

Appendix E

Comment Letters

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 21, 2008

Jim Ponton
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Ste. 1400
Oakland, CA 94612

Dear Mr. Ponton:

Thank you for the opportunity to comment on the draft Guadalupe River Watershed Mercury TMDL Staff Report and Proposed Basin Plan Amendment (BPA), dated February 2008. We appreciate your hard work to develop the methylmercury water quality fish tissue objectives and the mercury TMDLs. We have reviewed both the objectives and the TMDLs and are pleased with the thoroughness of the analyses. The numeric water quality objectives are developed to protect aquatic organisms and wildlife and are also protective of human health. The TMDLs and allocations are detailed and appropriate. We support adoption of the package.

We have reviewed the documents and provide our prioritized comments below:

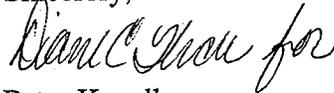
- 1) The BPA contains changes to the water quality objectives for mercury. Table 3-4A footnotes the new aquatic organism and wildlife objectives as protective of human health. We note the BPA does not reference the TMDL Staff Report, which contains a very thorough analysis supporting the statement in the footnote. If the BPA does not include a summary of the analysis, the BPA needs to reference the TMDL Staff Report, to support the assertion that the revised objectives are also protective of human health.
- 2) The BPA lists the waterbodies to which the revised water quality objectives and TMDLs apply. The BPA list includes waterbodies that are currently listed as impaired on California's CWA Section 303(d) list, and some waterbodies that are not currently included on the list. The Staff Report at pages 2-7 and 2-8 indicates that staff recommend listing the currently unlisted waters as impaired on the next 303(d) listing update. Please ensure that the Staff Report includes a specific record supporting the conclusion that the additional waters are water quality limited, and why it is important to adopt TMDLs for these segments at this time. Also, please clarify in the BPA which of the waterbodies are currently listed and which are not listed but are currently being identified as impaired. We request this information to be included within the package since these TMDLs may be submitted to EPA for approval prior to the State's next 303(d) list update. This information also clarifies to the general public the identification of impaired waterbodies and development of TMDLs for those waterbodies.

- 3) The BPA does not list the permit numbers to which the waste load allocations apply. Please include the permit numbers, or reference the Staff Report, and include the permit numbers in the Staff Report. If the permit numbers are contained in the TMDL Staff Report for the San Francisco Bay Mercury TMDL, please reference that report.
- 4) If any of the permits to which the implementation schedule applies are permits that must comply with Clean Water Act 301(b)(1)(C), we recommend the Regional Board ensure that the schedule is consistent with the provisions of the statewide Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits (adopted by State Board 4/15/08, not yet reviewed by Office of Administrative Law or U.S. EPA).
- 5) The BPA does not include a summary of the quantification of mercury and methylmercury sources, nor a summary of the linkage analyses between the sources, targets, loads and allocations. The BPA needs to contain a summary of this information, or the BPA needs to reference the TMDL Staff Report which contains this information.

Please note the position described in this letter is preliminary in nature and does not constitute a determination by EPA under Clean Water Act 303(c) or 303(d). Approval/disapproval decisions will be made by EPA following adoption of the water quality standards and the TMDLs, and submittal to EPA.

Thank you again for the opportunity to comment on the draft documents for the Guadalupe River Watershed mercury package. If you have any questions concerning our comments, please contact me at (415) 972-3448 or Diane Fleck at (415) 972-3480.

Sincerely,



Peter Kozelka
TMDL Coordinator
Water Division

April 21, 2008

Ms. Carrie Austin
San Francisco Bay
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Guadalupe River Watershed Mercury Total Maximum Daily Load Project Report and Proposed Basin Plan Amendment

Dear Ms. Austin:

The Santa Clara Valley Water District (District) appreciates the opportunity to provide comments concerning the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project Report (TMDL Project Report) and proposed Basin Plan Amendment. The District appreciates the difficult job and tremendous efforts of the Regional Water Quality Control Board (Regional Board) to develop and implement the TMDL. The District is generally in support of pursuing a planning effort of this magnitude, which is the culmination of a successful collaborative partnership between the District and the Regional Board.

This letter presents general comments on the Regional Board's TMDL Project Report and Basin Plan Amendment and transmits detailed comments in the attachment to this letter.

District/Regional Board Partnership Produced Results:

As you know, the District has demonstrated its willingness to partner with the Regional Board and to provide extensive resources to pursue a course that will ensure the TMDL is based on sound science, measurable goals, and timely implementation measures. The District has demonstrated its intent and commitment to addressing the mercury issue by voluntary early implementation of control measures that have removed nearly one thousand (1,000) kilograms of mercury from the watershed, reduced methyl mercury production by over ninety percent (90%) in Almaden Lake in 2006 and 2007, and in mid-2007 expanded the successful Almaden Lake pilot project to the Almaden and Guadalupe reservoirs. The collection of the data for the TMDL was conducted in an open collaborative process that allowed all interested parties to participate, using the Santa Clara Basin Watershed Management Initiative, in response to a request by the Regional Board. The partnership between the District and the Regional Board was solidified under a Memorandum of Understanding adopted in March 2003 (2003 MOU). We believe that successful implementation of the TMDL will require a continuation of the collaborative partnership between our agencies.

District's Concern with Implementation:

The District is concerned that the approach outlined in the proposed Basin Plan Amendment will not achieve successful implementation as the approach: 1) stresses studies and monitoring over "on-the-ground" action compelling the inefficient expenditure of scarce resources on further characterization of the problem rather than on implementation of solutions; 2) does not

incentivize a collaborative approach and; 3) priorities need to be established for the use of limited public resources towards addressing the water quality challenges.

1) 80% Studies, Only 20% Abatement Action

The District analysis of the TMDL Report and Basin Plan Amendment identified that over eighty percent (i.e., \$19.2M) of the \$24 million estimated total cost to the District required for will be directed toward monitoring, reporting, and "special studies" with only twenty percent (i.e., \$4.8M) directed toward actual abatement of mercury contamination. The District believes that the limited resources should be applied to the abatement first rather than conducting studies.

2) Collaborative Approach Needed for Successful Implementation

Taking a collaborative approach rather than the aggressive command and control approach of the current proposal would be a more effective and efficient. Under a collaborative approach, we believe the District is well positioned to assist with the implementation and may act as the lead for implementation of the TMDL in the Guadalupe River Watershed. Much of the interception and extraction of mercury loading to the Bay, as well as much of the monitoring of fish and water quality, may be integrated into existing District projects and programs. The District believes that a revised 2003 MOU would showcase and emphasize the benefits of a collaborative approach to addressing water resource needs. These are the kinds of incentives needed to encourage removal and restoration activities, as well as for the development of other TMDLs. Unfortunately, only partial implementation of the 2003 MOU creates a challenge to negotiating a revised MOU for implementation.

The 2003 MOU between the District and the Regional Board included four key commitments: 1) development of studies to support the TMDL, 2) development of a Guadalupe River Watershed TMDL that would satisfy the watershed contribution to the San Francisco Bay TMDL, 3) providing the District credit for early implementation actions, and 4) reduce project-specific mercury monitoring activities from individual project permits. The first commitment was met by the District to collaboratively develop work products that would ensure the development of a TMDL based on sound science. The second commitment was met by the Regional Board and included participation in the collaborative effort and efficiently ensuring that one implementation plan would satisfy both the San Francisco Bay and Guadalupe River Watershed Mercury TMDLs. However, the Regional Board has not yet met the third commitment to provide credits to the District for its early implementation actions, or the fourth commitment to reduce duplicative project-specific mercury monitoring activities in permits issued to the District.

The District is willing to discuss the continuation of its partnership with the Regional Board, and the possibility of revising the March 2003 MOU. A revised MOU would include commitments by the District to focused on implementation of the TMDL, and incorporate credits specified in the 2003 MOU for early implementation actions taken by the District that would be accounted for in load allocations, implementation plans, and compliance schedules for the TMDL; the revised MOU would also include commitments by the Regional Board to address duplicative project-specific mercury monitoring activities in permits issued to the District.

Ms. Carrie Austin
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3) *Priorities Needed for Limited Public Resources:*

The District is also concerned that the increased burden to local agencies resulting from the proposed TMDL and proposed changes to the Urban Runoff Municipal Permit will result in a failure of both programs due to lack of funding. The recent proposed changes to the Municipal Permit for Stormwater Discharges represent estimated increases of expenditures by as much as thirty percent, at the same time that the TMDL will create the need for extensive new expenditures. The District seeks to have the Regional Board prioritize its water quality needs in a manner which allows the efficient use of available resources.

If you have any questions or would like to meet and discuss the District's comments and concerns please contact me at (408) 264-2607 extension 2634 or Dave Drury at extension 2721

Sincerely,



Beau Goldie
Deputy Operating Officer
Watershed Operations

cc: Mr. Tom Mumley
Assistant Executive Officer
San Francisco Bay
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

J. Fiedler, D. Cauble, D. Chesterman, K. Whitman, R. Yep, A. Gurevich, D. Drury,
S. Dharasker

Attachment 1

Comment 1: The Proposed Basin Plan Amendment is Too Detailed and Inflexible

The proposed Basin Plan Amendment contains far too much detail than that needed for the Basin Plan Amendment process. As written, there is little flexibility for Regional Board staff and the responsible parties to be creative and pursue a more productive course of action, since any change would then need to be made through the lengthy Basin Plan Amendment process. A more prudent approach is to simplify the proposed Basin Plan Amendment to adopt the new Water Quality Objectives and specify that Regional Board staff shall report back to the Regional Board periodically (say, every five years) on progress implementing the plan as described in the TMDL Project Report, including amendments to the plan authorized by the Executive Officer. At a minimum, the proposed Basin Plan Amendment should not specify dates, but should use "from the date of" final approval/adoption, and should use "or similar studies" should those contemplated in the far term be determined unnecessary.

Comment 2: Mercury Sources in Alamitos Creek are Mischaracterized in the Proposed Basin Plan Amendment and TMDL Project Report

In the TMDL Project Report and proposed Basin Plan Amendment all of the mercury sources in Alamitos Creek downstream of Almaden Reservoir are characterized as "depositional" and it is proposed to delay addressing these sources for as long as twenty years. The proposed Basin Plan Amendment and Project Report contain an incorrect assumption that all deposits of mine waste in this area continue to accumulate mine waste. The District, in partnership with the Regional Board, conducted a Synoptic Survey in 2003 (Tetra Tech, 2003) that provided a preliminary identification of sites with deposits of eroding mine wastes. Most of these sites are creek banks that are being undercut and/or are actively eroding, adding to the load of mercury transported downstream. Such sites would not be negatively affected by upstream loads and should not be allowed to freely discharge mercury for up to twenty years. The sites identified in the Synoptic Survey should be evaluated and verified in the first five years, and those that are eroding should be addressed by the end of the first ten years. Since 2003, the District has verified eleven of the sites identified in the Synoptic Survey (under District ownership and/or control) that would benefit from immediate action to remove the mine waste deposits. Six of these have already been completed (resulting in the removal of 287 kg of mercury), and the other five are scheduled for completion by 2011.

The only significant depositional areas of mine wastes are the mouth of Alamitos Creek as it enters Almaden Lake, the mouth of Guadalupe Creek at its confluence with the downstream end of Almaden Lake, and above the Los Alamitos Drop Structure at the upper end of Guadalupe River. Other areas where deposition occurs (primarily due to mercury-containing fines that pass the Drop Structure) are benches and depositional areas of Guadalupe River, mostly between Montague Expressway and the SPRR crossing. The District agrees that these areas should be addressed after all upstream sources have been controlled. However, under a collaborative approach, sediment removal in these latter areas could be integrated into the ongoing District's long-term stream maintenance program to obtain faster results.

Comment 3: Percolation Ponds are Mischaracterized in the Proposed TMDL

The proposed Basin Plan Amendment and Project Report list percolation ponds under "Depositional Areas" and intimate that discharges of mercury occurs from the operation and maintenance of these ponds in the form of "sediment-laden" mercury or from "erosive flows" caused by discharges from the ponds. The operation and maintenance of percolation ponds does not result in either of these discharges, nor are the ponds depositional. Operation of the ponds is achieved by in-stream diversions that fill the ponds under controlled conditions when creek flows are low and not transporting sediment. The water is never immediately discharged back to the creek but allowed to percolate into the ground. Maintenance activities consist of periodic scraping of the bottom of the ponds to remove algal mats that inhibit percolation. Occasionally, discharges to the creek occur during intensive rain events that overflow the ponds, but these are neither "sediment-laden" nor "erosive" and are small volumes already permitted.

Comment 4: Reservoir Implementation Requirements are Mis-Timed and Special Studies are Prescriptive

The proposed Basin Plan Amendment needs to be revised to adjust the timing of implementation of activities that will be required in the TMDL. If elimination of sources upstream is not completed before downstream sources are addressed, then the downstream efforts will be negated by additional contamination. We believe that once background conditions have been restored, the reservoirs will not need treatment or need only minimal treatment to meet applicable requirements.

With respect to the reservoirs, the proposed Basin Plan Amendment would unfairly require the District to develop and implement treatment alternatives in its reservoirs long before the sources of mercury (owned by others than the District) have been controlled or ameliorated. The mercury in the sediment of Almaden and Guadalupe reservoirs is the result of uncontrolled erosion of mining waste that the regulatory agencies have not been successful in having the responsible parties reduce to background concentrations of mercury in the intervening period from adoption of the Porter-Cologne Act to the present. The Regional Board now proposes in the subject documents to allow these uncontrolled discharges to continue up to an additional ten years while exonerating responsibility for the impact on receiving waters for both past and future discharges. Further, the Regional Board proposes in the subject documents to place full responsibility onto the District for the treatment and amelioration of the negative effects of these discharges on water quality. The District contends that any discharger of mercury must be held responsible for negative effects on receiving waters, rather than transfer the responsibility to the downstream owner. If treatment is required, the dischargers must participate in a commensurate share of the costs until the discharge is stopped and its effects ameliorated. The District is the injured party, not the responsible party. Once background conditions have been established, if additional treatment is required due to atmospheric and natural background sources, then the appropriate responsible party will assume responsibility for abatement. Therefore, the time frame for requiring the District to implement treatment control options should not begin until background conditions have been restored.

The requirements in the proposed basin Plan Amendment for the District to conduct feasibility studies and special studies are prescriptive. Such studies should be allowable as a means of compliance at the option of the District in the event that the District determines that such studies are necessary. Such condition of necessity may arise if the District is unable to achieve the project specific targets to meet the Water Quality Objectives in the Basin Plan following the establishment of background loading conditions of mercury to the deep impoundments.

Comment 5: In the TMDL, an Inappropriate Allocation for Reservoirs is Employed, and the Regional Board has Failed to Establish Assimilative Capacity

The proposed Basin Plan Amendment and Project Report include a seasonal maximum water column concentration of 1.5 ng/l of methyl mercury in the hypolimnion of the deep impoundments. This is an inappropriate allocation for several reasons, the most important being that it does not relate to the mass of methyl mercury that is seasonally produced and potentially available for bioaccumulation. Guadalupe Reservoir is approximately 30 meters deep (maximum), with hypolimnion thickness as much as 12 meters, and by volume is twice as large as Almaden Reservoir. The latter is approximately 20 meters deep (maximum) with hypolimnion thickness of as much as six meters. This means that at a concentration of 1.5 ng/l, the mass of methyl mercury in Almaden Reservoir is one quarter the mass in Guadalupe Reservoir. In other words, the allocation is inconsistent among the reservoirs, and is four times more stringent for Almaden than Guadalupe, even though the fish have about the same average concentration of mercury for age-1 Large Mouth Bass (LMB), and Almaden adult LMB have about two-thirds the concentration of mercury as the adult LMB in Guadalupe. A more appropriate allocation is one that is related to the assimilative capacity of each reservoir, a necessary component of a TMDL that the Regional Board has omitted from this TMDL. The Regional Board has failed to demonstrate that the elaborate calculations in the Project Report using limited data to estimate a relationship between water column methyl mercury concentrations and fish tissue concentrations is more valid than estimating assimilative capacity. The proposed Basin Plan Amendment also shows that the Regional Board intends to require the District to conduct studies related to assimilative capacity, even though the Regional Board has not estimated, nor established a reasonable approach as to how to estimate, the assimilative capacity of the reservoirs. This demonstrates the Regional Board is aware of, and acknowledges the importance of, assimilative capacity, yet fails to even attempt to address it in the Project Report and the proposed Basin Plan Amendment. Perhaps the more appropriate approach is to work collaboratively with the District and resource agencies to develop models or metrics for the reservoirs that would be appropriate for evaluating assimilative capacity (or other technique) and identification of those factors that may influence its natural variation.

Comment 6: The Regional Board Does Not Incorporate Incentives for Implementation, and Emphasizes Monitoring Over Source Control

In the proposed Basin Plan Amendment, up to ten years is provided for responsible parties to address mining waste discharges, and up to twenty years to address ongoing discharges of mercury from creek banks. Yet, extensive monitoring will be required immediately and most intensively for the first five years, followed by reduced monitoring substituted with "special studies" that are likely to be as costly, if not more costly than the monitoring activities they replace. This backwards approach applies limited resources toward further characterizing what is already known without providing any improvement to the beneficial uses. A more proactive approach would be to provide some flexibility and incentives to responsible parties to conduct implementation activities instead of monitoring and special studies. Another streamlining approach would be: instead of requiring "site investigations" (especially for sites already identified on Alamitos Creek), these should be optional if the responsible parties wish to go straight to construction design.

Since the stated goal is to reduce the load of mercury to the bay and to the reservoirs, the implementation of the actions to do so should be emphasized and accomplished. It is *after* actions have been taken that monitoring should be conducted to determine if there is more to be done. The approach in the proposed Basin Plan Amendment will only tell us what we already

know: that there are sources of mercury that need to be controlled. The more appropriate approach is to control the sources and then monitor to determine if the goals are achieved.

In plain language, there are portions of the watershed that are heavily contaminated with mercury as a result of mining activities. Efforts should be focused on the removal or seclusion of mine wastes to the extent practical, followed by ongoing management activities to remove residual mine wastes as they accumulate in convenient locations, and then followed by treatment controls for deep impoundments as needed.

