneficial uses in a given waterbody. A single individual or household engaging in either the T-SUB or SUB beneficial use would not be, on its own, a basis for designation by a Regional Board, nor would consumption rates by a single individual or household constitute a reasonable baseline for establishing water quality objectives to protect that use.

This language should also be inserted into the Staff Report at p. 6. (Section 2.3.1) and elsewhere in the report where the T-SUB and SUB uses are referenced.

Finally, the Staff Report does not indicate that a Use Attainability Analysis is required for all three proposed beneficial uses, pursuant to federal law. Federal regulations require a use attainability analysis as described in 40 CFR section 131.10(g) when a state designates uses beyond uses specified in Clean Water Act section 101(a)(2). The uses in Clean Water Act section 101(a)(2) are for the protection and propagation of fish, shellfish and wildlife, and provide for recreation in and on the waters, informally referred to as the "fishable-swimmable uses". The proposed CUL, T-SUB, and SUB beneficial uses are not fishable-swimmable uses, and therefore any designation of such uses may occur only after the Regional Water Board has conducted a use attainability analysis pursuant to 40 CFR section 131.10(g). We recommend that the Staff Report be revised to include the acknowledgement that a use attainability analysis must be conducted before any of the proposed beneficial uses can be designated to a water body and provide guidance to Regional Board in making designation determinations.

MC-5: Process for Adoption of Mercury Fish Tissue Objectives

Water Code section 13241 requires Regional Boards (and the State Water Board) to establish water quality objectives that, in its judgment, will ensure the reasonable protection of beneficial uses. In establishing water quality objectives, the following factors (and others) shall all be considered:

- The past, present and future beneficial uses
- The ability to reasonably achieve water quality conditions through coordinated control of all factors which affect water quality in the area
- Economics

The past, present and future beneficial uses

A key consideration is whether the ability to consume fish containing mercury at the levels prescribed in the proposed mercury fish tissue objectives has existed since 1975. A second key

consideration is whether it is likely that such a consumption use is likely to occur in the future. This information has not been considered in the proposed policy or staff report.

<u>The ability to reasonably achieve water quality conditions through coordinated control of all factors which affect water quality in the area</u>

The staff report supporting the proposed Mercury Provisions does not include such an evaluation. While an implementation plan is included in the proposed policy, the effectiveness of that plan in achieving proposed water quality objectives is not addressed.

<u>Economics</u>

This requirement goes to the issue of whether required control measures associated with proposed water quality objectives meet the test of providing reasonable protection of beneficial uses. If resources are spent to implement control measures that will never meet the proposed objectives, this is to be considered as part of the process of establishing the objective. While the staff report includes an economic analysis, it does not consider whether control measures and associated costs are reasonable in terms of achieving the desired water quality conditions as reflected in the proposed water quality objectives.

Section 13242 of the Water Code requires that a program of implementation be developed and documented, wherein the control measures necessary to achieve proposed objectives would be identified.

B. Other Comments

The following other comments address more detailed aspects of the proposed policy and accompanying staff report.

OC -1: Section 6.14 Issue N - Success and responsibility of Exposure Reduction Program should be clarified/corrected.

- This section currently states incorrectly: **"***The San Francisco Bay mercury TMDL included a public exposure reduction program that was fairly successful (CDPH 2012). The success of the San Francisco Bay program was partly attributed to the assistance provided by CDPH. However, those resources have not been available for the public exposure reduction program for the Sacramento San Joaquin Delta, and it has been a struggle to put that program into action."* Correct this statement to indicate that CDPH and other agencies such as the Delta Conservancy were utilized as resources for the Sacramento San Joaquin Delta and recognize that this program is still in progress.
- Risk reduction activities associated with the San Francisco Bay mercury TMDL are still ongoing. The first sentence in the above paragraph should be edited to read: "*The San Francisco Bay mercury TMDL includes a public exposure reduction program that is fairly successful (CDPH 2012). The success of the San Francisco Bay program is partly attributed to the initial assistance provided by CDPH*."

- Also, remove the indication that the program has been a "~~struggle~~" to put into action.
- Add ***"The State should participate more in future exposure reduction activities, including participation from agencies such as the Delta Conservancy and the CDPH, with assistance from regulated dischargers and responsible parties."***

OC-2: Text contained within the staff report is inconsistent with respect to its application to water bodies with existing TMDLs.

Recommendation: Use the same text where requirements associated with current TMDLs are mentioned because currently it varies such as:

- Pg xviii: "*However, the water quality objectives would not apply to the waters described above where site-specific mercury water quality objectives are established."*
- Pg 13: "*The Provisions' program of implementation would apply to the same waters as the Mercury Water Quality Objectives, but the implementation provisions would not apply to dischargers that discharge to receiving waters for which a mercury or methylmercury total maximum daily load (a mercury or methylmercury TMDL) has been approved."*
- Pg 34: "Therefore, the Provisions' mercury objectives for the COMM and WILD beneficial uses do not supersede the site-specific objectives listed in Table 3-2."
- (SWB Staff should review other sections too for similar but not identical text).

Suggested language for inclusion
"The Provisions and Water Quality Objectives do not supersede established site-specific water quality objectives, and do not apply to waters for which a mercury TMDL (or other specified contaminant TMDL) has been approved."

Also, delete the text on page 40 of the staff report that says: ***~~"When the Regional Water Boards revisit these TMDLs, if they used 17.5 g/day as a consumption rate, they should consider updating it to 32g/day. This change should not make a substantial difference in the implementation for the reasons just described, but it would make targets more consistent statewide."~~***

OC-3: Appendix Table C-1 appears to be incomplete.

Recommendation: Add "Yes" to Sacramento River (Knights Landing to the Delta) to indicate development of a mercury/methylmercury TMDL for that water body. Other water bodies may also need an updated status.

OC-4: IV.D.2 Methods, Routine, Monitoring, and Compliance Schedules, Subsection 3.

"Compliance Determination: The annual average mercury concentration in the effluent shall be calculated as an arithmetic mean. For any sample reported as below the detection limit, one-half of the detection limit shall be used to calculate the arithmetic mean. For any sample reported as below the quantitation limit and above the detection limit, the estimated concentration shall be used to calculate the arithmetic mean."

DNQ are indicators of presence/absence for RP analysis but should not be used as quantified data. CVCWA recommends that the final draft Implementation of Water Quality Objectives for mercury include reporting protocols similar to those already adopted by Regional Boards for other NPDES permits.[1]

> Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
>
> When determining compliance for multiple sample data and the data set contains one or more reported determinations of DNQ of "Not Detected" (ND), the Discharger shall compute the median in place of the arithmetic mean.

OC-5: IV.D.2 Methods, Routine, Monitoring, and Compliance Schedules, Subsection 1.

> *"Methods: For monitoring total mercury in effluent, the discharger shall use any U.S. EPA-approved method that has a quantitation limit lower than the effluent limitation."*

CVCWA recommends further clarification to specify that the discharger shall conduct analysis according to test procedures approved under 40 CFR Part 136. For NPDES dischargers, "The analytical methods specified under 40 CFR Part 136 are required for all monitoring performed under the NPDES Program, unless the permit specifically requires alternate methods."2

Again, we thank you for the opportunity to provide these comments. We look forward to working with you and your staff to refine the current proposed policy language and to craft effective solutions applicable to future designation and implementation of the new beneficial uses and the associated Mercury Provisions.

Sincerely,

Debbie Webster

Debbie Webster, Executive Officer
Central Valley Clean Water Association (CVCWA)

[1] Reporting protocols as stipulated in Monitoring and Reporting Programs such as NPDES Order No. R5-2010-0114-01 for the Sacramento Regional County Sanitation District.

[2] NPDES Permit Writers' Manual (EPA-833-K-10-001), Section 7.1.3.

Adam Link
California Association of Sanitation Agencies (CASA)

Steven Jepsen
Southern California Alliance of POTWs (SCAP)

David Williams
Bay Area Clean Water Agencies

CC: [SWRCB members]

APPENDICES

Attachment A– CVCWA Delta Methylmercury Charts
Attachment B – Markup of Regulatory Language
Attachment C – Suggested language for SWRCB Resolution

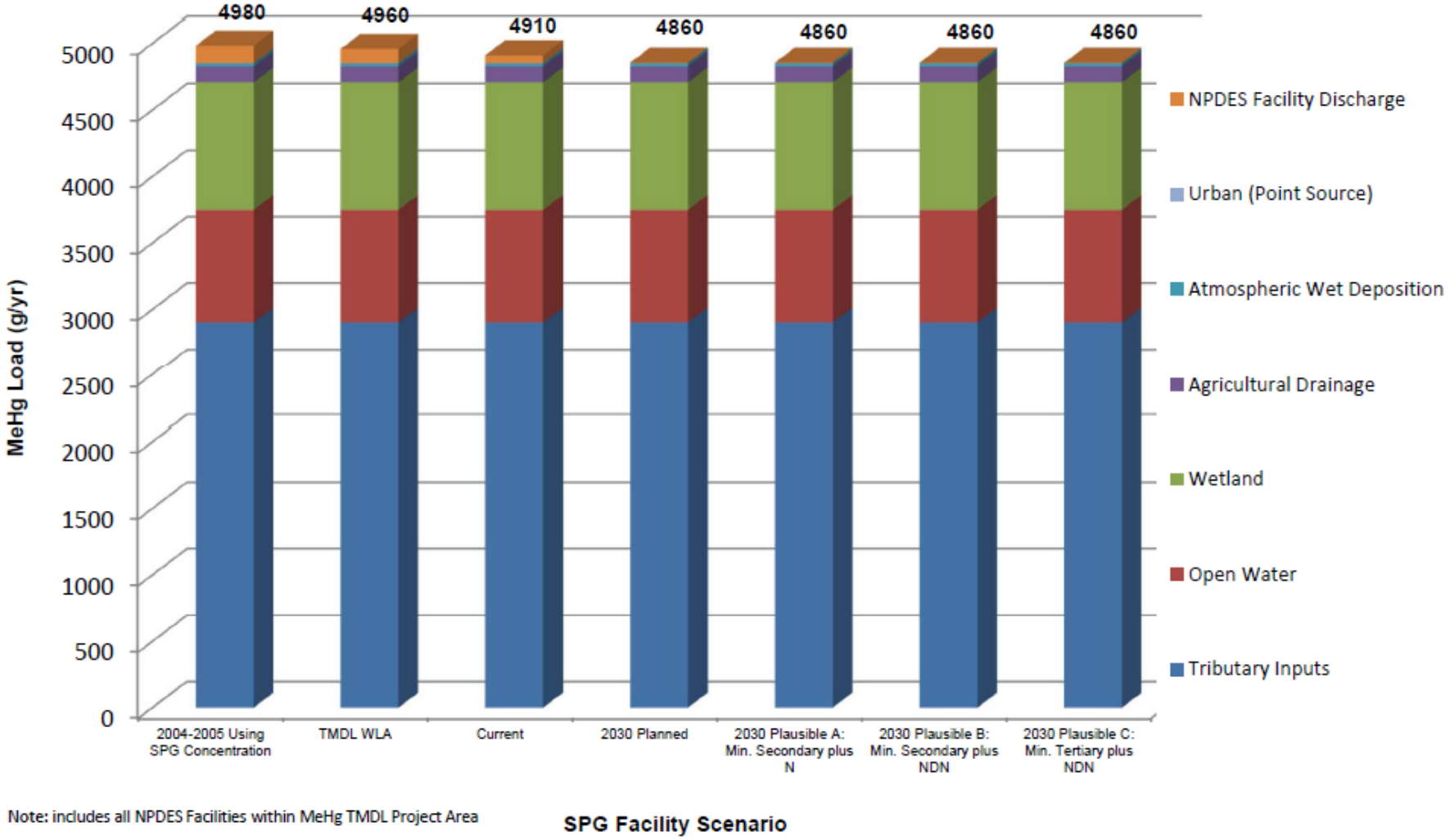
ATTACHMENT A

CVCWA Testimony
SWRCB Hearing
Proposed Mercury Provisions

February 7, 2017

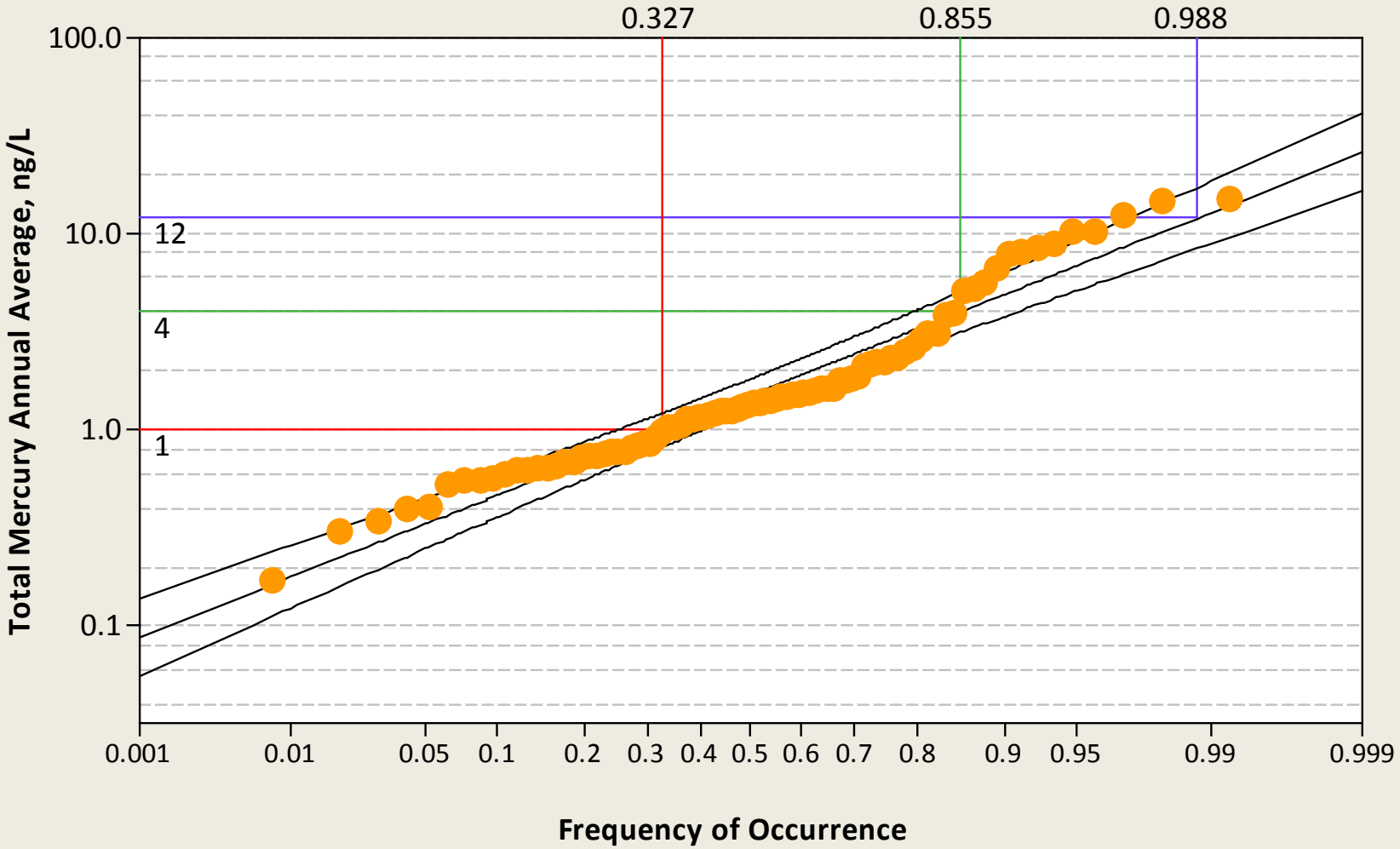
Thomas Grovhoug, LWA

Comparison of MeHg TMDL Project Area MeHg Loads at Varying SPG Facility Scenarios



Note: includes all NPDES Facilities within MeHg TMDL Project Area

Hg Concentration Annual Average Probability Plot for Tertiary plus NDN Facilities



ATTACHMENT B

Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Part 2).[11] *Part 2 would constitute new regulatory language.]*

II. BENEFICIAL USES

[Proposed text to be added to Chapter II (Beneficial Uses) of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan).]

A Regional Water Quality Control Board shall use the beneficial uses and abbreviations listed below, to the extent it defines such activities in a water quality control plan after *[insert effective date of Part 2]*.