Comment 7: In the Proposed Basin Plan Amendment and TMDL Report the Regional Board Proposes Fish Sampling that is Potentially Harmful to Endangered and Protected Species

The District holds permits from the relevant agencies to conduct fish monitoring and sampling in the Guadalupe River Watershed below the reservoirs. These permits prohibit sampling activities during the months of October through April to protect salmonid species such as steelhead that are listed as Threatened under the Federal Endangered Species Act. The permissible sampling period of May through September is intended to avoid the take of any adult salmonid (either Chinook salmon or steelhead), whether intentionally or incidentally. The fish sampling described in the proposed Basin Plan Amendment and TMDL Report would have the Regional Board require the responsible parties to sample fish prior to the breeding season of the belted kingfisher every year for five years, and also during the breeding season at least twice during that five year period. The breeding season for the belted kingfisher begins in March. The District's permits demonstrate the extent to which fish sampling is permissible by the relevant agencies, and neither of these proposed sampling requirements would be allowed. Further, under the existing permits, allowable capture methods are not sufficiently fish specific to accomplish the monitoring goals by avoiding take of listed species outside of the allowable seasonal sampling period. The Regional Board cannot order the responsible parties to do something that is contrary to existing laws and regulations, and it is an untenable situation for the responsible parties to risk violation of one agency's regulations in attempting to comply with an order from another agency. Therefore, the District suggests that the agencies work together collaboratively to develop a fish sampling program that will allow the responsible parties to avoid this double jeopardy situation.

Comment 8: Duplicate Reporting is to be Required in the Proposed Basin Plan Amendment and TMDL Report

The proposed Basin Plan Amendment indicates the Regional Board will require numerous reports from the responsible parties. In many cases, these reports are duplicative of reporting that is already being done. For example, the District already reports to the Regional Board its mercury removal projects throughout the watershed through its existing Stream Maintenance Permit and its project-specific permits. The information for the "special studies" is already largely available in existing reports and other reports and work products being prepared for the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE). The FAHCE is a consortium of state and federal agencies, local municipalities, and interested parties that are working toward a common goal of providing restored and improved water resources throughout the watershed and basin. The Regional Board has been at arm's-length from this collaborative, yet if it were active as a effective collaborator, many of the issues of this TMDL could be addressed more comprehensively.

The District believes that a more appropriate approach is to provide flexibility in the Basin Plan Amendment to allow existing reporting mechanisms to suffice. This will conserve resources that are better spent taking action than preparing duplicative reports.

Comment 9: The Beneficial Uses Supported by the Reservoirs are not Fully Characterized nor Protected in the Proposed Basin Plan Amendment and TMDL Report

In the proposed Basin Plan Amendment and TMDL Report several beneficial uses of the reservoirs are characterized as “impaired by mercury” but the reports fail to include adequate descriptions of the beneficial uses that are supported by the reservoirs. In addition to providing municipal water supply and prevention of subsidence of the groundwater basin, the reservoirs support cold water fishery habitat and rare and endangered species. Without the reservoirs, there would be no cold water storage and the creeks would run dry each summer so there would be no cold water habitat; there would be no deep water habitat for the osprey or other diving birds. The operation of the reservoirs to create, support and protect all of the beneficial uses requires a careful balance. The augmented flow condition downstream of the reservoirs potentially supports a cold water fishery (COLD) and habitat for rare and endangered species (RARE) for which a wider array of beneficial uses are then available (e.g. REC, MUN, etc.) overall in the watershed. In general, operations to support the beneficial uses conflict with the objectives in the proposed Basin Plan Amendment; that is, to support the habitat needs requires operation of the reservoirs that may exacerbate the production of methyl mercury (such as retaining storage as long as possible to control temperature of releases). The proposed Basin Plan Amendment does not place the water quality issue into context with the environmental setting, nor does it even attempt to strike a balance with the various competing and conflicting objectives of the resource agencies. This places the District in an untenable situation, potentially forcing it to violate one agency’s laws and regulations in order to comply with another’s. The Regional Board needs to better coordinate with the other federal and state regulatory and trustee agencies to incorporate its concerns into the existing resource protection activities.

Comment 10: Inclusion of “Reference” Reservoirs and Lake in the Proposed Basin Plan Amendment and TMDL Report is Flawed

The lake and reservoirs that are the subjects of the proposed Basin Plan Amendment and the TMDL Project Report are unique from one another in many ways. It is impossible to collect data at the level of resolution needed for the purposes of the TMDL Project Report and the proposed Basin Plan Amendment. The level of resolution that we can measure in the reservoirs won’t allow meaningful comparisons between reservoirs. The TMDL Project Report also indicates the intention of the Regional Board to require the responsible parties to conduct fish tissue monitoring in Lake Elsmar, Lexington Reservoir and Vasona Lake. (Note: Lake Elsmar is privately-owned by a corporation not identified as a responsible party in the proposed Basin Plan Amendment. It is unlikely that the Regional Board can compel the responsible parties to collect samples from this lake. Also, despite its name Vasona is a reservoir owned and operated by the District. It bears little resemblance to any of the water bodies that are the subjects of the TMDL). Whatever data would be produced from such sampling is more likely to be confusing than enlightening, and further dilutes available resources away from addressing the problem: controlling the sources of mercury. Once background concentrations and conditions have been restored, the need for such science experiments can be fully evaluated. The TMDL should be limited to those water bodies that have been contaminated by mine wastes. There is no evidence that any part of the Los Gatos Creek watershed has been

affected by mercury mine wastes. The geology of the Los Gatos Creek watershed is not naturally enriched with mercury, and is not suitable as a "reference" in the context of the proposed TMDL Basin Plan Amendment.

Comment 11: The Proposed Basin Plan Amendment and TMDL Project Report Are Not Consistent with or Aligned with Other Regional Board Regulations

Due to the specific and detailed nature of the proposed Basin Plan Amendment (see our Comment 1), it is no longer in alignment with the Municipal Regional Permit for Stormwater Discharges which was remanded to staff by the Regional Board in March 2008. The proposed Basin Plan Amendment also includes several sections where it is stated that the Regional Board will use specific authorities to compel responsible parties to take actions, even though in many cases the responsible parties are already regulated under existing permits issued by the Regional Board and these permits already cover those actions.

County of Santa Clara

Environmental Resources Agency
Parks and Recreation Department

298 Garden Hill Drive
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FAX COVER SHEET

Total number of pages, including cover: 12

Date: April 21, 2008

Name: Ms. Carrie Austin

Fax: 510-622-2460

Office: San Francisco Bay Regional Water Quality Control Board Telephone: _____

FROM: County of Santa Clara Parks and Recreation Department

NAME: Kristi Barron
Executive Administrative Assistant
Lisa Killough's Office

Phone 408-355-2244
Fax: 408-358-2373
Email: Kristi.barron@prk.sccgov.org

Message: Please find attached, a letter for Ms. Carrie Austin Re: Guadalupe River Watershed Mercury TMDL Staff Report.

A hard copy will be sent today certified mail.

If you should have any questions, please contact me at 408/ 355-2244.

Thank you,
Kristi Barron

Please call me if you have any questions

Thank you,



Board of Supervisors: Donald F. Gage, Blanca Alvarado, Peter McHugh, Ken Yeager, Liz Kniss
County Executive: Peter Kutras, Jr.

County of Santa Clara

Parks and Recreation Department

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April 21, 2008

Sent by Fax and U.S. Mail

Ms. Carrie Austin
 San Francisco Bay Regional Water Quality Control Board
 1515 Clay Street, Suite 1400
 Oakland, CA 94612
 Fax: (510) 622-2460

Subject: Comments on *Guadalupe River Watershed Mercury TMDL Staff Report, February 2008* and *Proposed Basin Plan Amendment, February 2008*

Dear Ms. Austin:

The County of Santa Clara, Parks and Recreation Department, offers the enclosed comments on the *Guadalupe River Watershed Mercury TMDL Staff Report*, and alternative language for the *February 2008* and *Proposed Basin Plan Amendment, February 2008*.

Over the past two decades, the County has undertaken remediation efforts directed to the elimination or control of mercury mining waste at multiple locations within the Almaden Quicksilver County Park at great public expense, and with the firm belief that the expenditure is warranted by the benefit to public health and affected aquatic ecosystems. With the same objectives in mind, the County proffers these comments, including a technical evaluation by our consultant, URS, as noted in Attachment A and proposed changes for the Basin Plan Amendment set forth in Attachment B.

The County has been actively monitoring the research conducted by the San Francisco Bay and Central Valley Regional Water Quality Control Boards (Regional Boards) with respect to setting mercury total maximum daily load (TMDL) standards for many tributary water bodies of the San Francisco Bay Estuary. Of central concern in this process has been the lack of a technical understanding of mercury, methylation, and bioaccumulation. To develop cost effective mercury management programs for such a diverse and complex natural system as the Bay and its tributaries, we strongly urge the establishment of a consistent regional program based on supported scientific evidence and achievable schedules.

Concern: Data Lacking to Support Correlation between Sediment Mercury and Bioaccumulation

While the staff report and proposed Guadalupe River Watershed Basin Plan Amendment (BPA) contain a substantial collection and analyses of soil, sediment, surface water and fish tissue



sampling data throughout the Bay Area, there continues to be a dearth of technical understanding regarding effective mercury and methylmercury management actions. This is an overarching concern of the County. In particular, the proposed BPA still lacks a technical justification for its central management approach, which is premised on the notion that a reduction in the concentrations of mercury in soil and sediment will result in a reduction in the levels of methylmercury in fish tissue (see Staff Report pp 7-14). Without such a data connection, there is no basis to conclude that reduction of mercury in sediment under the proposed TMDL and BPA would reduce mercury in fish tissue concentrations.

Concern: Proposed Deadlines for Action are not Achievable

Of secondary, but still significant, concern is the proposed plan's deadlines for action. The County has experience in this area as it has already completed or committed to performing considerable clean-up work in the park at substantial expense through two major efforts: the first through agreement with the State Department of Toxic Substance Control (DTSC), and the second through a Natural Resource Damages (NRD) agreement with the U.S. Fish and Wildlife Service and other agencies. The DTSC authorized work has been completed and resulted in the removal of five major deposits of mercury contaminated areas, known as calcines. Planning for the NRD work is underway and will result in the removal of the last significant areas of calcines in the park. From studying and implementing these remediation efforts over the past two decades, the County is familiar with the time required for the planning and execution of the proposed activities, including the impact of competitive selection requirements on work schedules. The time frames proposed under the Guadalupe TMDL for preparation of plans and implementation actions are simply unrealistic given the magnitude of effort required and our experience for similar work.

Recommendation: Consistent Approach to Regional Problem

The County's objective in raising these concerns is not to push implementation into the future but to offer focused recommendations that address the principal objectives in a timely fashion.

The County is concerned about the lack of scientific evidence to support a numeric limit for naturally occurring sediment mercury, but we acknowledge that the State Water Resources Board may opt for this standard as part of a multi-prong approach to reducing mercury loading into the bay. In evaluating all of the potential solutions for addressing the loading issue, we advocate that the State adopt a regionally consistent approach for the TMDLs being established for the Bay. Specifically, the County recommends that the State take a similar approach for the Guadalupe BPA as the approach proposed for the Delta Estuary BPA.

The County has analyzed the proposed Delta BPA because the Delta Estuary and Guadalupe River watersheds have similar contamination issues. While the loading sources, and techniques and standards to address the problem areas may differ between the two BPAs, the Delta BPA proposes a couple of approaches which should be included in the Guadalupe BPA for consistency sake.

Recommendation: Phased Approach

In particular, the proposed Delta Estuary BPA acknowledges that a phased approach is needed to identify and remediate the main culprits for contamination and bioaccumulation. This approach is further supported by the U.S. Environmental Protection Agency (USEPA). According to the USEPA's 1991 document, "Guidance for Water Quality-Based Decisions: The TMDL Process" (EPA 440/4-91-001), "...if there are not adequate data and predictive tools to characterize and analyze the pollution problem with a known level of uncertainty, a phased approach may be necessary." Similar to the Delta, the Guadalupe River Watershed is quite complex and although much analysis has already been conducted, the County recommends additional analyses be done to identify the problem areas and determine the most effective methods for remediation.

The proposed phased approach would allow the County to: a) conduct field investigations of mercury in soil and sediment within the park, b) integrate this research with other studies of the factors that may contribute to the methylation and bioaccumulation of mercury in fish, and c) propose focused efforts to reduce mercury loading in the Guadalupe watershed. Ongoing monitoring of efficacy of actions taken to reduce loading will provide for an appropriate adaptive management program for controlling mercury containing soils and naturally occurring mercury sediments within the park.

Recommendation: Flexibility for Adjusting Sediment Mercury Limits in Mineralized Areas

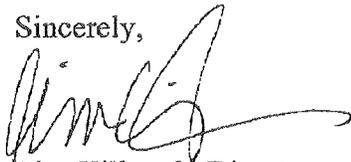
Almaden Quicksilver County Park is located in an area that has a high concentration of naturally occurring sediment mercury, as well as the rare serpentine habitat. As noted in the attached URS report, it is not reasonable to set the same sediment mercury standards for mineralized (deposits containing naturally occurring sediment mercury) and non-mineralized areas. Indeed, those differences between mineralized versus non-mineralized areas represent the difficulty inherent in the "one size fits all" 0.1 ppm sediment approach proposed in the Guadalupe BSA. One size does not fit all. The proposed 0.1 ppm erodible soil standard could require elimination or armoring of large areas of natural soils within the park, at great cost in monetary terms, as well as substantial ecological damage¹. The Delta BPA acknowledges the differences between mineralized and non-mineralized areas and proposes to allow a higher concentration of sediment mercury in mineralized areas than non-mineralized areas. The County recommends a similar approach, which would allow further study to determine the appropriate limit for sediment mercury in the park.

To address both recommendations noted above within an achievable, but accelerated time frame, the County offers specific revisions to the Guadalupe BPA, as noted in Attachment B. These proposed revisions include actions which would evaluate the priority of source areas consistent with an adaptive management approach, adjusting requirements as continued monitoring documents the efficacy of any given action. Incorporation of a phased approach into the BPA would allow the Board to establish site specific actions appropriate for the County's mineralized areas.

¹ The rare serpentine soils and related ecology, found at many locations within the County including Almaden Quicksilver County Park, provide critical habitat for such endangered species as the Bay Checkerspot Butterfly. These areas are likely to be disturbed, if not eliminated, by steps required under the proposed Guadalupe TMDL.

To reiterate, the County supports the need to address mercury contamination affecting the Guadalupe River watershed. In the same spirit, we offer these comments with the sincere desire of attaining an effective and consistent regional approach that will ultimately benefit the watershed and San Francisco Bay.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa Killough', with a long horizontal flourish extending to the right.

Lisa Killough, Director
Santa Clara County Parks and Recreation Department

c: Gerald F. George, Pillsbury Winthrop Shaw Pittman
Katherine Harasz, Deputy County Counsel
Sylvia Gallegos, Deputy County Executive



Attachment A
Comments on Staff Report and Basin Plan Amendment
April 18, 2008

As requested by the Santa Clara County Parks and Recreation Department, URS has reviewed the California Regional Water Quality Control Board San Francisco Bay Region's "Guadalupe River Watershed Mercury TMDL Staff Report, February 2008" and "Proposed Basin Plan Amendment, February 2008". We have the following comments.

Fish Tissue Objectives

1. The proposed fish tissue objectives appear to be reasonable, as they are based on a lowest observable adverse affect level (LOAEL) from a three generation laboratory toxicity study that measured reproductive effects of mercury in the diet of mallards. Clearly, the accuracy and utility of the objectives would be improved if toxicology information were available from species of particular concern in the Guadalupe Watershed. However, lacking such data, it appears the objectives are based on the best available science at the time of the analysis.
2. The only uncertainty factor applied to the LOAEL was a LOAEL-to- NOAEL uncertainty factor of 3, to estimate the no observable adverse effect level (NOAEL). In the calculations, it was conservatively assumed that piscivorous birds would obtain all prey from the areas of concern. While this is a reasonable assumption for some species of birds especially during the breeding season, area use factors are often incorporated into this type of analysis to account for estimated proportions of prey obtained off-site from "cleaner" areas, diluting the average daily dose. However, in this case "background" levels of mercury in fish in adjacent water bodies are approximately equal to or even exceeding the objective; therefore incorporation of area use factors would not make a significant difference in the calculation of the objective.
3. It should be noted these objectives were developed based on risk to wildlife and do not take into account whether those objectives are feasible to achieve in mineralized areas such as Guadalupe Watershed. Such an analysis may be beyond the scope of the TMDL process but it certainly ought to be a consideration under a Use Attainability Analysis, which would be conducted when more information is available on control measure cost and effectiveness. The CVRWQCB found that Sulphur Creek was unable to support uses that rely on fish consumption due, in part, to the presence of mercury mines and local geothermal springs containing mercury (See "Amendment To Water Quality Control Plan for the Sacramento and San Joaquin River Basins To Determine Certain Beneficial Uses are Not Applicable in and Establishing Water Quality Objectives for Sulphur Creek" Final Staff Report March 2007, CVRWQCB). We acknowledge that habitat, biological and geological conditions in the Guadalupe Watershed are different than those in Sulphur Creek, and the analysis is not directly transferable, but that situation does illustrate the need to incorporate significant environmental differences into mercury management plans addressing geographically and ecologically diverse areas.
4. There are inconsistencies in the proposed fish tissue objectives as described in the two documents. In the Proposed Basin Plan Amendment (BPA-4, Table 3-4A), and in Section 6 of the Staff Report, the fish tissue numeric objectives listed include no mention of trophic level or species. This is inconsistent with other sections of the Staff Report (pages 5-3, 5-8, 7-20), which propose fish tissue objectives for trophic level 3 fish only. The USFWS report cited as the source of the objectives also identifies the numeric objectives of 0.05 mg/kg wet weight (5 - 15 cm fish length) and 0.10 mg/kg wet weight (15 -35 cm fish length) for trophic level 3 fish only. The USFWS report proposed an objective of 0.20 mg/kg wet weight (15 -35 cm fish length) for trophic level 4 fish. Application of the objective of 0.10 mg/kg wet weight to trophic level 4 fish would be unnecessarily conservative.

Linkage between Sediment Loads and Load Allocations and Fish Tissue Objectives

5. The linkage between fish tissue concentration and sediment concentrations as described in the Staff Report is weak, and there does not appear to be a scientific basis for the identification of a TMDL of 0.1 mg/kg mercury in suspended sediments in waters upstream of reservoirs and lakes. There was no attempt to quantitatively link fish tissue concentrations to sediment concentrations, as was done for bioaccumulation factors (BAFs) for fish tissue and water concentrations in Section 7.4. It is not clear why a similar approach was not used to develop biota-sediment accumulation factors (BSAFs) to quantitatively link sediment concentrations to fish tissue concentrations. Even better would be development of a regression equation to predict fish tissue concentrations based on sediment concentrations using historical data. While there may not be enough data to identify a strong correlation, the report does not discuss any attempt to identify a quantitative link.