To designate the Tribal Tradition and Culture or Tribal Subsistence Fishing beneficial uses in a water quality control plan for a particular waterbody segment and time(s) of year, a CALIFORNIA NATIVE AMERICAN TRIBE must confirm the designation is appropriate. No confirmation is required to designate the Subsistence Fishing beneficial use in a water quality control plan.

The Tribal Subsistence Fishing and Subsistence Fishing beneficial uses relate to the risks to human health from the consumption of noncommercial fish or shellfish. The two subsistence fishing beneficial uses assume a higher rate of consumption of fish or shellfish than that protected under the Commercial and Sport Fishing and the Tribal Tradition and Culture beneficial uses. The function of the Tribal Subsistence Fishing and Subsistence Fishing beneficial uses is not to protect or enhance fish populations or aquatic habitats. Fish populations and aquatic habitats are protected and enhanced by other beneficial uses, including but not limited to, Aquaculture, Warm Freshwater Habitat, and Cold Freshwater Habitat, that are designed to support aquatic habitats for the reproduction or development of fish.

4) Tribal Tradition and Culture (CUL): Uses of water that support the cultural, spiritual, ceremonial, or traditional rights or LIFEWAYS of California Native American Tribes, including, but not limited to: navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials.
5) Tribal Subsistence Fishing (T-SUB): Uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption by individuals, households, or communities of California Native American Tribes to meet minimal needs for sustenance.
6) Subsistence Fishing (SUB): Uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption by individuals, households, or communities, to meet minimal needs for sustenance.

III. WATER QUALITY OBJECTIVES

[*Proposed text to be added to Chapter III (Water Quality Objectives) of the ISWEBE Plan.*]

11 The State Water Board intends to amend the Water Quality Control Plan for Enclosed Bays and Estuaries of California to create the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan (ISWEBE Plan). The State Water Board intends that Part 2 will be incorporated into the ISWEBE Plan, upon the ISWEBE Plan's adoption.

D. Mercury

1. Applicability

Chapter III.D.2 establishes water quality objectives for the reasonable protection of people and wildlife that consume fish and apply to all the inland surface waters, enclosed bays and estuaries of the State that have the applicable beneficial uses. The water quality objectives that protect people who consume fish apply to waters with the COMM, CUL, T-SUB, and SUB[12] beneficial uses. The water quality objectives that protect wildlife that consume fish apply to waters with WILD, MAR, RARE, WARM, COLD, EST, and SAL beneficial uses.[13]

Mercury Water Quality Objectives

Chapter III.D.2 contains five numeric mercury fish tissue water quality objectives, which are formulated for one or more of the applicable beneficial uses, depending on the consumption pattern (which includes consumption rate, fish size, and species) by individuals and wildlife. Additionally, different sizes and species of fish contained at a water body will, in some cases, affect whether a particular water quality objective may be utilized to evaluate whether one or more beneficial uses are supported. Therefore, the fish in a particular water body would dictate which water quality objective(s) must be evaluated to ensure all the applicable wildlife beneficial uses are supported, as discussed below and illustrated in the flow chart in Attachment B. For any of the mercury fish tissue water quality objectives, measurements of total mercury concentrations in fish tissue may be substituted for methylmercury concentrations in fish tissue.

a. Sport Fish Water Quality Objective

1) Application of the Sport Fish Water Quality Objective

The Sport Fish Water Quality Objective for mercury applies to waters with the beneficial uses of COMM, CUL[14], WILD, and MAR. However, in some circumstances (i.e., depending on whether TROPHIC LEVEL 3[15] or TROPHIC LEVEL 4 fish are in the water body), with respect to the WILD and MAR beneficial uses, additional water quality objectives also need to be utilized to evaluate whether consumption of fish by all wildlife species is supported (see below discussion).

With respect to the WILD and MAR beneficial uses, the Sport Fish Water Quality Objective may be used to evaluate whether all species are supported only when applied

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12 The water quality objective applicable to the SUB beneficial use (see Section III.D.2.c) also applies to the Subsistence Fishing (FISH) beneficial use contained in the North Coast Regional Water Quality Control Board's water quality control plan. (Water Quality Control Plan for the North Coast (May 2011), p. 2-3.00.)

13 Any explicit reference in the MERCURY PROVISIONS to the WILD and MAR beneficial uses shall hereinafter include the WARM, COLD, EST, and SAL beneficial uses.

14 If site-specific studies indicate a consumption pattern under the CUL beneficial use higher than the consumption rate used for the objective to support the COMM beneficial use, then the Regional Water Board should consider adopting a site-specific objective to protect consumption of fish under the CUL beneficial use.

15 Terms in "all cap" font (excepting the beneficial use abbreviations) are defined in Attachment A (Glossary).

to TROPHIC LEVEL 4 fish, except with respect to the California least tern (as discussed in Chapter III.D.2.e). If the objective is measured using TROPHIC LEVEL 3 fish, protection of all wildlife species within the WILD and MAR beneficial uses is not ensured. Therefore, if TROPHIC LEVEL 3 fish are used, then the Prey Fish Water Quality Objective (as described in Chapter III.D.2.d) shall be used, but if the water body is habitat for California least tern, then the California Least Tern Prey Fish Objective (as described in Chapter III.D.2.e) shall be used. However, if the Sport Fish Water Quality Objective is exceeded when applied to TROPHIC LEVEL 3 fish, that is sufficient evidence to indicate that the Prey Fish Water Quality Objective or, if applicable, the California Least Tern Prey Fish Objective is also exceeded without having to measure the two latter objectives (see flow chart in Attachment B).

2) Sport Fish Water Quality Objective
The Sport Fish Water Quality Objective is: The average methylmercury concentrations shall not exceed 0.2 milligrams per kilogram (mg/kg) fish tissue within a calendar year. The water quality objective applies to the WET WEIGHT concentration in skinless fillet in TROPHIC LEVEL 3 or TROPHIC LEVEL 4 fish, whichever is the HIGHEST TROPHIC LEVEL FISH in the water body. Freshwater TROPHIC LEVEL 3 fish are between 150 to 500 millimeters (mm) in total length and TROPHIC LEVEL 4 fish are between 200 to 500 mm in total length, except for sizes specified in Attachment C, or as additionally limited in size in accordance with LEGAL SIZE LIMIT for the species caught. Estuarine fish shall be within the LEGAL SIZELIMIT and greater than 150 mm, or as otherwise specified in Attachment C.

b. Tribal Subsistence Fishing Water Quality Objective

1) Application of the Tribal Subsistence Fishing Water Quality Objective
The Tribal Subsistence Fishing Water Quality Objective applies to waters with the T-SUB beneficial use.

2) Tribal Subsistence Fishing Water Quality Objective
The Tribal Subsistence Fishing Water Quality Objective is: The average methylmercury concentrations shall not exceed 0.04 mg/kg fish tissue within a calendar year. The objective applies to the WET WEIGHT concentration in skinless fillet from a mixture of 70 percent TROPHIC LEVEL 3 fish and 30 percent TROPHIC LEVEL 4 fish as detailed in Attachment C.

c. Subsistence Fishing Water Quality Objective

1) Application of the Subsistence Fishing Water Quality Objective
The Subsistence Fishing Water Quality Objective applies to waters with the SUB beneficial use or to waters with the FISH beneficial use (see footnote 2).

2) Subsistence Fishing Water Quality Objective
The Subsistence Fishing Water Quality Objective is: Waters with the Subsistence Fishing (SUB) beneficial use shall be maintained free of mercury at concentrations which accumulate in fish and cause adverse biological, reproductive, or neurological effects. The fish consumption rate used to evaluate this objective shall be derived from water

body- and population-specific data and information on the subsistence fishers' rate and form (e.g. whole, fillet with skin, skinless fillet) of fish consumption.[16]

When a water quality control plan designates a water body or water body segment with the Subsistence Fishing (SUB) beneficial use, development of a region-wide or site-specific numeric fish tissue mercury water quality objective is recommended to account for the wide variation of consumption rate and fish species encompassed by the SUB beneficial use.

d. Prey Fish Water Quality Objective

1) Application of the Prey Fish Water Quality Objective

The Prey Fish Water Quality Objective applies to waters with the WILD and MAR beneficial uses. However, the objective does not apply to water body segments where the California Least Tern Prey Fish Water Quality Objective applies (see Chapter III.D.2.e).