Sediment Loads and Load Allocations Not Appropriate for Mineralized Areas

6. It is not reasonable to set a load and load allocations for a mineralized area equal to the concentration found in an area that does not have similar geology (deposits containing cinnabar). In the "Amendments to The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins For The Control of Mercury in Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch Staff Report October 2005" (2005 Report) the Central Valley Regional Water Quality Control Board provided different objectives for mineralized and non-mineralized areas (Page 31). The 2005 Report states:

"These concentrations are 0.2 mg/kg, dry weight in non-mineralized areas (Churchill and Clinkenbeard, 2004) and 3 mg/kg in mineralized zones (Percy and Petersen, 1990), applied to the average of mercury concentrations in samples of fine-grained soil (<63 micron) entering Sulphur Creek. The goal for mineralized zones is intended as a guide for cleanup efforts and may be adjusted as more information is gathered during feasibility studies at individual mine sites."

Such site-specific goals for sediment in mineralized areas are mentioned in the Staff report on Page 8-4 under "Potential Allocations Based on Conditions Prior to Mining". There was no justification for not selecting this approach provided in the report. In the BPA such an approach is described under special studies (Section 9.10) but not incorporated into the Tables of numeric TMDL and Load and wasteload allocation in Sections 3 and 7. We suggest modification to the BPA Tables (See Attachment B) to allow such an approach to be used to modify the objectives, TMDLs and allocations.

Implementing such stringent sediment standards could essentially mean armoring any potentially erosive areas (which is any exposed slope) within the Park with hard surface or complete removal of all park soils and replacement and stabilization with imported fill. Since neither of these solutions are economically achievable or practical (or desired since they would potentially damage the rare serpentine ecology in the Park) the standard would never be met. In fact, such armoring projects could result in decreased infiltration of rainfall, increased runoff, shorter runoff transport times, increased runoff flow velocity and increased erosion of stream banks and bed which could mobilize previously buried and isolated calcine deposits.

Different Sediment Objectives for suspended sediments upstream and downstream of reservoirs

7. It not clear why the allocation for mercury concentrations on suspended sediments upstream of reservoirs and lakes (0.1 mg/kg from Table 7A) should be different from the allocation for mercury concentrations on suspended sediments downstream of reservoirs (0.2 mg/kg). The justification provided in the Report is that the downstream target is based on the Bay Hg TMDL target. However, setting such a target for watersheds draining to the Bay does not take into account the local geology and benefit of sediment mixing with sediments discharged from other non-mineralized areas.

Phased TMDL Approach

8. Due to the lack of a documented linkage between sediment-based load allocations and target fish tissue concentrations, a phased approach would be appropriate for this TMDL. According to the USEPA's 1991 document, "Guidance for Water Quality-Based Decisions: The TMDL Process" (EPA 440/4-91-001), "...if there are not adequate data and predictive tools to characterize and analyze the pollution problem with a known level of uncertainty, a phased approach may be necessary."

A phased approach is typically needed when nonpoint sources are a large part of the pollutant load, information is limited, and/or narrative criteria are being interpreted. Under these circumstances, there is often great uncertainty in the load allocation. The first phase of TMDL implementation includes taking action on the more obvious sources of load reduction, with increasingly difficult and less cost effective actions considered later. The TMDL can be revised upon new data that indicate a revision in the loading capacity.

The proposed BPA revisions for the Guadalupe River Mercury TMDL do include requirements for completion of additional studies during Phase 1 that would provide additional data that could be used to establish a quantitative relationship between loads and fish tissue concentrations. However, the proposed BPA revisions do not include a process for reviewing the data obtained during Phase 1 to reconsider the appropriateness of the objectives, TMDLs, or load allocations if better information is available to do so. We recommend that language allowing for consideration of new data be written into the BPA revisions (See Attachment B).

Respectfully submitted,

Terry Cooke



Attachment B
Proposed Revisions to Basin Plan Amendment
April 18, 2008

From Page BPA-4

Table 3-4A: Freshwater Water Quality Objectives for Mercury in Walker Creek, Soulajule Reservoir, and Their Tributaries; and in Waters of the Guadalupe River Watershed, Except Los Gatos Creek and its Tributaries Upstream of Vasona Dam, Lake Elsmar, Lexington Reservoir, and Vasona Lake^a

Protection of Aquatic Organisms and Wildlife ^a Wildlife ^b	0.05 mg methylmercury per kg fish	Average wet weight concentration measured in whole fish 5–15 cm in length from Trophic Level 3 ^c
	0.1 mg methylmercury per kg fish	Average wet weight concentration measured in whole fish 15–35 cm in length from Trophic Level 3 ^c

Note:

^a The objectives shall be reviewed at least every five years and revised as appropriate to reflect new site-specific data and scientific literature on mercury bioaccumulation and effects in accordance with the Phased TMDL approach (Guidance for Water Quality Based Decisions: The TMDL Process EPA 440/4-91-001)

^b The freshwater water quality objectives for the protection of aquatic organisms and wildlife also protect humans who consume fish from the Walker Creek and Guadalupe River watersheds.

^c Trophic Level 3 fish as described in TMDL staff report include small bullheads, carp, small catfishes, black crappie, white crappie, goldfish, killifish, bigscale logperch, misquitosfish, California roach, golden shiner, inland silverside, Sacramento sucker, sunfishes (including pumpkinseed, bluegill, redear, and green), and steelhead/rainbow trout



From Page BPA-7

Total Maximum Daily Loads

The TMDLs, shown in Table 7-A, are expressed as methylmercury and mercury concentrations in water and sediment.

Table 7-A: Total Maximum Daily Loads^a

Waters	TMDLs
Waters upstream of reservoirs and lakes: <ul style="list-style-type: none">• Guadalupe Creek upstream of Guadalupe Reservoir• Alamitos Creek• Percolation ponds along these creeks• Tributaries to these waters	0.1 mg mercury per kg suspended sediment (dry wt., annual median) <u>or site-specific load^b</u>

^a The TMDLs shall be reviewed at least every five years and revised as appropriate to reflect new site-specific data and scientific literature on mercury bioaccumulation and effects, and experience with the effectiveness and cost of management actions in accordance with the Phased TMDL approach (Guidance for Water Quality Based Decisions: The TMDL Process EPA 440/4-91-001).

^b May be revised to include consideration of site-specific conditions that reflect background concentrations accounting for local geologic features in accordance with studies described under implementation actions for Mercury Mines (BPA-10)

From Page BPA -8

Load and Wasteload Allocations

Concentration-based pollutant allocations by source category, equal to the TMDLs in Table 7-A, are shown in Table 7-B.

Table 7-B: Load and Wasteload Allocations

Source	Load Allocation	Wasteload Allocation
Sources to waters upstream of reservoirs and lakes:		
Mercury mining waste discharged from the New Almaden Mining District, and Santa Teresa and Bernal mercury mines	0.1 mg mercury per kg erodable soil fines (dry wt., median) or site-specific loads ^a	
Mercury-laden sediment discharged from depositional areas in Alamitos Creek, Guadalupe Creek upstream of Guadalupe Reservoir, tributaries to these creeks, and percolation ponds along these creeks	0.1 mg mercury per kg erodable soil fines(dry wt., median) ^a	
Nonurban stormwater runoff discharges	0.1 mg mercury per kg suspended sediment (dry wt., annual median) ^d	

Notes:

^a The Load and Wasteload Allocations shall be reviewed every five years after adoption and revised as necessary to incorporate new information in accordance with the Phased TMDL approach. Soil fines (i.e., particulates, suspended sediment) are less than 63 microns in diameter. Erodable soil is the portion of bulk material that is potentially available for transport by storm runoff or already deposited in the stream. The erodable soil fines allocations are equal to the mercury suspended sediment TMDLs in Table 7-A and may be revised to include consideration of site-specific conditions that reflect background concentrations accounting for local geologic features in accordance with studies described under implementation actions for Mercury Mines (BPA-10).

^b The methylmercury allocation to reservoirs and lakes is equal to the methylmercury TMDL in Table 7-A.

^c The urban stormwater runoff allocation is proportionally equivalent to the mass allocation (7.2 kg mercury per year) in the San Francisco Bay mercury TMDL. The urban stormwater runoff allocation is the fraction of the Santa Clara Valley Urban Runoff Pollution Prevention Program allocation attributed to the Guadalupe River watershed. The urban stormwater runoff allocation implicitly includes all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas including, but not limited to, California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

^d The nonurban stormwater runoff allocation is proportionally equivalent to the mass allocation (0.5 kg mercury per year) in the San Francisco Bay mercury TMDL. The nonurban stormwater runoff allocation is the fraction of the regionwide allocation attributed to the Guadalupe River watershed. The background mercury concentration in nonurban and non-mined areas is equal to the nonurban stormwater runoff allocation (0.1 mg mercury per kg suspended sediment), and includes mercury from both naturally occurring mercury in soil and atmospheric deposition.

^e The atmospheric deposition allocation to water surfaces in the Guadalupe River watershed is equal to the rate in the San Francisco Bay mercury TMDL.



From Page BPA-10

These orders will collectively require the responsible parties to:

1. Develop a workplan describing the planned approach to evaluate erosion potential of mining waste including consideration of background mercury concentrations that account for local geologic conditions in areas under the Responsible Party's jurisdiction. Submit the workplan for review and approval by the Executive Officer within 180 days after approval of Final TMDL and BPA by US EPA
2. Conduct investigations in the workplan and a site investigation evaluating the erosion potential of mercury mining waste and the potential for seeps to discharge mercury from mining waste to receiving waters. submit the site investigation report for review and approval by the Executive Officer in accordance with the workplan within the first two years of Phase 1, but no later than December 31, 2009.
- 2-3. Develop plans and schedules to control mercury mining waste discharges to receiving waters. Submit plans and schedules for review and approval by the Executive Officer within 6 months of approval of the investigation report. Implement the approved plans in accordance with the approved schedule
- 3-4. Cleanup and abate discharges of mercury mining waste within the 10-year duration of Phase 1 approved schedule. Submit a cleanup report for review and approval by the Executive Officer no later than December 31, 2017 within the approved schedule
- 4-5. Monitor to evaluate the following:
 - a) effectiveness of erosion control measures
 - b) mercury loads discharged annually to waters of the State at the points of discharge
 - c) fish bioaccumulation of mercury in waters downstream of the discharge
 - d) mercury loads discharged annually to San Francisco Bay, and
 - e) answer the questions posed by special study 3b

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April 21, 2008

BY U.S. MAIL AND E-MAIL: caustin@waterboards.ca.gov

Carrie M. Austin, P.E., Project Manager
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Control Board
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**Comments on Proposed Basin Plan Amendment and Staff Report of Guadalupe River Watershed:
Mercury Total Maximum Daily Load (TMDL) Project (February 2008)**

Dear Ms. Austin:

On behalf of the Guadalupe Rubbish Disposal Company, Inc. ("GRDC"), we appreciate the opportunity to review and comment on the February 2008 Proposed Basin Plan Amendment (the "BPA") and Staff Report (the "Report") of the Regional Water Quality Control Board's *Guadalupe River Watershed: Mercury Total Maximum Daily Load (TMDL) Project* (the "project"). GRDC owns and operates the Guadalupe Landfill on a portion of the former Guadalupe Mine operations¹ and is therefore very interested in the development of an appropriate, scientifically-based TMDL for the Guadalupe Watershed. We also appreciate the significant amount of work that you and others at the Water Board have committed to both the project and to working with various stakeholders in the Watershed, including GRDC.

After reviewing the BPA and the Report, we respectfully note there are significant problems and several critical defects to the overall TMDL, and a number of areas where there is not an adequate technical or scientific basis for the conclusions reached or recommendations offered. For example, one significant threshold problem with the TMDL is that it does not in fact establish a "total maximum daily

¹ Guadalupe Mine operations also occurred on land currently owned by the Midpeninsula Open Space District.

loading” or “allocations” as required by the federal Clean Water Act. Nowhere does the Report establish a total “daily loading” of allowable mercury to the watershed, and nowhere does it establish daily load allocations. Rather, it establishes certain concentration-based “allocations” in some areas, and annual mass-based loading rates in other areas.

While GRDC is critical of and questions much of the BPA and the Report, we are supportive of TMDL objectives and generally supportive – assuming that we correctly understand it – of the implementation strategy for historical mining areas downstream of the impoundments, including the Guadalupe Landfill. Based on the BPA and the Report, we understand the proposed implementation strategy is similar to existing stormwater strategies, including implementation of best management practices for controlling stormwater run-off.

We hope the Water Board will consider our comments and address them before finalizing the TMDL project.

GENERAL COMMENTS

1. The TMDL Does Not Satisfy The Clean Water Act’s Requirement That TMDLs Must Be Based on a Daily Limit.

The Report states, “A TMDL need not be stated as a daily load (Code of Federal Regulations, Title 40, §130.2[i]). Other measures are allowed if more appropriate.” Report at 8-1. The Board then proposes an approach that adopts seasonal, annual, and concentration-based load allocations, but no daily loads. While GRDC generally favors the Board’s preference for adopting TMDLs based on other appropriate and more flexible considerations, the Board’s approach directly contradicts a 2006 U.S. Court of Appeals decision in *Friends of the Earth, Inc. v. EPA*, 446 F.3d 140 (D.C. Cir. Apr. 25, 2006). In the decision, the D.C. Circuit held that TMDLs under the Clean Water Act unambiguously require TMDLs must be based on daily, and not seasonal or annual, loads. “Daily means daily, nothing else.” 446 F.3d at 142. As a result, EPA may not be able to approve the proposed TMDL because it is not stated as a “daily load.”

EPA itself now recognizes the need to address the court’s decision in future TMDLs. In a November 15, 2006 memorandum by Ben Grumbles, Assistant Administrator, Office of Water, USEPA issued guidance related to the court decision that supports daily time increments in TMDLs. In the

memorandum, "EPA recommends that all future TMDLs and associated load allocations and wasteload allocations be expressed in terms of daily time increments."² This requirement even applies to TMDLs that are under development, such as the Guadalupe TMDL:

For TMDLs under development that have not yet been adopted by States or established by EPA, EPA recommends that such TMDLs and allocations be revised, if feasible, to be consistent with this memorandum prior to their adoption or establishment. If States adopt and submit TMDLs expressed solely in non-daily terms, EPA expects to ask the submitting State to provide written documentation regarding how the submitted TMDLs and allocations would be expressed in daily terms.

See id.

The Board should revise the proposed TMDL to be consistent with the *Friends of the Earth* decision and EPA guidance.

2. A TMDL Cannot Be Based on Mercury Concentration in "Erodable Soil."

Fundamentally, a TMDL is a "daily load" or a quantity of material that can be discharged into navigable waters on a daily basis, typically expressed as units per day. The BPA and the Report establish a TMDL based not on a daily discharge rate, but rather on a static concentration of mercury in soil, regardless of what total quantity of mercury actually discharges to navigable waters. As such, the 0.1 parts per million ("ppm") and 0.2 ppm "erodible soil fines" standards are not allowable bases for establishing waste load allocations under the Clean Water Act. EPA Region 9's guidance on TMDLs states that "a maximum allowable pollutant load must be estimated to address the site-specific nature of the impairment. The loading capacity reflects the maximum amount of a pollutant that may be delivered to the waterbody and still achieve water quality standards." EPA Region 9, *Guidance for Developing TMDLs in California* at 4 (Jan. 7, 2000) ("EPA Region 9 Guidance"). In stark contrast to this directive from EPA, the Report admits:

² See <http://www.epa.gov/owow/tmdl/dailyloadsguidance.html>.

[T]he Guadalupe Linkage Analysis (see Section 7.1) for inorganic mercury is qualitative, so it does not provide a scientific basis for a mass load in the Guadalupe River watershed. Report at 8-4 (emphasis added).

This admission is tantamount to conceding that the TMDL does not provide the very information that it is required to provide, namely “an understanding of pollutant loading sources and the amounts and timing of pollutant discharges [that] is vital to the development of effective TMDLs.” EPA Region 9 Guidance at 4. Moreover, an “erodible soil fines” standard simply will not and cannot serve to determine “the maximum amount of a pollutant that may be delivered to the waterbody and still achieve water quality standards.” The “maximum amount” must be determined based on how much mercury is discharged to the system, and cannot be based on the concentration of mercury in the soil, *i.e.*, one cubic yard of heavily contaminated erodible soil may result in a lower total discharge of mercury than a millions of cubic yards of lightly contaminated soil.

3. An “Erodible Soil” Standard of 0.1 ppm or 0.2 ppm is Excessively Stringent Because It Fails to Account for Dilution.

In addition to disagreeing with the proposed TMDL’s use of concentration-based limits, we also believe that the proposed TMDL’s approach fails to consider the dilutive effect of uncontaminated sediments from entering into the watershed. If the concentration-based approach is accepted, then the erodible fines standard needs to be derived using the same method for water-based TMDLs, *i.e.*, the erodible fines standard should be raised to include the dilutive effect of clean sediments. As proposed, the erodible fines requirements of 0.1 ppm and 0.2 ppm are excessively stringent and not consistent with the Clean Water Act.

4. A Standard Based on “Erodible Soils” Is Vague and Unworkable.

Even if a TMDL based on mercury concentrations in erodible soils were lawful, the standard is unworkable as a practical matter. How does one determine which soils are “erodible?” Aren’t all soils erodible to some degree? The Report defines “erodible soil” as “soil that is transported by storm runoff to receiving waters.” Report at 8-17. Thus, for a landowner to know whether certain soils are “erodible soils” those soils must have already been transported by stormwater runoff to receiving waters, making *post hoc* control of those discharges impossible. Conversely, if all soils are – in theory – erodible, then the 0.1 ppm and 0.2 ppm standards become *de facto* cleanup standards. The majority of natural soils

throughout the Guadalupe Watershed would likely exceed this excessively stringent standard, thereby requiring removal or some other form of remediation to ensure that the soils would never become “erodable.”

5. An “Erodable Soil” Standard of 0.1 ppm or 0.2 ppm Is a *De Facto* Soil Cleanup Standard That Is Excessively Stringent.