2) Prey Fish Water Quality Objective

The Prey Fish Water Quality Objective is: The average methylmercury concentrations shall not exceed 0.05 mg/kg in WET WEIGHT whole fish tissue of any species between 50 to 150 mm in total length during the breeding season. The breeding season is February 1 through July 31, unless site-specific information indicates another appropriate breeding period.

e. California Least Tern Prey Fish Water Quality Objective

1) Application of the California Least Tern Prey Fish Water Quality Objective

The California Least Tern Prey Fish Water Quality Objective applies to water with the WILD, MAR, and RARE beneficial uses at water bodies where the least tern or least tern habitat exists, including but not limited to the water bodies identified in Attachment D.

2) California Least Tern Prey Fish Water Quality Objective

The California Least Tern Prey Fish Water Quality Objective is: The average methylmercury concentrations shall not exceed 0.03 mg/kg fish tissue from April 1 through August 31. The objective applies to the WET WEIGHT concentration in whole fish less than 50 mm total length.

[16] U.S. EPA recommended national subsistence fishing consumption rate of 142 grams per day (4 to 5 meals per week) shall be used to translate the narrative objective unless a site-specific numeric water quality objective is developed or an external peer-reviewed consumption study uses a different methodology to translate the narrative water quality objective.

Interaction of Mercury Water Quality Objectives with Basin Plans

The MERCURY WATER QUALITY OBJECTIVES do not supersede any site-specific numeric mercury water quality objectives established in a Basin Plan, except (i) the freshwater mercury water quality objective for chronic effects to aquatic life (0.025 µg/L) established in the San Francisco Bay Basin Water Quality Control Plan (Table 3-4, and corresponding note); and (ii) the total body burden of 0.5 µg/g wet weight established for the mercury water quality objective for aquatic organisms in the Water Quality Control Plan for the Central Coastal Basin (see note accompanying Table 3-5).

IV. IMPLEMENTATION OF WATER QUALITY OBJECTIVES

[*Proposed text to be added to Chapter IV (Implementation of Water Quality Objectives) of the ISWEBE Plan.*]

D. Mercury

2. General Applicability of the Mercury Implementation Provisions

The implementation provisions of Chapter IV.D shall be implemented through NPDES permits issued pursuant to section 402 of the Clean Water Act, water quality certifications issued pursuant to section 401 of the Clean Water Act, waste discharge requirements (WDRs), and waivers of WDRs, where any of the MERCURY WATER QUALITY OBJECTIVES apply. The implementation provisions pertaining to a particular beneficial use do not apply to dischargers that discharge to receiving waters for which a mercury or methylmercury total maximum daily load (TMDL) is established pertaining to the same beneficial use or uses.[17]

Municipal Wastewater and Industrial Discharges

a. Applicability

Chapter IV.D.2 applies to dischargers issued individual non-STORM WATER National Pollutant Discharge Elimination System (NPDES) permits. The PERMITTING AUTHORITY shall incorporate the following requirements, as applicable, into NPDES permits during every permit issuance or renewal.

b. Water Column Translations

Because the Mercury Water Quality Objectives (Chapter III.D) are fish tissue based and not water column based, fish tissue based water quality objectives were converted to water column values (denoted as "C") to be used for reasonable potential analysis and development of effluent limitations. The applicable value of C that corresponds with the water body/beneficial

[17] Such "receiving waters" are those for which a mercury or methylmercury TMDL is approved and does not include upstream water bodies even if the TMDL contains waste load allocations for the dischargers to the upstream water bodies to be implemented as effluent limitations to achieve the downstream water quality standard. For such upstream dischargers, the implementation provisions of Chapter IV.D apply. In the case where both the TMDL and application of the procedure at Chapter IV.D.2.c requires an effluent limitation, then the more stringent requirement shall apply to the discharge.

use designations in Table 1 shall be used to determine a discharger's REASONABLE POTENTIAL and any applicable effluent limitation (see Chapter IV.D.2.c). The PERMITTING AUTHORITY shall use its best judgement to assign the most appropriate water body type (in Table 1) based on the receiving water's potential for methylation during the period of discharge(s). Alternatively, a site-specific water column concentration value for C can be developed as described in Chapter IV.D.2.b.1, below.

Table 1. Values for C (water column concentration) based on water-body type and beneficial use.

Beneficial Use of the Receiving Water	**COMM, CUL, WILD, MAR, RARE**	**COMM, CUL, WILD, MAR, RARE**	**COMM, CUL, T-SUB, WILD, MAR, RARE**	**T-SUB**	**T-SUB**	**SUB**
Water body type	Flowing water bodies (generally, rivers, creeks, and streams)	Slow moving water bodies (generally, lagoons and marshes)	Lakes and reservoirs	Flowing water bodies (generally, rivers, creeks, and streams)	Slow moving water bodies (generally, lagoons and marshes)	Any
Value for "C"	12 ng/L total mercury	4 ng/L total mercury	Case-by-case*	4 ng/L total mercury	1 ng/L total mercury	Case-by-case*

*The PERMITTING AUTHORITY shall calculate C from the water quality objective, and may use available data, including U.S. EPA's recommended national bioaccumulation factors and chemical translators.

1) Site-Specific Water Column Translations

The PERMITTING AUTHORITY may develop a site-specific water column concentration value (C) by utilizing a site-specific BIOACCUMULATION FACTOR, linear regression model, or peer-reviewed model, derived from a study of the receiving water downstream of the discharge. The study must, at a minimum, include data from three separate time points. Data collected at each time point must all be collected on the same day from within the same vicinity and must include a minimum of: 1) four total mercury water column samples, 2) four dissolved methylmercury water column samples, and 3) ten mercury fish tissue samples. The fish tissue samples shall be from TROPHIC LEVEL 4 FISH, but if TROPHIC LEVEL 4 FISH are not the HIGHEST TROPHIC LEVEL FISH in the water body, then the samples shall be from the size of fish that corresponds with the Prey Fish Water Quality Objective or California Least Tern Prey Fish Water Quality Objective, whichever is applicable (see Chapter III.D.2). The sampling time points shall be at least 90 days apart. If TROPHIC LEVEL 4 FISH are not the HIGHEST TROPHIC LEVEL FISH in the water body, then two of the sampling time points shall occur during the breeding season for the applicable water quality objective. A site-specific BIOACCUMULATION FACTOR shall be calculated as the mean methylmercury tissue concentration in one trophic level divided by the mean methylmercury concentration in

water. Multiple bioaccumulation factors from different time points or different species shall be combined using a geometric mean. To derive water column concentration in the form of total mercury, a chemical translator must also be used to convert form methylmercury to total mercury.[18]

c. Determining Whether A Discharge Requires an Effluent Limitation for Mercury

1) Reasonable Potential Analysis

A PERMITING AUTHORITY is required to apply section 1.3 of the State Water Resources Control Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (generally referred to as the SIP) (pages 5-8), to determine whether a discharge has REASONABLE POTENTIAL, in which case the permit must contain a water quality-based effluent limitation.

To determine REASONABLE POTENTIAL, the PERMITTING AUTHORITY shall apply Steps 1-8 of section 1.3 of the SIP, as modified by the following:

For mercury and other bio-accumulative pollutants that are regulated through fish tissue objectives, the REASONABLE POTENTIAL determination shall be based on Step 7 of the SIP, as modified below:

Step 7: Replace Step 7 with the following: "Information that may be used to aid in determining if a water quality-based effluent limitation is required includes (but is not limited to): the facility type, the discharge type, mass loading analysis which evaluates the relative contribution of the discharge in comparison to other sources, assessment of the effect of reductions of the discharge loading to attainment of the water quality or fish tissue objective, demonstration of the application of best practices of pollution prevention and industrial pretreatment, presence or lack of dilution, history of compliance problems, potential toxic impact of discharge, fish tissue residue data, existing water quality and beneficial uses of receiving water, CWA 303(d) listing for the pollutant, the presence of endangered or threatened species or critical habitat, and other relevant information. Where a TMDL has been adopted, approved by SWRCB and EPA, and is being implemented, that information should be given special consideration in the determination of the need for a water quality-based effluent limitation for the discharge in question. If data or other information needed to complete the above evaluation is unavailable or insufficient, as described in Section 1.2, to determine ~~o~~if a water quality-based effluent limitation is required, proceed with Step 8."