As drafted, the proposed TMDL imposes *de facto* soil cleanup standards that are two to three orders of magnitude more stringent than cleanup standards developed and typically applied by EPA and the State of California for cleanup of mercury contamination of soils. For example, EPA Region 9 has developed “preliminary remediation goals” or “PRGs” for mercury concentrations in residential and industrial soils. These PRGs are not cleanup standards *per se*; rather, they are “tools for evaluating and cleaning up contaminated sites” and “risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements.” For mercury, EPA has set the PRGs at 23 mg/kg for residential soils and 310 mg/kg for industrial soils. Similarly, the California Human Health Screening Levels sets screening levels of 180 mg/kg for commercial/industrial properties and 18 mg/kg for residential properties.³

While the BPA and the Report lack any valid basis for setting the erodable soil standard at 0.1 mg/kg, it explains that the 0.2 mg/kg erodable standard is based on the San Francisco Bay Mercury TMDL. Yet, there is no explanation in the Report as to why a marine mercury sediment standard is appropriate for a freshwater “erodable soil” standard, especially given that the locations are substantially different in terms of potential to methylate mercury. Further, a review of the San Francisco Bay TMDL reveals that there is little data and no rational basis for defining any quantitative value, let alone serve as the standard in the Guadalupe Watershed TMDL.

In other words, a substantial amount of scientific investigation and evaluation has been undertaken to derive appropriate screening and cleanup levels for soils contaminated with mercury. In contrast, the BPA and the Report admit that it has not undertaken any kind of scientific evaluation of the purported “cleanup standards” other than adopting a background concentration of 0.1 ppm from “background” sediment concentrations in the Lexington Reservoir.

³ See <http://www.epa.gov/region09/waste/sfund/prg/files/04prgtable.pdf> at 9.

6. Lexington Reservoir Is Not an Appropriate Background Reference Because It Is Not Mineralized.

The Report's decision to use Lexington Reservoir sediments to represent background sediment concentrations is neither justified nor logical. An appropriate reference site should be a site that is mineralized but not impacted by mining operations. In the proposed TMDL, the Report states that, other than a small silica deposit, "there were no other potential mercury deposits identified in the Lexington Reservoir watershed." Report at 3-14 (emphasis added). The Report cannot justify using the Lexington Reservoir – or the areas draining into it – as representative of background conditions in the New Almaden Mining District due to the absence of naturally existing cinnabar concentrations in the soil that would otherwise support mining activities.

7. The TMDL Does Not Provide Evidence That Downstream Mining Wastes from GRDC Are Impacting the Guadalupe Creek.

The BPA and the Report do not provide evidence that there are downstream mining wastes or mercury discharges from the former Guadalupe Mine area impacting the Guadalupe Creek. BPA at 5; Report at 7-1 and 7-7. Although the BPA and the Report assume that there are discharges from the former Guadalupe Mine area, it does not support this assumption with sampling data or other evidence.

8. The Report Confirms That There Is No Need to Assign Allocations to Mining Sources Downstream of the Reservoirs.

The TMDL admits that the reduction of mercury and methylmercury in the reservoirs and upstream mining areas is the key to meeting the water quality objectives. The Report states:

Although there may be sites for methylation in the stream and river channels ..., their total contribution to methylmercury production is much smaller than the exports from the reservoirs and Lake Almaden during the dry season. This suggests that that reducing methylmercury production to attain TMDL targets in impoundments in the mining district and Almaden Lake will likely also attain targets in downstream waters. Report at 7-14 (emphasis added).

Thus, the Report itself acknowledges that allocations are not necessary for downstream sources in order to meet the TMDL targets. There is no justification for requiring downstream mining sources to implement load reduction strategies to meet the TMDL target.

9. The Guadalupe Mines Are Improperly Included in the New Almaden Mining District.

The BPA and the Report state that mining waste is the largest source of mercury in the Guadalupe watershed and it is located in three general areas. BPA at 5; Report at 7-7. For one of these three areas, it creates a category, the "New Almaden Mining District," and includes the Guadalupe Mine in the category. Report at 3-18. This is arbitrary and improper as the Guadalupe Mine area is distinctly separated in size and location from the extensive mining operations of the New Almaden Mining District.

The BPA and the Report fail to explain the technical basis for creating the "New Almaden Mining District" or provide justification for including the Guadalupe Mine. In fact, mineralized zones mined at the Guadalupe Mines are completely separated from the mines located at Mine Hill and from other mines located along Capitancillos Ridge. Not even the calcsilicate or serpentinite rock formations have any continuity with bedrock formations in the New Almaden Mine

The BPA arbitrarily lumps the Guadalupe Mines with other mines to suggest that the extremely high mercury found in other areas is present near the Guadalupe Mines. No data is provided to support this conclusion. In addition, the Report describes mining practices (*e.g.*, dumping mining waste rock away from the mine and into creeks) in the New Almaden Mining District that resulted in extensive mercury disposal into Alamos Creek.

There is no evidence that similar practices occurred at the Guadalupe Mines. To the contrary, mine waste rock as mapped by the USGS was kept close to the mine openings. Also, a 500-foot long U-shaped concrete channel that was constructed to prevent waters from infiltrating into sub-surface mines has the ancillary benefit of preventing mine waste from entering Guadalupe Creek.

Further, the Report provides support for excluding the Guadalupe Mine from this arbitrary category "New Almaden Mining District." It indicates that sites located downstream from the reservoir, such as the Guadalupe Mine, appear not to be the cause of elevated methylmercury levels. Report at 7-9. Also, much of the Lower Guadalupe Creek has been restored by the Santa Clara Valley Water District by the removal of sediments.

10. It Will Not Be Necessary to Impose Additional Requirements on Downstream Sources If the Upstream Reductions Achieve the Objectives of the TMDL.

The BPA appropriately focuses on the upstream control of mercury, requiring special studies over a 10 year period to examine issues upstream. BPA at 14 and 15. For example, one downstream study is only triggered “if the fish targets are not attained downstream by methylmercury controls in the reservoirs and lakes.” BPA at 15. This properly puts the burden on improving the upstream controls in the upstream areas where extensive mining operations occurred. Even if the upstream controls are implemented within the next ten years and prove effective, the methylmercury concentrations caused by upstream sources may take an additional number of years to show reductions in the downstream fish.

Successful methylmercury control actions will not instantly result in reductions in fish tissue concentrations downstream. As a result, the 10-year plan to attain targets upstream in the lakes and reservoirs would need to be completed and assessed before appropriate downstream reduction measures could be effectively implemented. Thus, it would not be appropriate or necessary to impose additional requirements on downstream sources if in fact the upstream reductions will eventually result in achieving the goals of the TMDL.

11. The Allocation for Mining Waste Discharges from Areas Below the Reservoirs Should Be Increased Substantially.

Even if the Report continues to assign allocations to downstream mining sources, those “erodable soil” concentrations should be increased substantially. For facilities located in mining areas downstream of the reservoirs (such as the Guadalupe Landfill), the Report arbitrarily selects an erodable soils standard of 0.2 ppm mercury. Indeed, the Report admits that it has little basis for this number, other than the fact that the proposed San Francisco Bay TMDL uses a 0.2 ppm standard. The Report admits that, for the mining areas that do not drain to impoundments, “The Linkage Analysis (Section 7) does not provide a quantitative linkage for this segment of the watershed.” Report at 8-5 (emphasis added). At most, the Report concludes that those areas downstream of impoundments contribute far less to the production of methylmercury than what the reservoirs contribute:

Although there may be sites for methylation in the stream and river channels, it appears that their total contribution to methylmercury production and bioaccumulation is much smaller than the reservoir exports during the dry season. Report at 7-9 (emphasis added).

[T]he methylmercury discharged from the deep impoundments is much greater than the in-stream production (Section 7.3). Report at 8-5 (emphasis added).

Thus, the 0.2 ppm erodable soils standard is arbitrary and unnecessarily stringent for these limited downstream areas.

12. The Derivation of the 0.1 ppm/0.2 ppm Standards is Arbitrary and Logically Flawed.

The Report's target mercury concentrations in "erodable soil" are based on flawed logic. It reasons that: (1) fish in the Lexington Reservoir have acceptable mercury levels; (2) average mercury levels in the Lexington Reservoir sediments are less than 0.1 ppm; therefore (3) locations where sediment mercury concentrations exceed 0.1 ppm or even 0.2 ppm will result in fish with unacceptably high mercury concentrations. Report at 7-2 and 8-4. This logical progression is invalid. One cannot reason that if fish with acceptable mercury burdens live in a reservoir with average mercury concentrations of 0.1 mg/kg, then locations where mercury concentrations exceed 0.1 mg/kg will result in fish with unacceptably high mercury burdens. The Report does not provide any basis or evidence to conclude that fish in areas with sediment mercury concentrations higher than 0.1 ppm or 0.2 ppm will necessarily have mercury concentrations above the fish tissue targets.

13. The TMDL is Improperly Limited to Sediment Load Reduction to Attain Water Quality Objectives for Methylmercury in Fish Tissue.

In proposing water quality objectives for methylmercury in fish tissue, the BPA's attainment strategies focus almost exclusively on sediment load reduction assumed to contain mercury that, in turn, is assumed to cause fish tissue impacts. In doing so, the BPA and the Report fail to justify these assumptions because they do not distinguish methylmercury impacts derived from the erosion of natural bedrock terrain containing disseminated mercury, from legacy natural sediment in creeks and reservoirs, from legacy mine waste in creeks and reservoirs, from actively eroding mine waste piles near former mercury mines, or from air deposition. In other words, the BPA and the Report make two wrong assumptions: (1) all mercury in the system is from former mines; and (2) control of mine wastes will reduce fish tissue methylmercury levels.

As indicated in the Report, the Guadalupe Watershed is the site of rich mercury-bearing ore bodies. See Report at 3-14. These ore bodies occur in natural bedrock formations that contain numerous non-ore grade mercury bearing zones and relatively low concentration of disseminated mercury mineralization. The formations are exposed as rock outcroppings to natural processes of weathering and erosion in over approximately 19 square miles of the watershed. At the same time, mapped former mine waste piles are estimated to cover less than a few hundred acres of the watershed. In short, mercury from natural bedrock exposures has been migrating into the watershed for millions of years. The TMDL provides no detailed studies to show that the mine waste piles are eroding any faster or at all. Without distinguishing natural mercury bearing sediments from sediments derived from mine waste piles, the BPA can not properly assume that fish tissue methylmercury levels are not natural for this watershed.

14. The TMDL Will Punish Dischargers Who Reduce Sediment Loading.

A significant problem with the proposed TMDL is that it establishes an erodable soil concentration limit without considering the amount of sediment being discharged. High concentrations of mercury in erodable soils will have *de minimis* impacts on mercury loading into the Guadalupe Watershed if the quantity of erodable soils discharged is negligible. Conversely, large quantity discharges of sediment to the Watershed could substantially increase overall mercury loads to the Watershed even if the mercury concentration in those erodable soils is low.

For example, Table 4.2 of the Report summarizes particulate mercury data. A comparison of North Los Capitancillos Creek Sample E1-9B with Randol Creek Sample E2-16 highlights the perverse results if the TMDL is based on an erodable soil concentration. Sample E1-9B has the lowest concentration of mercury, yet one of the highest total suspended solids (“TSS”) concentrations. Conversely, Sample E2-16 has a higher mercury concentration, yet a substantially lower TSS concentration. When judged on the basis of total quantity of mercury in soil, the first sample fares substantially better than the second. However, when compared based on the actual mercury concentrations per liter of discharged water, the second sample contains one-tenth the mercury loading of the first sample. Thus, even though the second discharge is one-tenth the quantity of the first, the second discharge will likely require greater remediation efforts than the first under the current Report. In other words, it is fundamentally unfair to regulate discharges of mercury based on only the concentration of mercury in erodable soil without any consideration of the actual TSS discharges.

15. Fish in Lexington Reservoir – the Purported Background Reservoir – Do Not Appear To Meet the 0.3 ppm Target.

It is unclear why the Board has concluded that the fish from the purported background reservoir meet the 0.3 ppm mercury average in “fish consumed by humans.” As noted, TL4 fish are the larger species – *e.g.*, largemouth bass – that are typically consumed by humans; therefore, the 0.3 ppm mercury standard would presumably apply to these TL4 fish. If that is the target, then the 0.3 ppm mercury fish concentration would be virtually impossible to achieve in the Guadalupe basin given that this standard cannot even be achieved in the purported background reservoir.

16. The TMDL Should Use the USFDA’s 1.0 ppm Mercury Action Level for Fish, Not the 0.3 ppm Target.

The Report notes that the Basin Plan’s numeric water quality objective for mercury is derived from the US Food and Drug Administration’s action level for mercury of 1.0 ppm,⁴ yet nonetheless uses the more stringent value of 0.3 ppm as the target based on EPA’s criteria, which has not been adopted for California. Because the water quality objective is based on USFDA’s number, this TMDL should use the 1.0 ppm number as its TMDL target.

17. The Board Cannot Unilaterally Establish a TMDL for Methylmercury.

Under the Clean Water Act § 303(d), the Guadalupe River and the Guadalupe Creek are listed as impaired for elemental mercury, not methylmercury. The BPA and the Report ignore this fact and improperly establish a TMDL for methylmercury. It is inappropriate for the Board to establish a TMDL for a pollutant which was not identified in the Clean Water Act § 303(d) list as causing or expected to cause violations of the applicable water quality standards. Further, to the extent the Board desires to establish a TMDL for methylmercury, it must first be listed under the Clean Water Act.

18. The Report Fails To Adequately Quantify Loading From Wet Weather Storm Events in the Upper Watershed.

One glaring – and admitted – defect in the Report is the lack of upper watershed load estimates, particularly during wet weather when increased flows result in higher sediment transport and therefore higher mercury transport. Without this kind of information, it is not possible to develop a defensible

⁴ See, *e.g.*, <http://www.cfsan.fda.gov/~lrd/fdaact.html#merc>.

TMDL. Indeed, even the consultant assisting in the preparation of the Report “strongly recommended” further study:

Although approximate, this calculation highlights the significance of the storm event loads in the upper watershed, and indicates a major source of uncertainty in the estimated loads presented here: the contribution of large winter storms. Based on this assessment, it appears that the calculated loads presented here are more likely to be underestimates than to be overestimates. . . . Tetra Tech strongly recommended further quantification of the upper watershed loads through additional wet weather data collection in future stages of this project. Tetra Tech also noted that the numerical values of the loads presented in this section are best considered only as estimates useful in comparing the relative magnitudes of different sources in the watershed. Report at 4-19 (emphasis added).

The problems associated with the limited wet season sampling provide an unreliable basis for establishing a proper TMDL. The wet season data was collected during only one wet season making it difficult to understand long-term temporal variability in pollutant loading and stream flows. Furthermore, the data collected is dispersed over the whole watershed and provides at best a snap shot of mercury concentrations at one point in time. Even for the samples collected, it is unclear why flow rates and suspended sediment values were not also collected. Understanding flow rates and sediment loading is critical to understanding the mercury loadings into the watershed.

19. GRDC’s Operations Are Fully Regulated.

The Report mentions that GRDC operations are subject to a General Industrial NPDES Stormwater Permit but fails to mention the proper scope of the permit. Report at 4-27. Discharges from the entire operations are covered by the General Permit and are addressed by the Storm Water Pollution Prevention Plan.

20. The TMDL Repeatedly Fails to Support Statement with Data.

In many instances, the BPA and the Report merely alleges findings without evidence. For example, the table on load and wasteload allocations (Table 7-B) indicates that the Guadalupe Creek is a source of mercury because of “mercury-laden sediment discharged from depositional areas in Guadalupe Creek”. BPA at 8. There is no data in the BPA or the Report to support this statement. Although the BPA mentions that “[a]ctions are required to control mercury mining waste” (BPA at 10), there is no

data in the BPA or the Report to support this proposal. In fact, the Report mentions that Santa Clara County has already conducted extensive control of mining waste in the New Almaden Mining District and there is no evidence to suggest that controls are needed near the former Guadalupe Mine.

Despite the lack of supporting data, the BPA requires both control and cleanup of mercury mining waste discharges. BPA at 11. This is contradictory. If control of mercury mining waste discharges is needed (*see* Item 2), then it is uncertain why cleanup and abatement of discharges required as well (*see* Item 3). At the same time, if cleanup and abatement is going to occur, it is unclear what control would be needed and why.

21. The Implementation Actions for Mines Has Significant Uncertainties.

The BPA mentions that responsible parties will be required to cleanup mercury mining waste (BPA at 11, no. 3) but fails to define the term “cleanup”; natural background levels; and the contribution linkage of mine wastes not located in creeks and reservoirs.. The BPA discusses the possibility of a study to examine methylmercury production and bioaccumulation in downstream creeks and rivers by “responsible parties.” BPA at 15. It is neither reasonable nor practical to expect that all “responsible parties” can coordinate and perform the possible study. How is “responsible party” defined, who makes the determination and how will free-riders be prevented?

22. The BPA and the Report Have Numerous Data Gaps and Uncertainties.

A. Fundamental to the development of a technically and scientifically supportable TMDL is developing a sound understanding of the sources of pollutant discharges, the amounts of those discharges, and the timing of those discharges. EPA Region 9 writes,

An understanding of pollutant loading sources and the amounts and timing of pollutant discharges is vital to the development of effective TMDLs. The TMDL document must provide estimates of the amounts of pollutants entering the receiving water of concern or, in some cases, the amount of pollutant that is bioavailable based on historic loadings stored in the aquatic environment. These pollutant sources or causes of the problem need to be documented based on studies, literature reviews or other sources of information.

Because the source analysis provides the key basis for determining the levels of pollutant reductions needed to meet water quality standards, and the allowable assimilative

capacity, TMDL, wasteload allocations, and load allocations, quantified source analyses are required. EPA Region 9 Guidance at 4 (emphasis added).

While the Report includes discussion and some analysis of pollutant loading sources, we do not believe that the amount of information or analysis is sufficient for purposes of developing a TMDL. The proposed TMDL contains numerous data gaps, contradictions, and significant uncertainties. Examples include:

- (1) Following remediation in the Almaden Quicksilver County Park, the Santa Clara County did not take post-remediation samples. Report at 3-22. This is an important and significant data gap, especially in light of the proposed 0.1 ppm standard. Will the TMDL essentially re-open the relevant consent decrees and/or cleanup orders?
- (2) The BPA and the Report fail to identify background soil concentrations of mercury to be used as a comparison with the 0.1 ppm erodible soils standard.
- (3) The Report concedes that, because of the absence of flow gauge information at any of the subwatersheds modeled, the SWAT model could not be calibrated, and this is a source of uncertainty (see Section 4.3). Report at 4-4.
- (4) The Report admits that the lack of high flow sample data may lead to an underestimation of the load, thus creating another source of uncertainty. Report at 4-5.
- (5) The Report recognizes that, like the Monte Carlo simulation for one year, the Monte Carlo simulation for 1960 – 2001 wet seasons (Figure 4.6) is also biased low due to lack of data for high flow events, when the greatest loads occur. Report at 4-22.
- (6) The TMDL admits that the linkage analysis is inadequate: “However, the Guadalupe Linkage Analysis (see Section 7.1) for inorganic mercury is qualitative, so it does not provide a scientific basis for a mass load in the Guadalupe River watershed.” Report at 8-4.