~~*Step 1*: Replace Step 1 of the SIP with the following: Identify the applicable water column concentration (C) for the lowest (most stringent) mercury water quality objective applicable to the receiving water in accordance with Chapter IV.D.2.b.~~

~~*Step 3*: Replace Step 3 of the SIP with the following: Determine the mercury concentration for the effluent using the highest observed annual average effluent mercury concentration. The annual average shall be calculated as an arithmetic mean. For any sample reported as below the detection limit, one half of the detection limit shall~~

~~be used to calculate the arithmetic mean. For any sample reported as below the quantitation limit and above the detection limit, the estimated concentration shall be used to calculate the arithmetic mean. The annual average concentration is used to account for the long-term nature of the methylmercury bioaccumulation process, which may not otherwise be reflected using the maximum concentration as required by the SIP.~~

~~*Step 4*: Apply as set forth in the SIP, but utilize the annual average mercury concentration from Step 3 (rather than an MEC) to compare to the C from Step 1.~~

~~*Step 5*: Apply as set forth in the SIP, but replace the determination of the "maximum" ambient background concentration for mercury (denoted as B in the SIP), with the highest observed annual average ambient background. The annual average shall be calculated as an arithmetic mean as described in Section 1.4.3.2 of the SIP.~~

2) Calculation of the Effluent Limitations

If, upon the completion of applying the REASONABLE POTENTIAL analysis set forth in Chapter IV.D.2.c.1, the PERMITTING AUTHORITY does not exempt certain discharges from some or all of the provisions of Chapter IV.D.2 under this Chapter, but determines that a water quality based effluent limitation is required for mercury or other bio-accumulative pollutants that are regulated through fish tissue objectives, then the

[18] See U.S. EPA, Water Quality Criteria for the Protection of Human Health: Methylmercury (EPA-823-R-01- 001, Jan. 2001), app. A, pp. A-19 to A-25 (describes the chemical translators and provides national translators to convert form methylmercury to total mercury).

PERMITTING AUTHORITY shall calculate the effluent limitation as follows: ~~by applying section 1.4 of the SIP.~~

Replace Part A of section 1.4 of the SIP with the following:

"A. If a TMDL is in effect for mercury ~~(~~or other bio-accumulative pollutant~~)~~, retain the water quality-based effluent limitation at the existing wasteload allocation (WLA) in the existing TMDL until an amended TMDL is adopted and approved. Upon adoption and approval of an amended ~~new~~ TMDL associated with new ~~mercury~~ water quality objectives ~~(~~for mercury or other bio-accumulative pollutants ~~objectives)~~, adjust the water quality-based effluent limitation to be consistent with the WLAs specified in the ~~new~~amended -TMDL.

If a TMDL is not in effect for mercury ~~(~~or other bio-accumulative pollutant~~s)~~, set an interim performance-based effluent limitation pending development of a ~~pending or future~~ TMDL for such bio-accumulative pollutants. Also, establish NPDES permit requirements to: (1) ensure implementation of best practices for pollution prevention and industrial pretreatment, (2) require participation in the development of the TMDL, and (3) require participation in a stakeholder effort to identify control measures on the major sources impacting the levels of mercury or other bio-accumulative pollutants in fish tissue in the receiving waters of the discharge."

~~If part B of section 1.4 of the SIP applies, the PERMITTING AUTHORITY shall apply Steps 1-7 contained in part B of the SIP as modified by the following:~~

~~*Step 1:* Replace Step 1 of the SIP with the following: Use the same value for C as used for the REASONABLE POTENTIAL analysis in Chapter IV.D.2.c.1, Step 1, rather than the applicable fish tissue mercury water quality objective. If data are insufficient to calculate the effluent limitation, the RWQCB shall establish interim requirements in accordance with section 2.2.2 of the SIP.~~

~~*Step 2:* Apply as set forth in the SIP, except the ambient background concentration (referred to as B in the SIP) shall be calculated as an arithmetic mean as described in Section 1.4.3.2 of the SIP. Dilution shall be prohibited if the mercury concentration in fish tissue from fish in the receiving water exceeds the applicable MERCURY WATER QUALITY OBJECTIVES.~~

~~*Steps 3-5:* Skip Steps 3-5.~~

~~*Step 6:* Apply as set forth in the SIP but set the effluent limitation as an annual average of total mercury (rather than a monthly average) equal to the effluent concentration allowance (ECA) (from Step 2).~~

~~*Step 7:* Skip Step 7.~~

Methods, Routine Monitoring, and Compliance Schedules

1) Methods. For monitoring total mercury in effluent, the discharger shall use any U.S. EPA-approved method that has a quantitation limit lower than the effluent limitation. For

monitoring receiving water, the discharger shall use any U.S. EPA-approved method that has a quantitation limit lower than 0.5 ng/L for total mercury, and lower than 0.06 ng/L for methylmercury.

2) Routine Monitoring. The following are the minimum monitoring requirements for dischargers assigned an effluent limitation, but the PERMITTING AUTHORITY may require dischargers to conduct additional monitoring. The rationale for requiring additional mercury monitoring must be documented in the NPDES fact sheet or equivalent document.
    i. Dischargers with mercury effluent limitations that are authorized to discharge at a rate equal to or greater than five million gallons per day are required to conduct routine total mercury monitoring in the effluent at a frequency no less than once each CALENDAR QUARTER for the duration of the permit.
    ii. Dischargers with mercury effluent limitations that are authorized to discharge at a rate less than five million gallons per day are required to conduct routine total mercury monitoring in the effluent at a frequency no less than once each year for the duration of the permit.
    iii. Dischargers without mercury effluent limitations are required to conduct total mercury monitoring in the effluent at a frequency of no less than once per permit cycle.

3) Compliance Determination. The annual average mercury concentration in the effluent shall be calculated as an arithmetic mean. For any sample reported as below the detection limit, one half of the detection limit shall be used to calculate the arithmetic mean. For any sample reported as below the quantitation limit and above the detection limit, the estimated concentration shall be used to calculate the arithmetic mean.
4) Compliance Schedule. The PERMITTING AUTHORITY may include a compliance schedule in NPDES permits to achieve the mercury effluent limitation in accordance with the Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits (State Water Board Resolution No. 2008-0025).

Exceptions to the Reasonable Potential Analysis

1) Small Disadvantaged Communities. The PERMITTING AUTHORITY is authorized to exempt POTWs only serving SMALL DISADVANTAGED COMMUNITIES from some or all of the provisions of Chapter IV.D.2.c if the PERMITTING AUTHORITY makes a finding that the discharge will have no REASONABLE POTENTIAL with respect the applicable MERCURY WATER QUALITY OBJECTIVES. For POTWs only serving SMALL DISADVANTAGED COMMUNITIES that do not have an effluent discharge prior to permit issuance or renewal that is representative of the quality of the proposed discharge, the PERMITTING AUTHORITY is authorized to make this determination and exempt the POTW only after the first year of effluent discharge.
   If exempt, the PERMITTING AUTHORITY shall have the discretion to assign routine monitoring as necessary. Routine monitoring schedules for POTWs only serving SMALL DISADVANTAGED COMMUNITIES shall not exceed the applicable frequency specified in Chapter IV.D.2.d.2 for the discharger's authorized rate of discharge.

2) Insignificant Discharges. The PERMITTING AUTHORITY is authorized to exempt certain dischargers from some or all of the provisions of Chapter IV.D.2 if the PERMITTING AUTHORITY makes a finding that the discharge will have no REASONABLE POTENTIAL with respect to the applicable MERCURY WATER QUALITY OBJECTIVES.
   If exempt, the PERMITTING AUTHORITY shall have the discretion to assign routine monitoring as necessary. Routine monitoring schedules for INSIGNIFICANT DISCHARGES shall not exceed the applicable frequency specified in Chapter IV.D.2.d.2 for the discharger's authorized rate of discharge.
   If determined to be exempt, nothing in this provision shall affect any obligation or requirements otherwise imposed by the PERMITTING AUTHORITY in duly adopted permits issued by the PERMITTING AUTHORITY.

Storm Water Discharges

d. Applicability

Chapter IV.D.3 applies to storm water dischargers regulated under general and individual NPDES STORM WATER permits issued pursuant to Clean Water Act section 402, subsection (p). The PERMITTING AUTHORITY shall include the requirements in Chapter IV.D.3.b in individual and general NPDES STORM WATER permits when adopting or re-issuing the permits.

e. Municipal Separate Storm Sewer Systems

1) Phase I and Phase II MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) permits shall include a combination of the following mercury pollution prevention and pollution control measures to reduce total mercury or methylmercury discharges:[19] All of the following control measures are required, except, at the discretion of the PERMITTING AUTHORITY, additional measure(s) may be substituted for one or more measures if the substituted measure(s) would provide an equivalent level of control or prevent total mercury or methylmercury pollution. If the PERMITTING AUTHORITY substitutes other measures, the justification shall be documented in the permit fact sheet or equivalent document. The effort involved in each of the required measures shall be proportional to the size and population of the MS4.
    i. Thermometer exchange programs and fluorescent lamp recycling programs, or enhancement of household hazardous waste collection programs to better address mercury-containing waste products (potentially including thermometers and other gauges, batteries, fluorescent and other lamps, switches, relays, sensors and thermostats).
    ii. Public education and outreach on disposal of household mercury-containing products and use of non-mercury containing alternatives.
    iii. Education of auto dismantlers on how to remove, store, and dispose of mercury switches in autos.
    iv. Survey of use, handling, and disposal of mercury-containing products used by the MS4 discharger agencies and development of a policy and time schedule for eliminating the use of mercury containing products by the discharger.
2) The PERMITTING AUTHORITY may include best management practices to control erosion in MS4 permits. However, the MS4 permit shall contain best management practices for AREAS WITH ELEVATED MERCURY CONCENTRATIONS.

f. Industrial Activities

Upon reissuance, the State Water Board shall revise the existing Numeric Action Level (NAL) for total mercury in the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial General Permit) from 1400 ng/L to 300 ng/L or lower.

Mine Site Remediation

The PERMITTING AUTHORITY shall require dischargers to implement erosion and sediment control measures to prevent or control mercury in discharges when adopting, re-issuing, or modifying WDRs or waivers of WDRs for dischargers subject to the requirements of Title 27 of the California Code of Regulations, section 22510 (closure and post-closure of mining sites), from land where mercury was mined or mercury was used during ore processing.

Nonpoint Source Discharges

The PERMITTING AUTHORITY has discretion under existing law to require dischargers to implement erosion and sediment control measures in WDRs or waivers of WDRs, and should

[19] On the effective date of the MERCURY WATER QUALITY OBJECTIVES, the Phase I and Phase II MS4 permits require pollution prevention and control measures (but not explicitly for mercury), which already may encompass one or more actions identified in Chapter IV.D.3.b.

consider requiring such measures in AREAS WITH ELEVATED MERCURY CONCENTRATIONS when adopting, re-issuing, or modifying a WDRs or waiver of WDRs.

Dredging Activities

The PERMITTING AUTHORITY has discretion under existing law to require dischargers to implement total mercury monitoring and procedures to control the disturbance and discharge of mercury-contaminated material during dredging and disposal of dredged material, and should consider requiring such measures in AREAS WITH ELEVATED MERCURY CONCENTRATIONS when adopting, re-issuing, or modifying a water quality certification, WDRs, or waiver of WDRs.

Wetland Projects

The PERMITTING AUTHORITY has discretion under existing law to require project applicants that establish (create) or restore wetlands to include design features or management measures to reduce the production of methylmercury in the wetland, including minimizing the wetting and drying of soil by keeping the wetland flooded and sediment control measures to reduce the transport of total mercury or methylmercury out of the wetland, and should consider requiring such measures in AREAS WITH ELEVATED MERCURY CONCENTRATIONS, when adopting, re-issuing, or modifying water quality certifications, WDRs, or waivers of WDRs.

3. Attachment A. Glossary

AREAS WITH ELEVATED MERCURY CONCENTRATIONS: Areas with elevated mercury concentrations include the following areas:

1) Areas located in the Coast Range mountains with naturally mercury-enriched soil or sediments with total mercury concentrations of 1 mg/kg or higher;
2) Areas located in an industrial area with soil or sediments with total mercury concentrations of 1 mg/kg or higher;
3) Areas located within historic mercury, silver, or gold mine tailings;
4) Areas located within historic hydraulic gold mining pits in the Sierra Nevada mountain range.
5) Any other area(s) determined by the PERMITTING AUTHORITY in the applicable order.

BIOACCUMULATION: A process in which an organism's body burden of a pollutant exceeds that of its surrounding environment as a result of chemical uptake through all routes of chemical exposure: dietary and dermal absorption and transport across the respiratory surface.

BIOACCUMULATION FACTOR: The ratio of the concentration of a contaminant in the tissue of the organism to the concentration of the contaminant in the surrounding ambient water (see BIOACCUMULATION). A bioaccumulation factor (BAF) can be used to estimate the concentration of the chemical in water (C_{water}) that corresponds to concentration of chemical in fish tissue (C_{tissue}) using the following equation:

$$\mathrm{BAF} = \frac{C_{tttttttttt}}{C_{wwwwtttww}}$$

CALENDAR QUARTER: A period of time defined as three successive calendar months.

CALIFORNIA NATIVE AMERICAN TRIBE: A federally-recognized California tribal government listed on the most recent notice of the Federal Register or a non-federally recognized California tribal government on the California Tribal Consultation List maintained by the California Native American Heritage Commission.

HIGHEST TROPHIC LEVEL FISH: Either TROPHIC LEVEL 3 or TROPHIC LEVEL 4 fish, whichever is the highest trophic level in the water body that is caught during monitoring, assessment, or other studies, that meet applicable quality assurance requirements.

INSIGNIFICANT DISCHARGES: NPDES discharges that are determined to be a very low threat to water quality by the PERMITTING AUTHORITY.

LEGAL SIZE LIMIT: The size limits of fish species for recreational fishing, established by title 14, California Code of Regulations sections 5.00 through 5.95.

LIFEWAYS: Any customs, practices, or art of a CALIFORNIA NATIVE AMERICAN TRIBE.

MERCURY WATER QUALITY OBJECTIVES: The fish tissue mercury water quality objectives set forth in Chapter III.D.2.

MERCURY PROVISIONS: The MERCURY WATER QUALITY OBJECTIVES and the implementation of those water quality objectives contained in Chapters III and IV, respectively.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4s): Same meaning as set forth in 40 Code of Federal Regulations, section 122.26(b)(8).

PERMITTING AUTHORITY: The State Water Board or Regional Water Board, whichever issues the permit or water quality certification.

PUBLICLY OWNED TREATMENT WORKS (POTWs): Facilities owned by a state or municipality that store, treat, recycle, and reclaim municipal sewage or industrial wastes of a liquid nature.

REASONABLE POTENTIAL: A designation used for a waste discharge that is projected or calculated to cause or contribute to an excursion above a water quality standard.

SMALL DISADVANTAGED COMMUNITIES: Municipalities with populations of 20,000 persons or less, or a reasonably isolated and divisible segment of a larger municipality encompassing 20,000 persons or less, with an annual median household income that is less than 80 percent of the statewide annual median household income.

STORM WATER: Same meaning as set forth in 40 Code of Federal Regulations section 122.26(b)(13).

TROPHIC LEVEL 3 FISH (TL3): Fish that consume mainly zooplankton, benthic invertebrates, and small, phytoplankton-dependent fish. Species include rainbow and brook trout, blue gill, sunfishes, suckers, and bullhead. Examples are shown in Attachment C.

TROPHIC LEVEL 4 FISH (TL4): Fish that consume TROPHIC LEVEL 3 fish and other aquatic organisms. Species include largemouth, smallmouth, spotted, and striped bass; brown and lake trout; catfish, and Sacramento pikeminnow. Examples are shown in Attachment C.

WET WEIGHT*:* Wet weight is part of the format for expressing the concentration of methylmercury in fish tissue. The mercury water quality objectives are expressed as a mass of methylmercury per mass of fresh or “wet” fish tissue. Concentrations expressed as methylmercury in dry weight of fish are not equivalent and must be converted to concentration on a wet weight basis if being compared with the objectives and targets.