B. A critical element of any TMDL is to determine the mass loading into the waterbody.

“The loading capacity reflects the maximum amount of a pollutant that may be delivered to the

waterbody and still achieve water quality standards.” EPA Region 9 Guidance at 4. Yet, the TMDL admits:

Mass loads were estimated in the Final Conceptual Model Report (Tetra Tech 2005c) with low precision (a high precision monitoring program was cost-prohibitive and unnecessary for the conceptual model). We do not propose to examine mass loads further due to the low precision of the estimate. In contrast, a statistically robust set of impoundment bottom sediment samples were collected (see Figure 7.2) and provide a qualitative linkage from sources to targets (Section 7.1). Report at 7-25.

C. The Report contains other statements reflecting the significant uncertainties infusing the entire TMDL calculations:

The 2003-04 wet season loads exiting the Guadalupe River to San Francisco Bay (10,000 g) are far higher than the total loads entering the river from all its tributary creeks and from its watershed (800 g). This is a strong indication of uncertainties in the upstream contributing loads, in loads from the highly urbanized area, and in the mobilization of internal sediment loads. Report at 4-11. This lack of calibration adds to the uncertainty, and there is insufficient information to determine whether it might contribute to under- or overestimating the load. Report at 4-18.

In Figure 4.4, most dissolved mercury loads include a “background” input; however, the Guadalupe Creek load downstream of the reservoir does not include any background load. Report at 4-16. Rather, it attributes 3.9 grams to “mines” without any evidence or sampling to prove this load amount and its sources(s). This discrepancy seems especially significant because the other purported background loads are of the same magnitude or greater than the assumed mine load downstream of the reservoir. If a similar background load were attributed to Guadalupe Creek, then presumably the alleged concentration from the mines would be reduced.

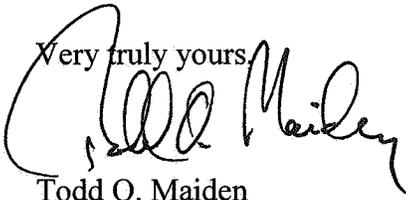
D. More fundamentally, we believe that there is a significant lack of information in the TMDL for assessing temporal and spatial contributions of mercury to the watershed. For example, fish tissue information provides very little information as to what sources are contributing to mercury loads and when those discharges occur. This is especially problematic for sources downstream of the reservoirs where fish tissue concentrations would fail to distinguish between methylmercury generation in the upstream impoundments and generation in the downstream segments.

E. As another example, the TMDL sweeps huge areas of the watershed into the "Mining District" without describing or mapping in more detail the locations of mining areas, mining waste, mining impacts, soil types, background mercury concentrations in soil, and mercury bearing rocks.

* * *

Due to the issues discussed in this letter, GRDC is extremely concerned with the adequacy of the proposed BPA and the Report. We believe that it will require a substantial revision before it is legally adequate and technically or scientifically supportable.

Very truly yours,



Todd O. Maiden

TOM:mm

cc: E. Pettit (via electronic mail)

Post Office Box 13105
Coyote, Ca. 95013

March 21, 2008

Carrie M. AUSTIN, P.E.
Environmental Engineer
California Regional Water
Quality Control Board
Suite 1400
1515 Clay Street
Oakland, Ca. 94612

MAR 28 2008

Re: Hillsdale Mine

Dear Ms. Austin:

Thank you for providing me copy of the staff report re the Guadalupe River Watershed.

While reading the report, I found what might be a typographical error. On page 3-17, the last paragraph:

"In the 1960's engineers rerouted the lower portion of Canoas Creek to enter the Cuadalupe River further upstream, and channelized its sides with concrete."

I recalled that a title report indicated an underground concrete culvert associated with the Canoas Creek. That report referenced the deeds which conveyed the easement for rerouting the Canoas Creek.

Enclosed are copies of the original Deeds (July 22, 1889, September 7 and 8, 1915). These would seem to indicate that the rerouting of Canoas Creek occurred much earlier than stated in the report. Of course the staff report may be referring to an entirely different rerouting.

This letter is not intended as our formal response. It is merely an effort to provide information of which I had knowledge.

Sincerely,



Robert J. Bettencourt

encl.

Thomas B. Kell

TO

The County of Santa Clara

D E E D

July 22, 1889

Dated

WITNESSETH: That the said party of the first part, for and in consideration of the sum of Three Thousand Dollars, gold coin of the United States of America, to him in hand paid by the City of San Jose the receipt whereof is hereby acknowledged, does by these presents grant, bargain, sell, convey and confirm unto the said party of the second part, and to its successors forever, the right of way over and upon the following described strip or parcel of land, situate in said County and State, to wit: A strip twelve (12) feet wide, the center line of which is described as follows: Beginning at a telegraph pole marked K.1 standing near the Easterly line of the Almaden Road and from which a sycamore 12 inches in diameter marked B.T.K.1 bears S. $77\frac{1}{4}^{\circ}$ W. 109 $\frac{1}{2}$ feet, and the common corner of lands of F.Gotelli and T.B.Kell, in the Easterly line of said road bears N. $23\frac{3}{4}^{\circ}$ W. 339.40 feet, and running thence over lands of said party of the first part, S. 35° E. 1270 feet to stake K2 from which a 3" x 6" fence post marked B.T.K.2, bears S. $54\frac{3}{4}^{\circ}$ W. 3970 feet thence S. $49\frac{3}{4}^{\circ}$ E. 267 $\frac{1}{2}$ feet to the center of the present channel of the Canoas Creek at a stake marked K.3 from which a white oak 36" in diameter marked B.T.K.3 bears S. 69° E. 76 feet, the terminus of the proposed ditch. Courses true. Var $16\frac{3}{4}^{\circ}$ E. The aforesaid strip of land to be used for diverting the waters of the Canoas Creek from the present channel at or near Station K3 and conveying the same into the Guadalupe river through a ditch or flume. The ditch to be open from station K3 for about 500 feet. The remainder of the distance to the Guadalupe river to be through

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a covered flume or conduit which shall be built of cement or brick or both cement and brick and shall be four feet in diameter. And the said party of the first part hereby grants to the said party of the second part the perpetual right to enter into and upon said strip of land, and to excavate the same, and construct and maintain thereon and therein a ditch and conduit for the purpose of carrying and flowing through the same the waters of Canoas Creek in such manner as said party of the second part by its properly constituted officers or agents, may desire, and to have free and uninterrupted access to said strip of land, for the purpose of maintaining said ditch and conduit. And said party of the first part hereby further grants to said party of the second party the use of sufficient of the land adjoining said strip, on either or both sides thereof, for the purpose of and as may be necessary and convenient for the proper excavations and deposit of earth and the necessary building material during the time of the construction of said ditch and conduit and in the repair and examination thereof from time to time, as occasion may require; provided that after the completion of the work of constructing the said ditch and conduit or any repairs thereof, the party of the second part shall remove from the ground all remaining material and shall level off and distribute any surplus earth upon and along the Northerly side of the open ditch within a space not exceeding a width of Fifty feet on the North side thereof under the direction and to the satisfaction of the party of the first part. It is understood and agreed that the consideration paid by the City includes and is payment in full, for all damages that may arise by reason of the diversion of the waters of said creek and to the adjoining land by the deposit of earth and building material, the earth from the open ditch and from the

covered flume to be deposited on the Northerly side of the open ditch forming a levee. T.B. and M.D. Kell and Mrs. Columbet to have the right to take the waters of the San Jose Creek from the open ditch at Station K3 or at any other point designated by the party hereto of the first part, and to conduct the same through the present channel of said creek from said station to lands of Mrs. Columbet, or along such other channel as may be more convenient to said party of the first part and which shall be designated by him. The party of the second part shall provide a water pipe 1 x 2 feet in diameter at Station K3 to permit said waters to be taken by said persons. Whenever the strip of land hereby granted ceases to be used for the purposes aforesaid the same to revert to the party of the first part his heirs or assigns.

In Witness Whereof, the said party of the first part has hereunto set his hand and seal the day and year first above written.

Thos. B. Kell

July 22, 1889

Ackldg:

By Thomas B. Kell, before Wm. B. Hardy, N.P.
in and for the County of Santa Clara, State of
California.

Aug. 10, 1889

Recd:

Liber 120 of Deeds, page 104.

of E. Corralia and Victor Jordano,
Parties of the first part

TO

County of Santa Clara, Party of the Second part

D E E D

Dated

September 7, 1915

WITNESSETH: that the said parties of the first part for and in consideration of the sum of seventy five (75) Dollars, in gold coin of the United States to them in hand paid, do by these presents grant, convey, confirm and dedicate unto the said party of the second part, and to its successors and assigns forever for use as hereinafter stated, all that certain strip, piece and parcel of land situate, lying and being in Road District Number Four, in the said County of Santa Clara, State of California, and bounded and particularly described as follows, to wit:

Beginning at a point in the Northerly line of the lands of E. Corralia et al said point being S. 60° 07' E. 643.33 feet from a stake 1 x 4 in the Easterly line of the Almaden Road said last mentioned stake being the Northwest corner of lands of E. Corralia, et al; thence S. 35° 40' E. 130 feet to a point, being a strip of land of the uniform width of 6 feet, 3 feet on each side of the above described line, containing .014 acres.

The aforesaid strip of land is to be used for diverting the waters of the Canoas Creek from the present channel and convey the same into the Guadalupe River through and by means of a flume constructed of concrete and to be 6 x 6 feet inside measurements. Said flume to be entirely under the surface of the ground and to be covered by earth when completed.

To have and to hold all and singular the said premises together with the appurtenances, unto the said party of the second part and to

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and successors and heirs forever.

In witness whereof, the said parties of the first part have hereunto set their hands the day and year first above written.

Giovanni Paganino

Emanuele Corsiglia

Enrico Caramella

Vitorio Cordano

Ackldg:

September 7, 1915

By Giovanni Paganino, Emanuele Corsiglia, Enrico Caramella and Vitorio Cordano, before H. A. Gabriel, N.P. in and for the County of Santa Clara, State of California.

Recd:

Aug. 3, 1916

Volume 446 of Deeds, page 377.

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Anna Guinasso

TO

County of Santa Clara, a body
politic and corporate and a
political subdivision of the
State of California

D E E D

Dated

September 8, 1915

Cons: \$1000.00

Does by these presents grant, convey, confirm and dedicate unto the said party of the second part, and to its successors and assigns forever for use as hereinafter stated, all that certain strip, piece and parcel of land situate, lying and being in Road District Number Four, in the said County of Santa Clara, State of California, and bounded and particularly described as follows, to wit:

Beginning at a point in the easterly line of the Almaden Road which is $9^{\circ} 07' W.$ 4.69 feet from a point which is $S. 23^{\circ} E.$ 355.08 feet from a stake "K.I" mentioned in that certain Deed of Thomas B. Kell to the County of Santa Clara dated Jan. 22, 1889, and recorded in Book 120 of Deeds, page 104, records of Santa Clara County; thence $S. 67^{\circ} 38' E.$ 7 feet; thence distant 9 feet southerly and parallel to the present 4' brick sewer, $S. 35^{\circ} 30' E.$ 793.33 feet to a point, being a strip of land of the uniform width of 6 feet, 33 feet on each side of the above described line, containing .111 acres.

The aforesaid strip of land is to be used for diverting the waters of the Canoas Creek from the present channel and convey the same into the Guadalupe River through and by means of a flume constructed of concrete and to be 6 x 6 feet inside measurements. Said flume to be entirely under the surface of the ground and to be covered by earth when completed. Said party of the first part is to remove and dispose of all surplus earth from the excavation without cost and charge to said party of the second part.

Anna Guinasso

Acknd.

September 8, 1915

By Anna Guinasso

Before I. Rancadore, N.P.

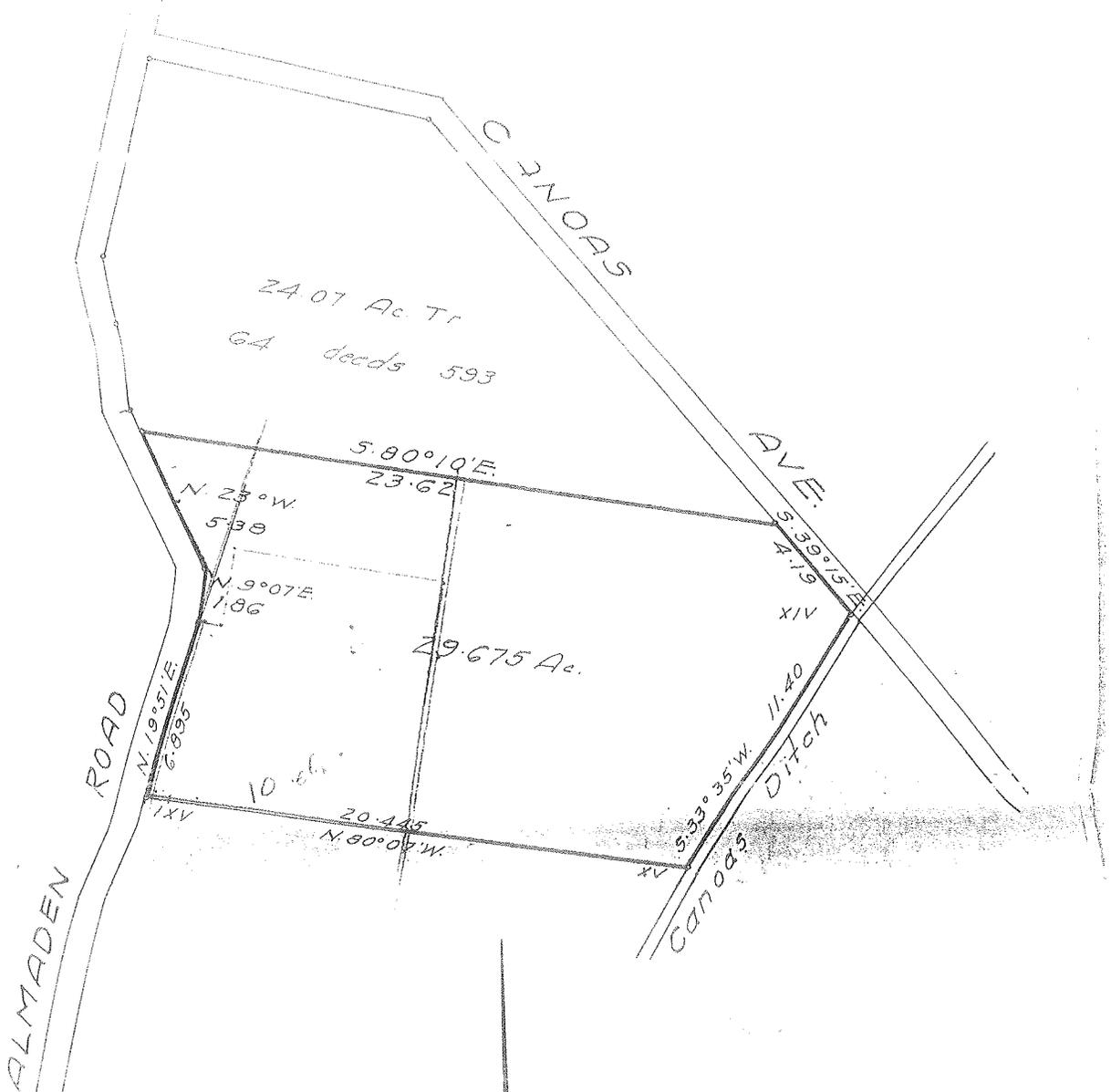
Recorded

September 11, 1916

Book 446 of Deeds, page 579.

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SAN JOSE, CALIFORNIA

Its Secretary.



PART 500 ACRE LOT 65
 San Jose Abstract & Title Insurance Co.
 SAN JOSE, CALIFORNIA

Its Secretary.



April 15, 2008

Ms. Carrie Austin
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

RE: Response to Proposed Guadalupe River Watershed Mercury TMDLs Basin Plan Amendment

Dear Ms. Austin:

On behalf of MTA Hillsdale, LP, the property owner of the former Hillsdale Mine site, this letter provides comments to the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) proposed San Francisco Bay Basin Plan amendment. The former Hillsdale Mine has been included in the proposed Basin Plan amendment as a potential source of mercury sediment that could impact water quality in the Guadalupe River which flows to the San Francisco Bay. We are presenting information in this letter that shows that the former Hillsdale Mine is not in the Guadalupe River watershed and has not historically nor does it currently drain to the Guadalupe River, and therefore should not be included in this Basin Plan amendment.

Introduction

The former Hillsdale Mine is located on the northeastern flank of Communication Hill which is a prominent bedrock ridge located in the south-central portion of the Santa Clara Valley (Figure 1). This mine has not been active for many decades and the area has been used extensively as a rock quarry for several decades. The cinnabar ore was removed by tunneling and some of the subsurface workings remain. The portals were generally sealed many years ago, but some have recently been uncovered for evaluation purposes. The quarry operations generally did not disturb the mine and ore deposit, but extensive grading was performed at the former smelters and lower areas of the site. No smelters or waste rock remain present though their former location is generally known from review of historic aerial photographs.

Mine History

According to Bradley (1918) the first mining activities at the Hillsdale Mine reportedly date back to 1847 just after the land was granted to a Pedro Chaboya. From 1847 to 1861 the mines were worked by these early Californios, and in 1861 the mines were sold to a Mr. Chapman who worked the mines until 1874. Peak production for the Hillsdale Mines was reportedly reached in 1871 with a production of 30 to 40 flasks per month (Bradley, 1918). This is a very small number when compared to the nearby New Almaden Mines which reached a peak production close to 4,000 flasks per month in 1865 (Layton and Bulmore, 1967). Clearly the Hillsdale Mines were marginal in



production likely reflecting the small amount of mercury ore available and/or the poor grade of the ore.

SES has reviewed historical air photos and has confirmed that no active mining appeared to be present in the earliest aerial photos we reviewed from 1939 to the present. Grading related to the Raisch Quarry operations has intermittently disturbed areas near the mine openings and lower flat-lying areas below the former mine in the 1971 through at least 1996. This grading removed both retorts that were previously present in the mining area.