4. Attachment B. Mercury Prey Fish Decision Diagram

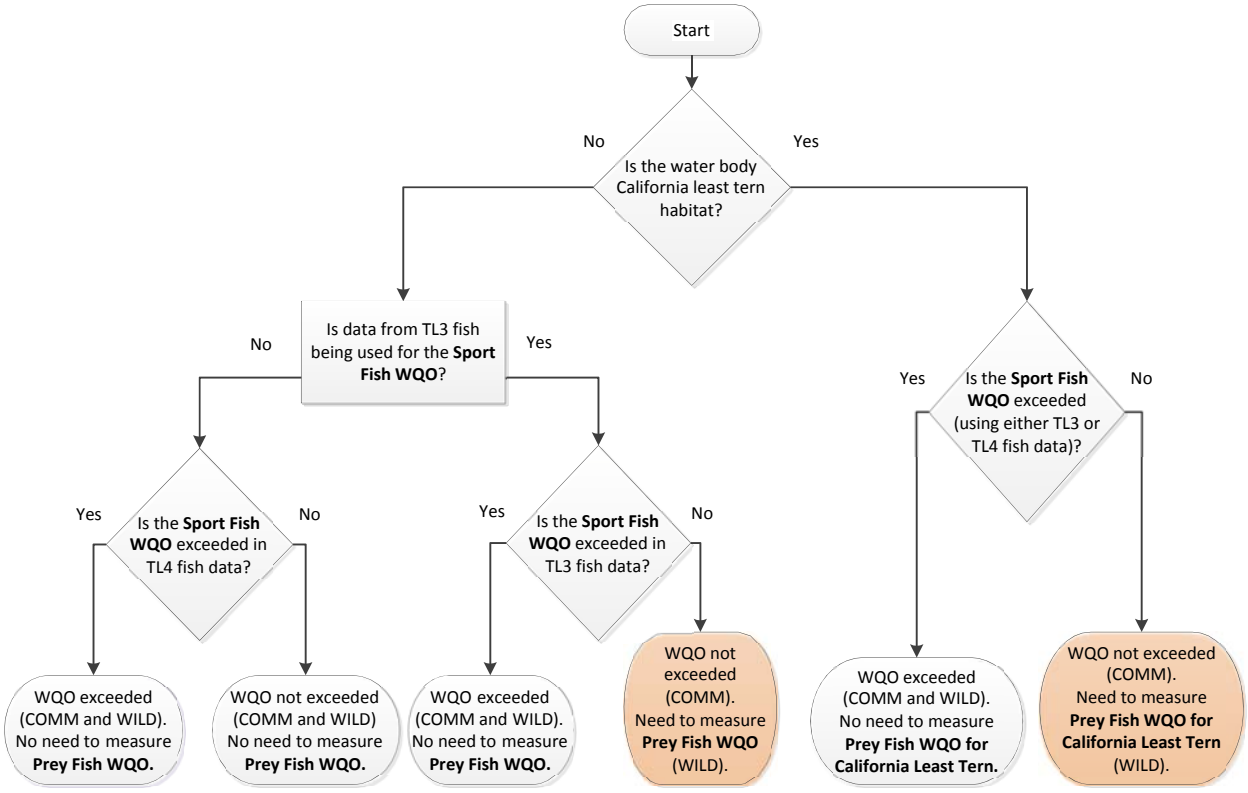

Figure B-1. Determining the need for application of mercury prey fish water quality objectives.

In some water bodies, the Sport Fish Water Quality Objective will not be sufficient to ensure wildlife beneficial uses are protected and one of the prey fish objectives needs to be measured (orange ovals, see also Chapter III.D.2.a.1). This decision depends on whether data from TROPHIC LEVEL 3 (TL3) or TROPHIC LEVEL 4 (TL4) fish are used and other factors as shown in the diagram. The wildlife-related beneficial uses are noted as WILD (Wildlife Habitat) in this diagram, but the applicable use may be Marine Habitat (MAR) or others. The Sport Fish Water Quality Objective protects beneficial use of Commercial and Sport Fishing (COMM) as well as Tribal Tradition and Culture (CUL) and wildlife beneficial uses. See Chapter III.D.2 for full details.

5. Attachment C. Fish Trophic Level Classifications

Table C-1 and Table C-2 show trophic level classifications for common species and sizes for comparison with the Sport Fish Water Quality Objective, the Tribal Subsistence Fishing Water Quality Objective, and the Subsistence Fishing Water Quality Objective. These tables do not include all possible species.

Table C-1. Freshwater trophic level classifications

Freshwater Fish Trophic Levels	
TROPHIC LEVEL 4 **Unless other size is noted, fish must be within the LEGAL SIZE LIMIT and 200 to 500 mm total length**	**TROPHIC LEVEL 3** **Unless other size is noted, fish must be within the LEGAL SIZE LIMIT and 150 to 500 mm total length**
Black Crappie	Black Bullhead
Brown Trout	Bluegill
Channel Catfish	Brook trout
Lake Trout	Brown Bullhead
Largemouth Bass	Chinook salmon*
Sacramento Pikeminnow	Common Carp
Smallmouth Bass	Crayfish (> 30 mm)
Spotted Bass	Kokanee
Striped Bass	Pumpkinseed
White Catfish	Rainbow Trout
White sturgeon*	Redear Sunfish
	Sacramento Sucker
	Tule Perch
*Acceptable if longer than 500 mm, as long as within the LEGAL SIZE LIMIT	

Table C-2. Marine and estuarine trophic level classifications

Marine/Estuarine Fish Trophic Levels	
TROPHIC LEVEL 4 **Unless size is noted, fish must be within the LEGAL SIZE LIMIT longer than 150 mm total length**	**TROPHIC LEVEL 3** **Unless size is noted, fish must be within the LEGAL SIZE LIMIT and longer than 150 mm total length**
Barred Sand Bass*	Black Perch
Gopher Rockfish*, and various other rockfish*, except Blue Rockfish	Blue Rockfish*
Kelp Bass*	Chub Mackerel
Leopard Shark	Opaleye
Spotted Sand Bass*	Pile Perch
Striped Bass	Rainbow Surfperch
Yellowfin Croaker*	Striped Mullet
	Shiner Surfperch
*Basses (Serranidae), Rockfish (Sebastidae), and Croaker (Sciaenidae) shall be within the LEGAL SIZE LIMIT and 150 to 500 mm total length for comparison with Sport Fish Water Quality Objective	

6. Attachment D. Waters Protected by the Mercury California Least Tern Prey Fish Water Quality Objective

Table B-1. Applicable waters for the California Least Tern Prey Fish Water Quality Objective

RB*	MA**	County	U.S. FWS Site Name	Applicable Inland Surfaces Waters, Enclosed Bays and Estuaries
2	A	Alameda	Alameda Naval Air Station	A water quality objective that is protective of California least tern has already been adopted for Lower San Francisco Bay
		Alameda	Alvarado Salt Ponds	
		Alameda	Oakland Airport	
		San Mateo	Bair Island	Bair Island Marsh
3	B	San Luis Obispo	Pismo Beach	Pismo Creek Estuary, Pismo Creek, Arroyo Grande Estuary, Arroyo Grande Creek, downstream (Oceano Lagoon, Meadow Creek, Pismo Marsh (Lake), Los Berros Creek), Big Pocket Lakes (Dune Lakes)
		San Luis Obispo	Oso Flaco Lake	Oso Flaco Lake, Oso Flaco Creek
3	C	Santa Barbara	Santa Maria River	Santa Maria Estuary, Santa Maria River (except Corralitos Canyon Creek, Sisquoc River, downstream), Orcutt Creek
3	D	Santa Barbara	San Antonio Creek	San Antonio Creek, San Antonio Creek Estuary
		Santa Barbara	Purisima Point (North, South)	None (only ocean waters)
		Santa Barbara	Santa Ynez River	Santa Ynez River Estuary, Santa Ynez River, downstream
4	E	Ventura	Santa Clara River	Santa Clara River Estuary, Santa Clara River Reach 1,
4	F	Ventura	Ormond Beach	Ormond Beach Wetlands
		Ventura	Mugu Lagoon	Calleguags Creek Reach 1 (also called Mugu Lagoon)
4	G	Los Angeles	Venice Beach	Ballona lagoon, Marina Del Rey (except Harbor),
		Los Angeles	Playa del Rey	Ballona Wetlands, Ballona Creek Estuary
4	H	Los Angeles	Terminal Island	Los Angeles/Long Beach Inner Harbor, Los Angeles/Long Beach Outer Harbor
		Los Angeles	San Gabriel River	Alamitos Bay: Los Cerritos Wetlands, San Gabriel Estuary, Los Cerritos Channel Estuary, Long Beach Marina
4	I	Los Angeles	Cerritos Lagoon	
		Los Angeles	Costa Del Sol	
8	J	Orange	Anaheim Bay	Anaheim Bay
		Orange	Surfside Beach	Anaheim Bay
8	K	Orange	Bolsa Chica (North, South)	Bolsa Bay, Bolsa Chica Ecological Reserve
8	L	Orange	Huntington Beach	Santa Ana River Salt Marsh, Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough
8	M	Orange	Upper Newport Bay	Upper Newport Bay

Table B-1. Applicable waters for the California Least Tern Prey Fish Water Quality Objective

RB*	MA**	County	U.S. FWS Site Name	Applicable Inland Surfaces Waters, Enclosed Bays and Estuaries
9	N	San Diego	San Mateo Creek	San Mateo Creek Mouth
		San Diego	Aliso Creek	Aliso Canyon (in San Onofre Creek Watershed. Not in Orange County)
		San Diego	Santa Margarita River	Santa Margarita Lagoon
9	O	San Diego	Buena Vista Lagoon	Buena Vista Creek
9	P	San Diego	Agua Hedionda Lagoon	Agua Hedionda Lagoon
9	Q	San Diego	Batiquitos Lagoon	Batiquitos Lagoon
9	R	San Diego	San Elijo Lagoon	San Elijo Lagoon
9	S	San Diego	San Dieguito Lagoon	San Dieguito Lagoon
		San Diego	Whispering Palms Encinitas	None (no longer suitable habitat)
9	T	San Diego	Los Penasquitos Lagoon	Los Penasquitos Lagoon
9	U	San Diego	FAA Island	Mission Bay
		San Diego	North Fiesta Island	Mission Bay
		San Diego	Stony Point	Mission Bay
		San Diego	South Sea World Drive	Mission Bay, San Diego River Estuary
		San Diego	Clover Leaf	Mission Bay, San Diego River Estuary
9	V	San Diego	Naval Training Center	San Diego Bay
		San Diego	San Diego Int. Airport	San Diego Bay
		San Diego	Chula Vista Wildlife Reserve	San Diego Bay
		San Diego	Sweetwater River	Sweetwater River, Hydrologic Unit Basin Number 9.21, San Diego Bay
		San Diego	North Island	San Diego Bay
		San Diego	Delta Beach	San Diego Bay
		San Diego	Coronado Cays	San Diego Bay
		San Diego	Saltworks	San Diego Bay
9	W	San Diego	Tijuana River Mouth	Tijuana River Estuary

* Regional Water Quality Control Board

**US FWS California least tern coastal management areas (US FWS 2006).

ATTACHMENT C

Attachment C

Proposed language for SWRCB Adoption Resolution – Guidance to Regional Water Boards regarding Adoption and Implementation of Proposed Beneficial Uses for Tribal & Subsistence Fishing and Implementation of Mercury Water Quality Objectives

Whereas…

x-5. The State Water Board recognizes that the Regional Water Boards and dischargers have developed substantial technical and analytical data about various priority toxic pollutants for certain water bodies in California since the initial adoption of the SIP in 2000. Much of this information has led to the development of TMDLs for priority toxic pollutants in various regions, such as the San Francisco Bay Mercury TMDL (2006); Calleguas Creek/Mugu Lagoon Mercury TMDL (2007); Guadalupe River Watershed Mercury TMDL (2008); Walker Creek Mercury TMDL (2008); Cache Creek Mercury TMDL (2004); Sacramento-San Joaquin Delta MethylMercury TMDL (2010); and Los Angeles-Long Beach Harbor Mercury TMDL (2011).

x-6. Much of the information and technical analyses developed about the sources and impacts of priority pollutants developed by Regional Water Boards and dischargers demonstrate that, in many impaired water bodies, municipal and industrial point sources regulated via NPDES permits issued by Regional Boards are an inconsequential, or *de minimis*, source of certain priority toxic pollutants. In the case of ongoing mercury loading to certain water bodies, the *de minimis* nature of these point source contributions can be traced to aggressive pre-treatment, pollution prevention, and active treatment technologies imposed over the past two decades. Indeed, municipal and industrial dischargers combined account for less than 1.4% of the ongoing mercury loading to San Francisco Bay. Planned NPDES loads to the Delta (based on current permit requirements) will represent less than 0.1% of the methylmercury load in 2030.

x-7. By comparison, open water, tributaries and existing wetlands are known to account for about 93.8% of ongoing mercury loading in the Delta, predominantly from legacy loads. In San Francisco Bay, over 75% of the continued loading of mercury is coming from the Central Valley watershed, natural bed erosion, and atmospheric deposition. In both instances, the Regional Boards have struggled to find effective means of controlling these “untethered” sources of most of the mercury continuing to be taken-up by fish and other biota in the waters.

In 2010, the Central Valley Regional Board took the unprecedented step of assigning responsibility for open water and tributary sources of mercury to those State of California and federal agencies responsible for managing the land and water from which these mercury loads are derived. In its 2010 Delta Methylmercury TMDL, the Central Valley Regional Board specifically found that transportation and deposition of mercury-contaminated sediment from water management activities contribute to the Delta fish mercury impairment.

Specifically, the Central Valley Regional Board determined that the State and Federal Water Projects affect the transportation of mercury and the production and transportation of methylmercury. Activities including water management and storage in and upstream of the Delta and Yolo Bypass, maintenance of and changes to salinity objectives, dredging and dredge materials disposal and reuse, and management of flood conveyance flows are subject to the open water methylmercury allocations established in the TMDL. Agencies responsible for these activities in the Delta and Yolo Bypass include, but are not limited to, the Department of Water Resources, State Lands Commission, Central Valley Flood Protection Board, U.S. Bureau of Reclamation, U.S. Army Corps of Engineers (USACE), and State Water Resources Control Board. The Regional Board also determined that the State of California owns and manages lands and waters of the state that contribute to methylmercury loads. As a result, the State Lands Commission and Department of Water Resources were also assigned responsibility for addressing these mercury contributions to the overall fish impairment.

Assigning state and federal agency responsibility for mercury loads coming from historic legacy sources (gold and mercury mining), state and federal lands, or major water projects over which these agencies have responsibility is reasonable, fair, and just. Without doing so, there is literally no hope of successfully abating mercury in fish from some California waters. What's more, holding these state and federal agencies responsible is consistent with existing laws, regulations and authorities of the State and Regional Water Boards. When considering application of the water quality objectives adopted [in this action] and implementing control strategies to achieve those objectives, the Regional Boards are directed to consider all available information regarding sources and contributions of mercury to a given water body and, where appropriate, assign responsibility for mercury and abatement control strategies (including any appropriate risk reduction and communication actions) to those State of California and federal agencies responsible for managing land and water from which these mercury contributions are derived.

[These provisions apply to our request for future guidance from the State Board to Regional Boards when adopting the beneficial uses and applying the water quality objectives.]

x-8. The State Board directs its staff, working with the Regional Water Boards and interested stakeholders, to develop guidance for the Regional Water Boards when formally designating waters in their respective regions for T-CUL, T-SUB and SUB beneficial uses that address, without limitation, the following topics:

- Prior to designating waters for T-CUL, T-SUB and SUB beneficial uses, or implementing water quality objectives for such designated waters, Regional Boards shall identify and evaluate all known or suspected sources of priority toxic pollutants. This analysis should consider traditional point sources, non-point sources, aerial deposition, open water, historical or "legacy" sources, and any other reasonably discernable sources of the priority toxic polluants.

- To the maximum extent possible, all relevant information developed for TMDLs, site specific objectives, use attainability analyses, or other regulatory actions shall be utilized by Regional Boards in designating waters for T-CUL, T-SUB and SUB beneficial uses, or implementing water quality objectives for such designated waters.

- When determining whether and to what extent to designate waters for T-CUL, T-SUB and SUB beneficial uses, or implementing water quality objectives for such designated waters, Regional Boards shall consider all available information relevant to ascertaining the geographic extent to which such waters are used for these beneficial uses.

- When determining site specific water quality objectives to protect T-CUL, T-SUB and SUB beneficial uses based on consumption of fish or aquatic-dependent wildlife, the Regional Boards should develop, through a publicly-noticed process, appropriate protocols for determining consumption patterns (*i.e.*, types of fish consumed, volumes of each fish consumed, frequency of consumption, etc.) relative to those waters (or sub-portions of waters) for which T-CUL, T-SUB and SUB beneficial uses have been designated.

- Regional Boards should convene working groups of key stakeholders (*e.g.*, Tribes, subsistence fishing community, regulated community, State of California, federal agencies that own or have responsibility for land or water projects that are a known or suspected source of priority toxic pollutants) to address adoption and implementation of water quality objectives for adopted uses. Considerations should include a full range of possible management and control measures, and their relative efficacy in achieving fish tissue targets.