Mine Operations

From exploration work performed recently by SES, the mining was conducted by near-horizontal tunneling into the hillside at two levels, and opening up subsurface caverns using pillar and beam-type methods. Several steep air shafts appear to have been excavated as well. There is evidence that small, narrow-track ore carts were used to bring the ore out of the lowest levels of the mine and out to a retort located near the daylight of the main portal. From the SES review of historic aerial photos, it is not clear where the processed wastes were placed. It is possible that the wastes were placed in a low-lying area below the main mine workings, or used to improve the access roads to the mines. In either case, these areas are not located within the Guadalupe Watershed, as described below.

Surface Water Flow

Communication Hill is a bedrock ridge that rises several hundred feet above the Santa Clara Valley. The ridge is elongated trending northwest-southeast, as shown on Figures 2 and 4. The former Hillside Mine is located entirely on the northeast-facing slope of Communication Hill following an elongated lens of silica-carbonate altered rock. Mass grading in the last several years for the residential development on the southwest-facing flank has confirmed that there was no mining on that portion. Surface water drainage follows topography and flow is to the northeast as shown on Figure 2. This direction is away from the Guadalupe River Watershed including the closest surface water which is Canoas Creek. The bedrock topography, however, prevents surface water flow in this direction as can be seen in Figure 2 where bedrock highs intersect and do not allow surface water flow from the mine area to the northwest. The earliest available USGS topographic map from 1899 is included as Figure 4. This map illustrates that the Communication Hill topography at that time was similar to what it is today and prevented surface water drainage to the west and northwest towards the Guadalupe River Watershed.

In support of our observations about surface water flow, we have identified a watershed map produced by the Santa Clara Valley Water District (1996) which is reproduced as Figure 3. This map clearly shows that the site and vicinity is part of the Coyote Creek



Sub watershed and not the Guadalupe River Sub watershed. Given the bedrock topography in the area that control surface water drainage, these sub watershed boundaries in the site area would have been no different when the majority of the mining activity occurred in the 1800's.

The railroad tracks below the former mine area are elevated and artificially interfere with surface water flow. Most surface water drainage is captured by a man-made pond that is present at the base of the hill and situated against the railroad tracks. During particularly wet years there are pipes beneath the railroad that allow excess surface water flows to the east. The railroad tracks were installed in 1935. During the mining activities in the 1800's presumably surface water flow and sediment transport was uninterrupted by the railroad and flow occurred to the northeast following topography. Flow in this direction would take all surface water to the Coyote Creek located about 1½ miles to the northeast. Given the nearly flat topography, small drainage area, and relatively long distance, we believe it is very unlikely that any sediment from the mine area would have been able to reach the Coyote Creek now or in the past.

Conclusions

In this response, we believe we have presented compelling evidence that the former Hillsdale Mine in not within the Guadalupe River Watershed, has not historically contributed sediment to the Guadalupe River Watershed, and therefore should not be included in the San Francisco Bay Basin Plan Amendment for the mercury TMDL implementation plan and controls for the Guadalupe River Watershed.

We hope you concur with our conclusions on this matter and the opportunity to comment on the proposed amendment. If you have any questions or concerns regarding this request, please contact me at (510) 451-2917 ext. 202, or (925) 786-7701 (cellular).

Sincerely,

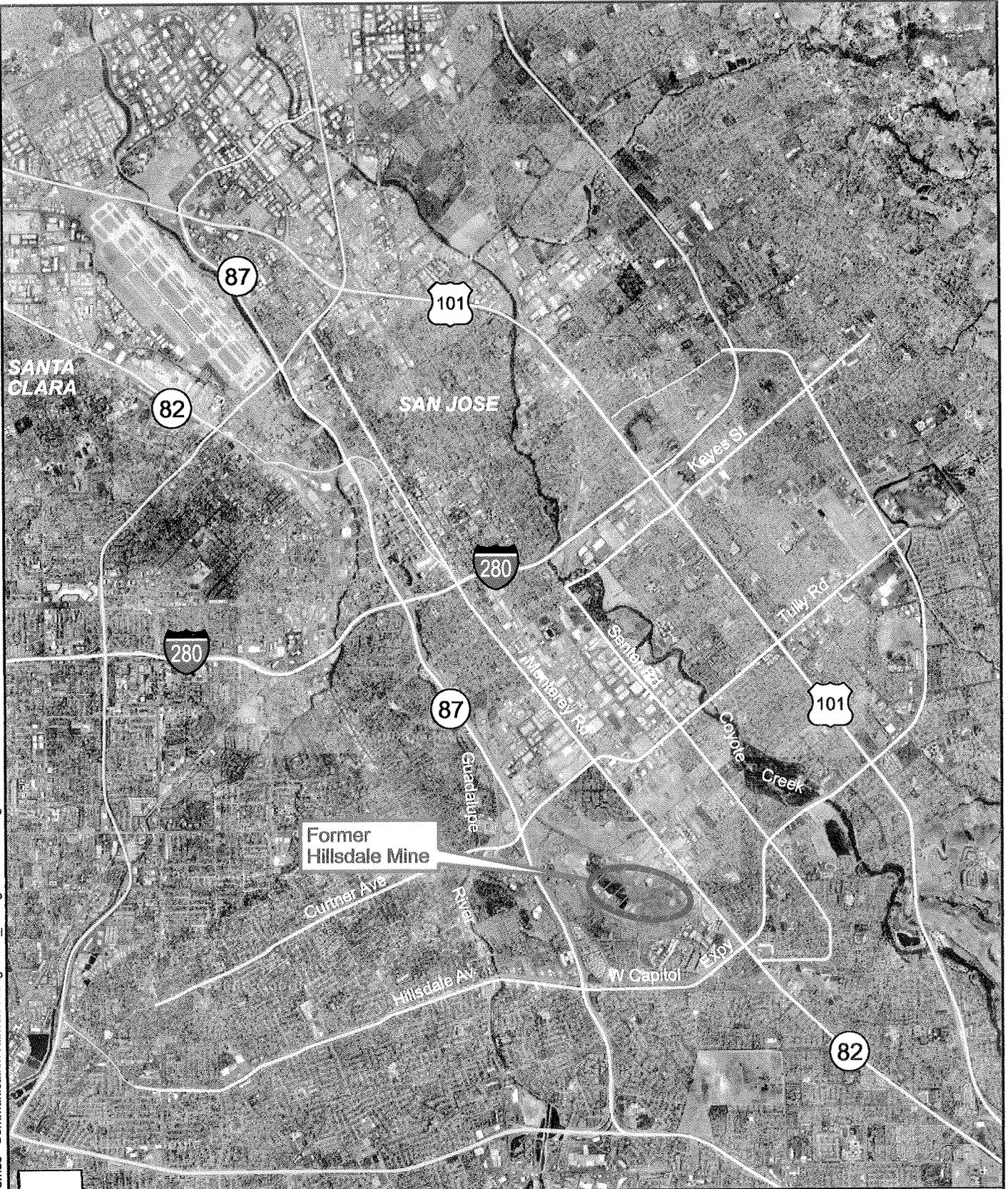
Thomas F. McCloskey, P.G., C.E.G., C.H.G.
Principal Geologist

Copies: Addressee (2)
MTA Hillsdale, LP (1)
Attn: Mr. Robert Bettencourt
SummerHill Homes (3)
Attn: Mr. Bob Hencken

References

Bradley, W.W., 1918, *Quicksilver Resources of California*, California State Mining Bureau, Bulletin no. 78.

Layton, Milton, and Bulmore, Laurence, 1967, *Cinnabar Hills: The Quicksilver Days of New Almaden*.



Former Hillside Mine



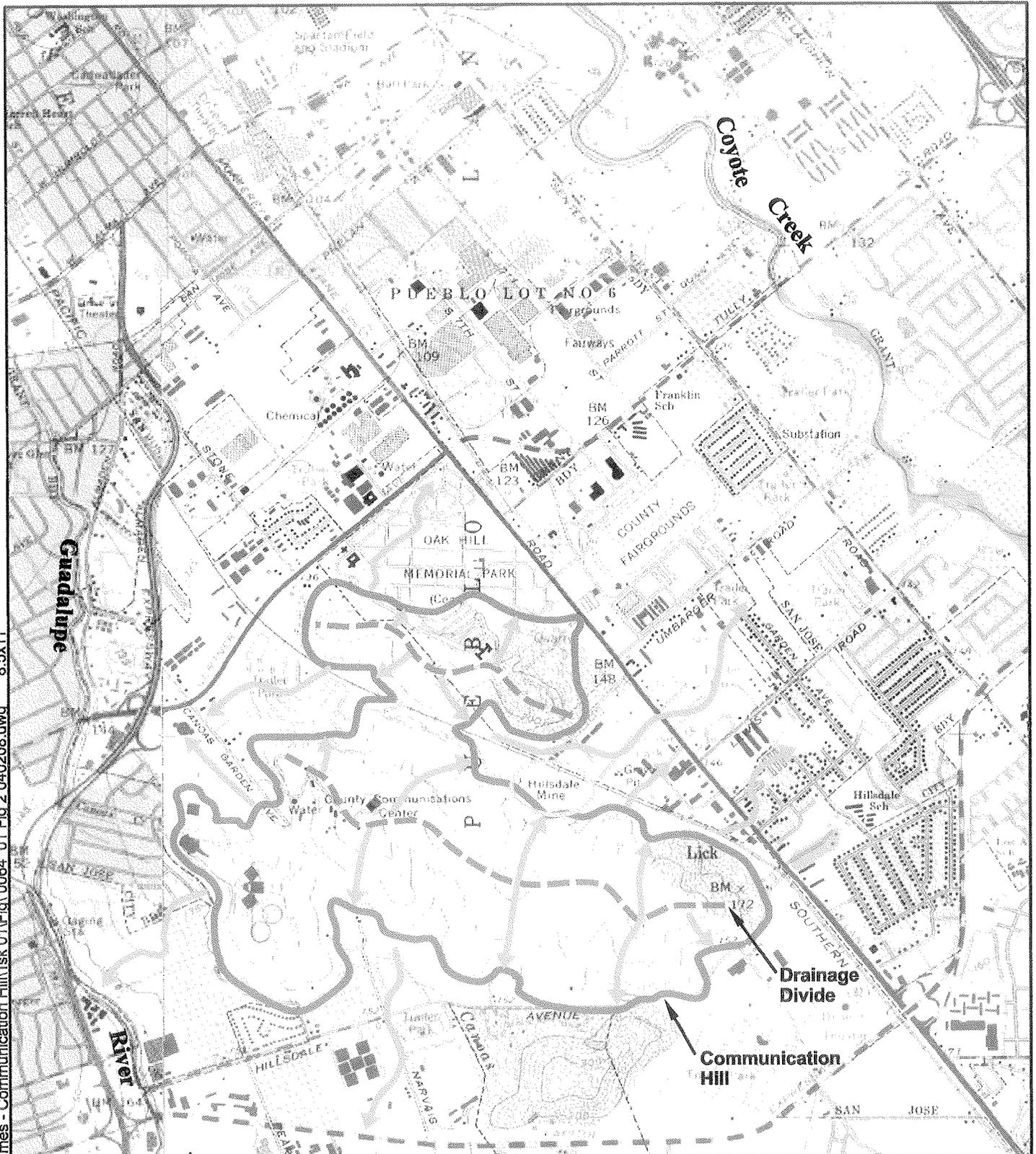
QUADRANGLE LOCATION



SCALE (FEET)

Vicinity Map	
Former Hillside Mine San Jose, CA	
Figure 1	Apr 09 2008
 STRATEGIC ENGINEERING & SCIENCE	

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Topographic Map with Surface Water Flow

Communication Hill
San Jose, CA

LEGEND:

→ Surface Water Flow Line

Figure 2

Mar 26
2008



STRATEGIC ENGINEERING & SCIENCE

LEGEND:

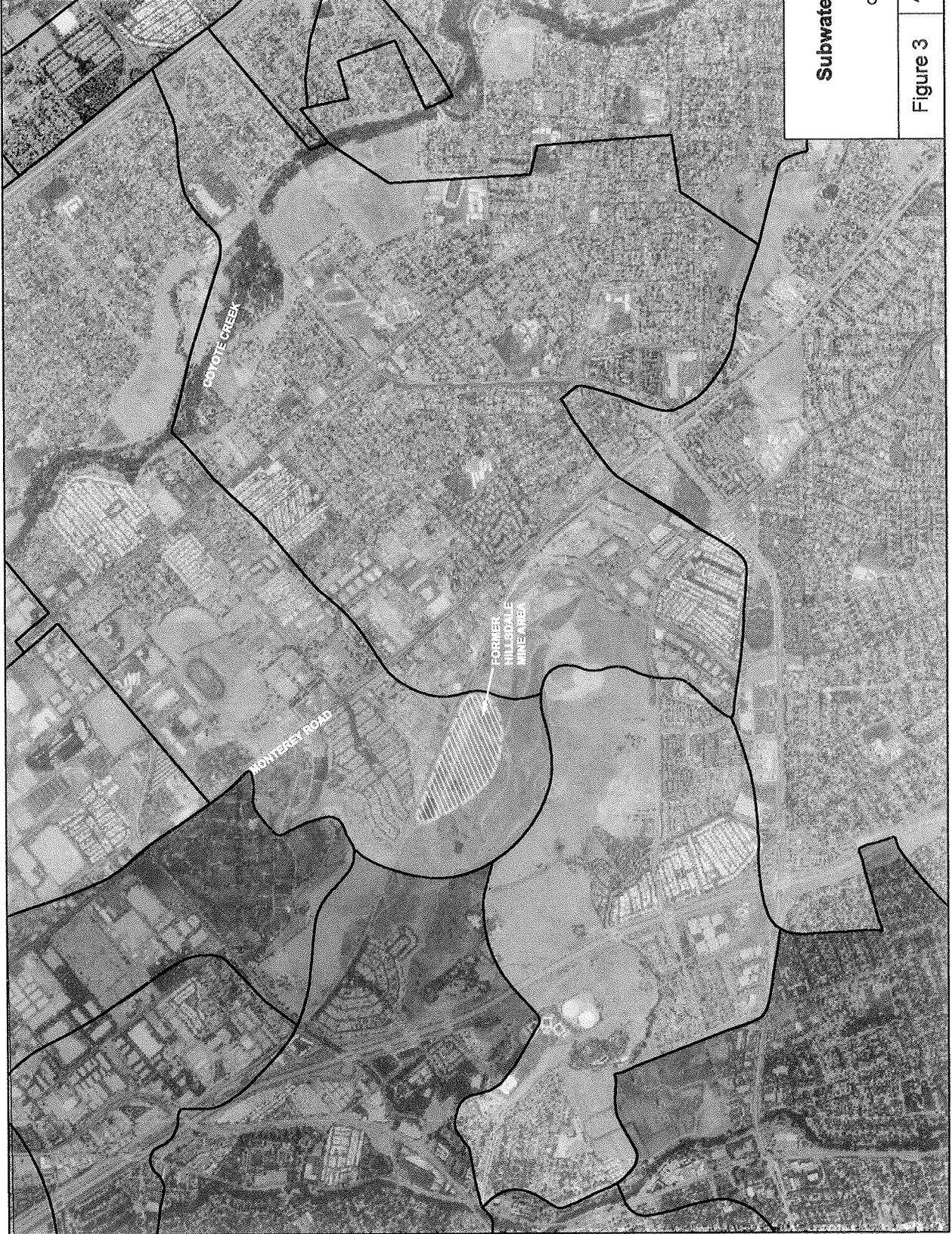
**SUBWATERSHED
CREEK**

- Cambias Creek
- Coyote Creek
- Guadalupe River
- Upper Silver Creek



SCALE (FEET)

Source: Santa Clara Valley
Water District, 03/01/96



Subwatershed Boundaries

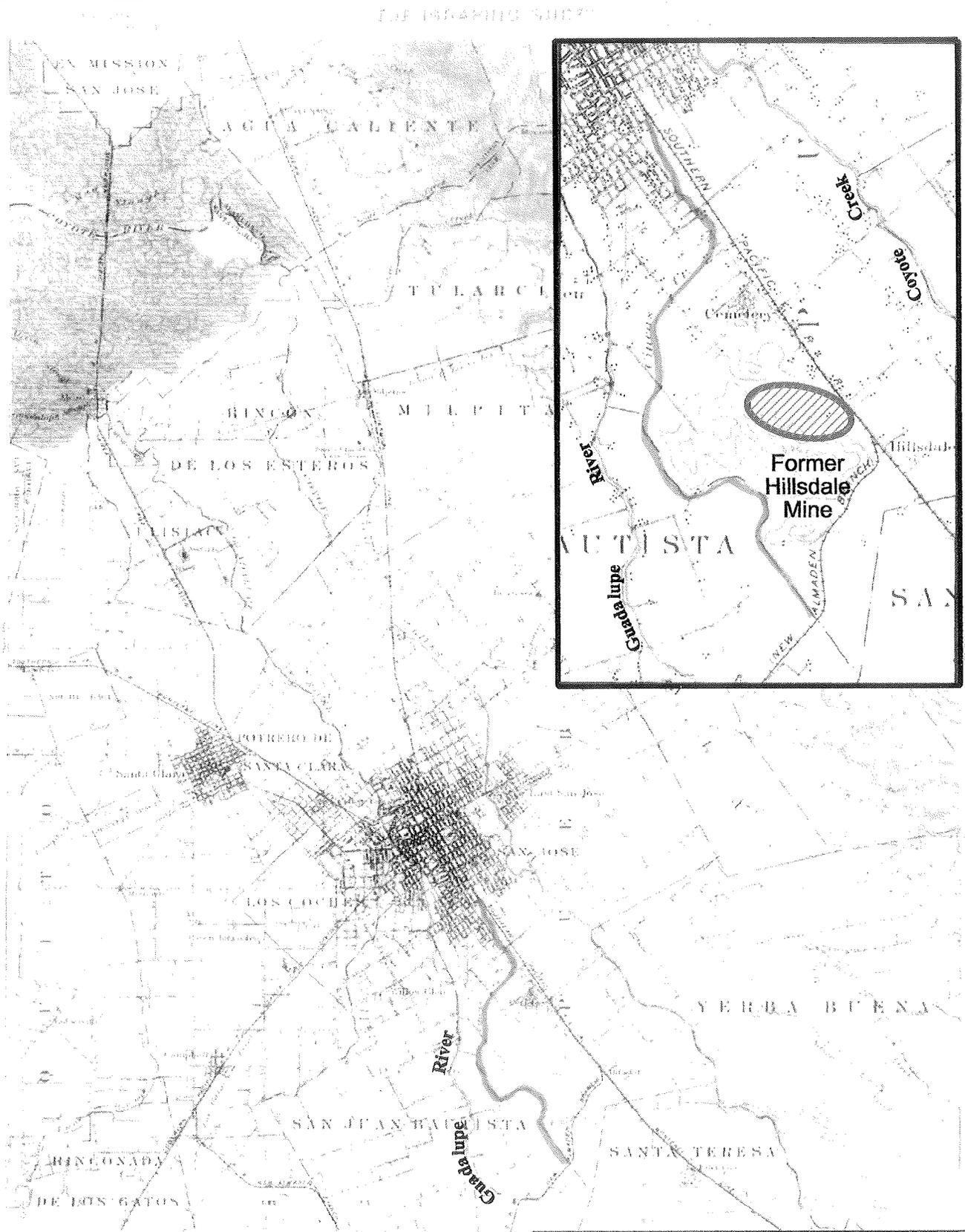
Communication Hill
San Jose, CA

Figure 3
Apr 02
2008



STANTEC ENGINEERING & SCIENCE

P:\CAD\0064 KB Homes - Communication Hill\Task 01\Fig 0064_01 Fig 4 040808.dwg 8.5x11



1899 USGS Topographic Map

San Jose, CA

Figure 4

Apr 08
2008



April 21, 2008

Carrie Austin
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: City of San José Comments on the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project Proposed Basin Plan Amendment

Dear Ms. Austin:

Thank you for the opportunity to comment on the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project Proposed Basin Plan Amendment (BPA) dated February 2008. The City of San José is a co-permittee of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and has had a proactive stormwater pollution prevention and control program since the first countywide municipal stormwater permit was adopted in 1990. San José staff has also been actively engaged in the development of the Baywide Mercury TMDL and has served on the Guadalupe River Watershed Mercury TMDL workgroup. San José supports the Proposed Basin Plan Amendment's coordinated watershed approach to addressing mercury impairment. However, within the Proposed BPA, San José requests clarifications and revisions to address the logistical and administrative challenges related to interagency cooperation, and to better align the implementation actions with the San Francisco Bay TMDL for mercury.

Load Allocations

The Proposed Guadalupe BPA states that the Baywide TMDL for mercury will address the Urban Stormwater Load Allocation, but then lists a mathematically calculated allocation for the Guadalupe Watershed, implying that that allocation must be met within the confines of the watershed. However, the last sentence in the BPA section entitled "Mercury Source Control Actions" states: "*Urban stormwater runoff implementation actions that reduce loads of mercury to San Francisco Bay will also count towards achieving the Guadalupe TMDL allocation to the urban stormwater source.*" We interpret this to mean that if large controllable urban stormwater sources found anywhere in the SCVURPPP County-wide Program area, the reduction of those sources can be counted toward meeting the urban stormwater implementation goals of the Guadalupe TMDL. If this is not the intent, then clarification of the language is needed.

Coordinated Watershed Monitoring Program

The October 15, 2008 date for submission of a coordinated watershed monitoring plan is impracticable. This deadline allows insufficient time to engage all possible partners, some of whom remain unidentified. The City requests that the deadline provide 24 months from TMDL adoption for submission of a coordinated watershed monitoring plan.

Special Studies

The Implementation Actions for Urban Stormwater Runoff state that *"Additionally, urban runoff Permittees shall participate in special study 3b during the second 10-year phase..."* but the wording describing that special study indicates that it is contingent on the results of study 3a. The City requests the wording in the Implementation Actions for Urban Stormwater Runoff be revised to reflect this contingency.

Consistency with Baywide Mercury TMDL

As written, the Guadalupe Mercury TMDL and Proposed BPA do not agree completely with the Baywide Mercury TMDL with respect to methods for the Urban Stormwater Runoff Source Category to demonstrate progress toward achieving interim loading milestones or allocations. The Waste Load Allocation (WLA) for SCVURPPP in the Baywide TMDL is 23 kg/yr and includes the mass of mercury attributable to urban stormwater runoff from the Guadalupe River watershed (7.2 kg/yr; calculated in the Guadalupe Mercury TMDL). To demonstrate progress toward attaining the WLA in the Baywide Mercury TMDL, SCVURPPP can use one of the following methods described in the BPA for the Bay:

- 1) *Quantify the annual average mercury load reduced by implementing (a) pollution prevention activities, and (b) source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.*
- 2) *Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations.*
- 3) *Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target (0.2 mg/kg).*

The proposed Guadalupe Mercury TMDL prescribes only a mercury concentration-based approach to assigning WLAs. The proposed WLA for urban stormwater runoff in the Guadalupe Mercury TMDL is 0.2 mg/kg in suspended sediment. This concentration-based WLA implies that only method #3 described above can be used to demonstrate progress in the Guadalupe Mercury TMDL. To maintain consistency with the Baywide TMDL, the City requests that Guadalupe TMDL either explicitly include or reference all three methods described above for demonstrating progress in the Guadalupe TMDL or explicitly defer to the Baywide TMDL on

Carrie Austin

City of San José Comments on the Guadalupe River Watershed Mercury TMDL Proposed Basin Plan Amendment

April 21, 2008

Page 3

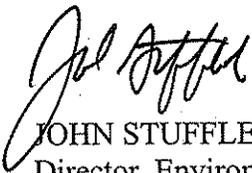
criteria and methods to meet the stormwater allocation.

Conclusion

San José is a proud and active steward of the environment, including our local creeks and the San Francisco Bay. San José's City Council has adopted a Green Vision, which sets forth a bold set of specific goals for advancements in environmental protection in our community. In keeping with that Green Vision, the City of San José looks forward to working with its citizens, local and regional stakeholders, and the Regional Water Board to find meaningful and feasible solutions to mercury pollution problems.

The City of San José incorporates herein by reference the comments submitted under separate cover by SCVURPPP. The City of San José acknowledges the time and effort that Water Board staff has dedicated to the production of the TMDL and Proposed Basin Plan Amendment. We appreciate your consideration of our comments and look forward to working cooperatively to address water quality issues within our jurisdiction and throughout the San Francisco Bay. If you have any questions, please contact Steven Osborn, Stormwater Program Manager, at 408-277-5635.

Sincerely,



JOHN STUFFLEBEAN
Director, Environmental Services



**Santa Clara Valley
Urban Runoff
Pollution Prevention Program**

Campbell • Cupertino • Los Altos • Los Altos Hills • Los Gatos • Milpitas • Monte Sereno • Mountain View • Palo Alto
San Jose • Santa Clara • Saratoga • Sunnyvale • Santa Clara County • Santa Clara Valley Water District

April 21, 2008

Ms. Carrie Austin
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

**Re: Proposed Basin Plan Amendment and Staff Report for the Guadalupe River Watershed
Mercury Total Maximum Daily Load (TMDL)**

Dear Ms. Austin:

This letter is submitted on behalf of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) regarding the *Proposed Basin Plan Amendment (BPA) and Staff Report for the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL)*, dated February 2008. The SCVURPPP has been actively engaged in the development of the Mercury TMDL for the San Francisco Bay and has participated on the Guadalupe River Watershed Mercury TMDL workgroup. We would like to thank you for this opportunity to comment on the BPA and Staff Report and commend you for your hard work. Our comments are focused on clarifications and requested revisions to the Staff Report and BPA that are needed to link the previously adopted and approved TMDL for Mercury in the San Francisco Bay and the up-coming Municipal Regional NPDES Permit (MRP) that will be issued to Bay area municipal stormwater programs in the near future.

Comment #1 - Consistency with the San Francisco Bay Mercury TMDL

The Basin Plan Amendment (BPA) for the San Francisco Bay Mercury TMDL¹ assigns load allocations (LAs) and waste load allocations (WLAs) to "Urban Stormwater Runoff" dischargers, including the SCVURPPP. The WLA for SCVURPPP in the Bay Mercury TMDL is 23 kg/yr and includes the mass of mercury attributable to urban stormwater runoff from the Guadalupe River watershed (7.2 kg/yr). To demonstrate progress toward attaining the WLA in the Bay Mercury TMDL, SCVURPPP can use one of the following methods described in the BPA for the Bay:

1. Quantifying the annual average mercury load reduced by implementing (a) pollution prevention activities, and (b) source and treatment controls;

¹ Adopted by the San Francisco Bay Regional Water Quality Control Board on August 9, 2006; approved by the State Water Resources Control Board on July 17, 2007; approved by the State of California Office of Administrative Law on November 7, 2007.

2. Quantifying the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations; and,
3. Quantitatively demonstrating that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target (0.2 mg/kg).

In contrast to the Bay TMDL, the Guadalupe River TMDL uses a mercury concentration-based approach to assigning WLAs. The proposed WLA for urban stormwater runoff in the Guadalupe TMDL is 0.2 mg/kg in suspended sediment. This concentration-based WLA infers that progress towards meeting the WLA will only be demonstrated using method #3 described above. To remain consistent with the Bay TMDL, we request that the Guadalupe River BPA either explicitly include or reference ALL methods described above.

Comment #2 - Sources vs. Pathways

Throughout the staff report and BPA, there are numerous references of mercury “sources” to the Guadalupe River. These sources include atmospheric deposition, background soil, and urban and non-urban stormwater runoff. For clarification, urban runoff is a transport pathway, not a source. The source of mercury found in urban runoff is air emissions that deposit onto watersheds and inappropriately discarded items or materials that contain mercury. It is important that these “true sources” of mercury be acknowledged in the Staff Report and BPA so as additional information on the proportion of mercury attributable to these sources become available, source controls should be required by the Water Board and implemented to reduce mercury-related impacts to the Guadalupe River and the San Francisco Bay. Therefore, we request that the term “source” be replaced by “source category” to better depict the multiple sources that collectively contribute the mercury in urban stormwater runoff.

In the same vein, we also request that the following language that is current contained in the Mercury TMDL for the San Francisco Bay also be included in its entirety under “Implementation Actions for Urban Runoff” in the BPA for the Guadalupe River TMDL:

Urban runoff management agencies have a responsibility to oversee various discharges within the agencies’ geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an urban runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Within the jurisdiction of each urban runoff management agency, Caltrans is responsible for discharges associated with roadways and non-roadway facilities. Consequently, Caltrans shall be required to implement the following actions:

- I. Develop and implement a system to quantify mercury loads or loads reduced through control actions;*
- II. Prepare an annual report that documents mercury loads or loads reduced through control actions; and,*
- III. Develop an equitable allocation-sharing scheme that reflects Caltrans load reduction responsibility in consultation with the urban runoff management agencies, and report the details to the Water Board. Alternatively, Caltrans may choose to implement load reduction actions on a watershed or regionwide basis in lieu of sharing a portion of an urban runoff management agency’s allocation. In such a case, the Water Board will consider a separate allocation for Caltrans for which they may demonstrate progress toward attaining an allocation or load reduction in the same manner mentioned previously for municipal programs.*

Comment #3 - Consistency with the Municipal Regional Permit

The SCVURPPP supports the concept of developing a “regional monitoring collaborative” described in the Municipal Regional NPDES Permit Draft Tentative Order (Draft TO), dated December 14, 2007. However, it is unclear whether the reference to a “coordinated watershed program” in the Implementation Section of the Guadalupe River BPA is referring to the same concept. If these two concepts are one in the same, we request that the due date for submittal of a coordinated watershed monitoring plan (currently October 15, 2008 in the BPA) defer to the date eventually included in the adopted Municipal Regional NPDES Permit. If the concept is different than the one included in the Draft TO, we request that language providing additional clarification be included in the Guadalupe River BPA.

Thank you again for the opportunity to comment on the Staff Report and proposed BPA. In addition to the comments submitted herein, the SCVURPPP also supports and incorporates by reference the comments submitted by the Santa Clara Valley Water District (SCVWD) and the City of San Jose.

Please contact me at (510) 832-2852 if you have any questions regarding the comments or requested changes.

Sincerely,

Originally Signed By

Adam W. Olivieri, Dr.PH, P.E.
SCVURPPP Program Manager

cc: Bruce Wolfe
Tom Mumley
SCVURPPP Management Committee

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
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TTY (916) 653-4086



*Flex your power!
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April 21, 2008

Ms. Carrie Austin
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
By e-mail: caustin@waterboards.ca.gov

Subject: Guadalupe River Mercury TMDL and Amended Water Quality Objective

Dear Ms. Austin:

We appreciate the opportunity to provide comments on the Staff Report and Proposed Basin Plan Amendment implementing the Total Maximum Daily Load (TMDL) for Mercury in the Guadalupe River Watershed.¹ The Department supports the overall objective to protect the environment and achieve the best possible water quality by reducing mercury in waters of Guadalupe River Watershed. However we have several concerns after reviewing the Proposed Basin Plan Amendment and accompanying Water Board staff report.

Our comments are attached. We are hopeful that Board would address the issues raised in this response prior to adopting above Basin Plan Amendment. If you have any questions, please call Jagjiwan Grewal of my office at (916) 653-2115.

Sincerely,

A handwritten signature in cursive script that reads "Joyce Brenner".

JOYCE BRENNER
Acting Office Chief
Stormwater Program Implementation

Attachment

¹ Linked to: http://www.waterboards.ca.gov/sanfranciscobay/press_room/announcements.shtml

Attachment

Comments on Guadalupe River Mercury TMDL and Amended Water Quality Objective

1. Sources of Mercury in the Watershed

The TMDL for Mercury in the Guadalupe River watershed is intended to address mercury in the watershed that originated primarily from mercury mining activities. Stormwater runoff from the Department right-of-way is not a significant source of mercury in the watershed, and residue from mining activities has not been detected on the state highway right-of-way. Please re-evaluate the TMDL and ensure that this is properly considered when determining loads from sources and to develop the most appropriate implementation activities. The staff report states:

The source control and pollution prevention actions required by the San Francisco Bay mercury TMDL for the urban stormwater runoff source are anticipated to be sufficient to attain the allocation for discharges to waters of the Guadalupe River watershed. [Page 9-12 of the staff report]

The above monitoring requirements [from the SF Bay TMDL] (...) and annual reporting requirements are sufficient for the first 10-year implementation phase of the Guadalupe River watershed mercury TMDLs. [Page 9-13 of the staff report]

The Department is concerned that there is not enough information to fully understand the mercury discharge problem and to ensure that the implementation actions will achieve the required effect. Please include a thorough discussion of these issues and, particularly, how the urban stormwater runoff allocation of 0.2 mg/kg in suspended sediment will achieve the water quality standards for the river. We suggest that this TMDL address the issues related to discharges of mercury from mining activities, and that mercury from urban runoff continues to be addressed by the San Francisco Bay Mercury TMDL. The San Francisco Bay Mercury TMDL provides greater flexibility to the Department and other municipal dischargers in how to address this TMDL. This flexibility is crucial to allow for implementation of effective solutions to meet water quality standards in the river.

2. Background Soil Concentrations

For the Guadalupe River TMDL, the staff report proposes to allocate mercury by the proportionally equivalent concentration. The recommended allocation to urban stormwater runoff is 0.2 mg/kg in suspended sediment (annual median, dry weight). More explanation is needed to clarify how this amount accounts for background soil concentrations. The TMDL appears to assume that the background soil concentrations are approximately 0.06 ppm based on the Santa Clara sampling of agricultural areas. We believe that the background assumptions may be low, based on a University of California, Riverside (UCR) compilation of trace element concentrations in 50 different benchmark soils from throughout the state, (*Background*

Concentration of Trace and Major Elements in California Soils, G. R. Bradford, et al., 1996¹). The report from UCR showed a statewide geometric mean concentration of mercury in uncontaminated soils of 0.2 mg/kg and a relatively wide range from a minimum of 0.1mg/kg to a maximum of 0.9 mg/kg. Since the TMDL watershed includes closed mercury mines, it is likely that mercury is naturally elevated in soils in certain locations. As a result, it is reasonable to expect that in some areas, dust from local soils could cause the roadway sediment to exceed the allocation of 0.2 mg/kg in suspended sediment. Before proceeding with the proposed allocations in this TMDL, it is essential to determine the concentrations currently present in roadway and urban runoff. This assessment is an important factor in the evaluation of the potential impacts of this TMDL.

In addition to soil concentrations, aerial fallout potentially contributes mercury throughout the watershed. Unfortunately, this source is not easily controllable. Research conducted by the Department of Environmental Science and Policy of the Tahoe Research Group at Lake Tahoe has found that the upper sediments in the lake have concentrations of mercury averaging 0.191 ppm³. This is a five-fold increase over the mercury present in the local bedrock. This is essentially the same concentration as the sediment goal for San Francisco Bay. The source of the mercury in Lake Tahoe is presumed to be direct atmospheric deposition primarily from regional and global sources. Mercury tends to preferentially settle out at high, cold elevations, so atmospheric deposition in coastal areas may be less. However, the Tahoe data indicates that atmospheric deposition is widespread and potentially significant². Atmospheric deposition of “global” mercury or aerial fallout of local soils with elevated mercury may account for a significant source of mercury from roadways.

On a watershed basis, the load from urban runoff is likely to be insignificant compared with those from mining wastes. The Department believes that focusing on the waste from mining activities would be the most beneficial strategy to attain the water quality standards.

3. Source Control

In section 8.3 *Urban Stormwater Runoff Total Mercury Allocation*, the Staff Report identifies the possible sources of mercury in urban runoff:

The mercury in urban stormwater runoff results in part from controllable urban sources, such as improperly discarded fluorescent lights, electrical switches, thermometers, and other mercury-containing devices, and from historical and ongoing industrial activities (SFBRWQCB 2004.) Atmospheric deposition and

¹ Posted at: <http://www.envisci.ucr.edu/downloads/chang/kearney/kearneytext.html> See Table 2

² Posted at: <http://trg.ucdavis.edu/research/annualreport/contents/lake/article11.html>

naturally occurring mercury in background soils, which are assumed to be difficult to control, also contribute to the mercury in urban stormwater runoff. [Page 8-11 of the staff report]

The opportunities for reducing loading from the Department right-of-way are very limited, should this become necessary to meet the allocations assigned to urban runoff. Therefore, the Department believes that source control options should be given greater consideration in this TMDL.

4. Department Total Drainage Area

Table 7-B in the Basin Plan Amendment includes the sources, load allocations (LAs), and waste load allocations (WLAs) for the Guadalupe River Mercury TMDL. The table assigns a wasteload allocation to urban stormwater runoff dischargers and lists eight entities; however the Department is not included. Note C for this table states that the allocation for urban stormwater runoff includes the Department roadways and facilities. The note also states that the allocation is proportionally equivalent to the mass allocation. The Department has 1990 acres of right of way in the watershed. The total watershed area is 102,400 acres so that the Department accounts for 1.9% of the total watershed area. Please revise the information presented in this section and clarify Table 7-B to clearly state what is intended in the notes.

5. No identified technology for achieving the stormwater allocations

The staff report recommends an urban stormwater runoff allocation of 0.2 mg/kg in suspended sediment. Unfortunately, no clearly identified and available technology capable of reducing runoff sediment to this concentration exists. Capturing all stormwater flows and directing them to treatment facilities such as filtration units could potentially meet the mercury removal requirements, but no information indicates that this approach would be effective at achieving the required removals at an optimum cost. The Department requests that the Regional Board discuss feasible alternatives to meet the runoff allocations and provide cost estimates for them, including the costs of constructing retrofit BMPs. Please also consider including a reduction-credit purchase program, which could provide benefit.



NEW ALMADEN
QUICKSILVER COUNTY PARK ASSOCIATION

P.O. Box 124, New Almaden, CA 95042

April 21, 2008

Carrie M. Austin, P.E.
Project Manager - Hg TMDL in Guadalupe
SFB Water Board
1515 Clay St., # 1400
Oakland, CA 94612

Dear Ms. Austin,

As a resident of New Almaden, California, and a Board member of the New Almaden Quicksilver County Park Association, I am pleased to provide the Regional Water Quality Control Board, San Francisco Bay Region ("the Board"), with comments regarding the Guadalupe River Watershed Mercury Total Maximum Daily Load Report ("Report") dated February 2008 and the proposed Basin Plan Amendment ("Amendment") dated February 2008.

In general, comments in my letter of August 17, 2006 have been ably addressed. The main issues are now implementation and the Amendment. The Amendment needs to be reworked. It is a good first attempt, but the timing and content must be questioned. *Could the Board postpone the Basin Plan Amendment review until after the TMDL Report is finalized and approved?* The community requests that the Amendment be re-drafted and issued for review after the Report is finalized and more is known about the specific implementation actions the responsible parties will undertake. The concern here is to take pragmatic action and avoid further studies that satisfy scientific inquiry but have no real value regarding taking action to remove pollution entering the system. *Are there any programs that can provide money for source control measures for private homeowners?*

The mercury problem is regional and a societal issue that should not unreasonably burden any one entity or citizen. The Amendment as currently written is causing a great deal of local concern and confusion regarding what exactly it means for the responsible parties and for local homeowners and residents, especially the reference to issuing 13267 letters. Although it is the intent, it is not clear that the Amendment proposal is to address upland mining source areas before undertaking downstream removal actions. The Amendment does not seem to track the Report content as well as it could. It appears to contain some new approaches, deadlines, recommendations and requirements, or at least prior ones but in such different form as to appear to be new concepts beyond those of the Report. *A particularly important question is the issue of how remedial actions such as those already completed and to be completed will receive "load allocation credit" under the current scheme?*

The TMDL development illuminated the fact that mining waste is obvious in the field and sampling is not required to locate it. If it is unstable and prone to erosion, it should be stabilized. Unfortunately, the Report and Amendment allude to further studies to define emissions and prescribe controls. The Report and Amendment seem to struggle to maintain a narrative-standard while suggesting numeric targets, yet the upland target is unreasonably low and begs the question of *why a target is needed for sediments when the only practicable remedial measures are erosion control, mine waste capping, and reservoir stratification control- measures that have already been successfully used in the watershed?*

The numeric sediment targets for upland areas must be questioned. This is not a new concern, yet the targets remain unchanged. The sediment quality goal is not a consensus target because not all agree and it is not empirical because it relies on information from a completely different watershed with respect to urbanization, geology, and natural mineralization. It is inconsistent with the

natural background gradient to have sediment targets in the mining areas that are lower than sediment targets at the Bay. Soil samples collected at depth for the Jacques Gulch project might justify a reconsideration of the soil targets. *Would it not be wiser to delay an Amendment until the TMDL report is truly final and the sediment quality goals are truly consensus and differentiated between areas of mineralization and no mineralization?*

Regarding fish methylmercury, the Report demonstrates that the aquatic food chain is phenomenally efficient at bio-concentrating mercury. Some question whether there will ever be a reduction of fish tissue concentrations to levels below any threshold of no adverse effect. This is because, as the Report notes, the system already has large amounts of total mercury in it, both naturally occurring and from mining discharges. Equally important is the fact that the system is also being impacted with a growing invasion from the global atmospheric mercury pollution reservoir. Unfortunately, the Report and Amendment do not adequately address the issue of atmospheric invasion. *How exactly is atmospheric invasion addressed in the allocation scheme and Amendment?*

Because of the complexity of mining impacts, combining with atmospheric and non-mined but mineralized sediment impacts, it would be helpful if the Amendment were examined to be sure the intent of the Board is clear to a lay reader. *Could the Amendment be reworked to clarify the additional sampling that is proposed to identify areas of erosion that might be prioritized for control? Could it also be clarified that it is not the intent to assign numeric effluent limits to suspended sediment discharge, but rather to implement erosion control for the significant sources and to demonstrate effectiveness through proper installation and maintenance? What about priority based on whether the discharge is to a body of water with a known higher potential for methylation, all other factors being equal?*

The Report illuminated the tenuous nature of allocating load to accomplish the attainment of unimpaired water uses, mainly fishing, when the link between fish mercury concentrations and mercury sources is so uncertain. Not all of the mercury is due to mining waste, and not all forms of mercury behave the same with regard to the ultimate concern of methylmercury concentrations in fish. Atmospheric mercury is reportedly more bio-available than cinnabar. The Report illuminates that even small amounts of mercury can produce substantial amounts of methylmercury, if the right conditions are present. *Could the Report methodology for target setting and load allocation, and the Amendment be modified to address the different forms of mercury in pollution sources (atmospheric, process waste, unprocessed waste, water seeps and discharges) and their relative ability to be transformed to methylmercury in fish? Controls may be wasted on impressive loads of total mercury that ultimately matter less to fish targets than smaller amounts of highly transformable mercury.*

Finally, below are some comments specific to particular pages of the Report.

Page 2-3:

The second and third paragraphs contain redundant text.

Page 2-5:

There is an uneasy reality when fish from some reservoirs with little mining impact have unsafe fish methylmercury concentrations. *The Report implies that there will be opportunity to make adjustments for reality during the implementation phase, but how will this truly be the case if the targets will be codified in the Basin Plan and applied to the rest of the watershed, and the Basin Plan is difficult or at least takes some time to amend?*

Page 3-15-3-18:

At least in Almaden Quicksilver County Park, the areas of significant potential mercury spillage, furnace dust, and calcine dumps have all been capped. *Could the Report and Amendment*

have a mechanism whereby erosion and source control measures are recognized as an offset to a source allocations?

Page 3-16:

The peak concentrations in water are interesting, but the examples only serve to illuminate the extreme variability and therefore the highly uncertain targets of the TMDL.

Page 3-20:

It should be noted that although DTSC would have allowed limited removal and capping of hot-spots within the calcine waste piles, the County elected to completely stabilize and cap each pile, thereby addressing the issues of soil erosion and potential bioaccumulation of the eroded material. The next several paragraphs confirm this and contradict the statement that "the issues of soil erosion and transport of mercury to water bodies and bioaccumulation were not addressed." *Could the statement be clarified?*

Figure 3.10

This is not an accurate rendering of mercury concentrations remaining after cleanup. The concentrations were measured prior to remedial actions. Calcine piles on the figure were graded and covered with clean clay fill, or excavated and buried at an authorized engineered disposal site on Mine Hill. The Dames and Moore sampling was designed to investigate the soil and wastes most likely to pose a potential risk to park users and horses. The mines were never investigated to characterize the overall distribution of mercury in soils. The Guadalupe mine was not investigated at all, because it was a private landfill, not a public park. *Could this be noted somehow?*

I hope these comments are useful to the Board and the participants in the TMDL.

Sincerely,



Michael Cox

New Almaden Quicksilver County Park Association

Roberta Lamons, PhD
21661 Almaden Road
San Jose, Ca. 95120

April 21, 2008

Carrie M. Austin, P.E.
Project Manager – Hg TMDL in Guadalupe
SFB Water Board
1515 Clay St. #1400
Oakland, Ca 94612

Dear Ms. Austin,

I just finished the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project PROPOSED BASIN PLAN AMENDMENT report by the California Regional Water Quality Control Board, San Francisco Bay Region of February 2008, and I am extremely upset with its unprofessional, unscientific, and erroneous nature. The worst problems are:

1. It does not include the scientific information we learned at the conference, particularly the statement that "deposition from the atmosphere is minimal relative to other loads in the watershed." (BPA-6) Sarah Rothenburg, UCLA, SFEI, said that the Hg elemental in the atmosphere is more available to methylation and comes from refineries and the cement plant at Permanente Creek. Don Yee said that the atmospheric mercury coming from China was enough to account for all the methyl mercury in the bay, and that the Chinese could be producing twice as much by next year. It also ignores the map showing bioaccumulation of methyl mercury in small fish is far lower at the outlet of the Guadalupe watershed than at many urban run-off sites.
- 2.a It does not identify species of mercury as bio-available. Cinnabar, HgS, is not bioavailable, and elemental mercury in drops too large to be airborne is only slightly bio-available, and then only in anaerobic environments where there are sulphur reducing bacteria.
- 2.b It does not include any references to data it cites, i.e., fish in the Guadalupe Reservoir have 20 times the maximum dose of mercury acceptable.(BPA-5). Where did that come from? It was not reported at the conference!
3. It does not give property owners along the creek time to respond to itself or to its further requirements.
4. It uses inflationary language, i.e. "mercury laden sediments" (BPA-5) when it should say mercury species bearing sediments. Also, "waters impaired by mercury" when it should say waters containing mercury species-bearing sediments.
5. It does not mention sulphur reducing bacteria as a requirement for methylation.

6. It proposes a review of itself after ten years. That is far too long, and out lasts many of its own deadlines. The deadlines are unrealistic, especially the ones for property owners along Los Alamitos Creek to respond with a mass of data by October 2008.

Each of these reasons is enough in itself to reject the validity, usefulness, and legality of this report.

Regards,

Robbie Lamons, PhD, Structural Geologists

Mike Boulland
P.O. Box 5
New Almaden, Ca. 95042

408 268 2703
Mikeboulland@yahoo.com

April 21, 2008

Carrie M. Austin, P.E.
Project Manager – Hg TMDL in Guadalupe
SFB Water Board
1515 Clay St. #1400
Oakland, Ca 94612

Email: CAustin@waterboards.ca.gov

Dear Ms. Austin,

As a property owner in New Almaden, I am delighted to have the opportunity to present my remarks about the Regional Water Quality Control Board, San Francisco Bay Region, with my comments regarding the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project, Proposed Basin Plan Amendment dated February 2008.

I recognize that the Water Quality Objective 3.3.21 OBJECTIVE FOR SPECIFIC CHEMICAL CONSTITUENTS is set to *“protect our water sources from containing concentrations of chemical constituents in the amounts that adversely affect and designated beneficial use”* will help reduce the selected toxic pollutants from our surface waters. Such an objective, I feel, will protect the health of our natural wildlife and human watershed population.

Over the last several years tremendous amounts of contributors have documented and made scientific reports about the water quality in our Guadalupe Watershed. I recognize these report statistics have been used to establish the above objective.

I am delighted to read that the Water Board encourages all parties to participate cooperatively as a solution to resolve the problem. I am impressed with the suggestion of forming a *“special district”*. I suggest, in order to keep the community’s present support, this TMDL report needs to address clearly the development of a special utility district to help provide funding. Having this special utility district will help open communication for all responsible parties to work together to resolve the cleanup issues.

It is from this view point that I request clarification of the following issues:

- 1) The role of individual homeowners is not clear in Phase I. Does *“completing studies to reduce discharge of mining waste accumulated in Alamos Creek”* as mentioned in the Implementation Plan on BPA-9 includes downstream properties in the Phase One?

- 2) Could this document make a clearer notation found on BPA-9 as to where the location of the reference of the *Mercury Source Control Actions* and the *Monitoring Programs* may be read? Could this source give an estimate of the cost needed to monitor or control for the average property owner? This information can be useful to encourage the responsible parties to work together to form a special district.
- 3) In section BPA-10, what amount of sediment mercury fines in the water flow down Los Alamitos Creek would trigger the downstream projects to be undertaken before Phase II would be implemented? Would the legacy mercury sources in the up-stream watershed flow have to be at a .2 mg mercury per kg erodible soil fine levels to activate the trigger of statement of *"mercury discharges from upstream will be eliminated or significantly reduced before downstream projects are undertaken"*? Would this trigger be enforced at a higher sediment level before the Phase II implementation date of 2017?
- 4) Also, in section BPA-10, please clarify the nonurban storm water runoff monitoring along the downstream properties along Los Alamitos Creek. Would the legacy mercury sources in the up-stream watershed have to have to have storm water runoff flow and blue line creek runoff at a .1 mg mercury per kg suspended sediment level to activate the trigger of the statement *"mercury discharges from upstream will be eliminated or significantly reduced before downstream projects are undertaken"*? Or would the trigger be at a higher sediment level?
- 5) Please clarify BPA-12 #2 if a site investigation, monitoring, creek bank stability and habitat restoration projects will be required to be completed to *"Develop plans and schedules to control mercury discharges to receiving waters..... Within the first eight years of Phase 1"* or before the stated date of 2017?
- 6) I understand the center of the Los Alamitos Creek may have depositional mercury deposits. After these areas have been identified through testing, will each of the downstream property owners be forced to continue to monitor and test the water flow through their property? Could this testing be done using cooperative testing sites?

Suggestions

- 1) I believe a plan needs to be designed to remove the depositional deposits. I feel this will accomplish more effectively and economically the Water Quality Objectives found in this TMDL document.
- 2) I feel the schedule of due dates of 2008 and 2009 are inappropriate dates for Phase II projects. I am concerned that these dates have not been communicated to the Los Alamitos Watershed community and residents. I feel more information needs to be presented to the community before this document establishes these objective dates.
- 3) Most of all, I propose the Water Quality Board to work with the community to communicate workable a plan that is acceptable before any deadline dates be set into legal code.

Everyone in my community wants to have clean safe water. I strive to keep our creek healthy and environmentally friendly with River Clean-up Days and Earth Days. Our residents turn out in huge numbers to volunteer to keep Los Alamitos clean and pollution free. I have successfully established a cooperative base to communicate and work with the various public agencies to help them keep the creek free of debris.

In closing I suggest, in order to continue to keep the community's present support, this TMDL report needs to address clearly the development of a special utility district to help provide funding support sources. Having this special utility district will help open communication for all responsible parties to work together to resolve the cleanup issues.

Thank you for this opportunity to allow me to comment and participate in the TMDL process.

Sincerely,

Mike Boulland

**Amanda Dill
Frederick Dill
21550 Almaden Road and 21560 Almaden Road
San Jose, CA 95120**

April 21, 2008

Carrie Austin, P.E.
Project Manager – HgTDML in Quadalupe
SFB Water Board
1515 Clay St. # 1400
Oakland, CA 94162

Dear Ms. Austin:

We are homeowners with property abutting Los Alamitos creek in the unincorporated part of Santa Clara County. We have heard indirectly about a process which might require homeowners to do testing on their land and perhaps sometime in the future be responsible for remediation of sources of mercury contamination, if such are found.

We also have been told that public comment is due soon; this seems unusual since the affected public have not been informed of this. The only public information to date involves an upcoming remediation within Quicksilver Park and perhaps some work within Almaden Reservoir.

The property owners along the Alamitos Creek (and for that matter all the tributaries feeding from the mining zone into the watershed) own property which was initially uncontaminated – there is no evidence that significant contamination existed before the mining operations started in the mid-1800s. It has been contaminated by the acts of others, which historically involved the mining company and more recently the effects of remediation (which, while perhaps beneficial in the long run, will likely release trapped contaminants). The contamination downstream, from the mines themselves and from the attempts at remediation, was spread by runoff and by flood.

It is our understanding that the planned remediation within Quicksilver Park will significantly increase contaminated runoff for some time. How can that not further contaminate all properties along the creek?

We have been told that property owners may be responsible for testing and evaluating contamination on their individual properties. This is something that the average homeowner is totally unprepared and untrained for. There was no warning given to people buying residences; there were no pre-sale engineering reports suggesting a problem. There has been no public warning. Since the contamination was completely due to upstream activities, any testing and costs clearly should be covered by the responsible parties or their heirs.

The same holds for remediation. At the present time the rules for what can be done at the creek edge quite stringent and at times conflicting. Fish and Wildlife insist upon absolutely no disturbance. The local water department wants invasive species and potential blockage by downed trees removed for flood reasons. In some areas, the heirs to the mining company (now the county of Santa Clara) still have the right to placer mine in the creek bed. Thus: our property extends to a creek but we have no control over what happens there. We have neighbors who, when asked permission to remove residual spent ore that had washed into the creek banks on their property, were refused. They were told they could not alter the creek banks.

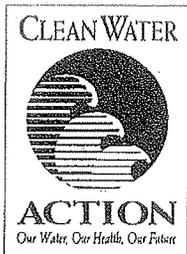
If plans are to place responsibility on every property owner abutting a creek or tributary, then that information needs to be provided to each and every one of them in timely fashion and in plain language that a layman can understand. We are concerned that such an action may produce a large class action lawsuit from the affected parties as well as a vehement input to our political process.

Sincerely,



Amanda Dill, MD

Frederick Dill, PhD



CLEAN WATER ACTION

April 19, 2008

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Transmitted via electronic mail to caustin@waterboards.ca.gov

Re: Basin Plan Amendment/TMDL for mercury in the Guadalupe River

Dear Chairman Muller and Board Members Elishu, McGrath, Peacock, Singh, and Young,

On behalf of Clean Water Action and our 20,000 California members, I would like to thank the Board and its Staff for this opportunity to share our thoughts on the proposed Basin Plan Amendment, TMDL, and implementation plan (hereafter referred to as the TMDL) to address mercury contamination in the Guadalupe River watershed. Clean Water Action staff have followed the development of this TMDL for 4 years. We are impressed by the technical expertise brought to this project by Regional Board staff, and our objective has been to share our environmental justice experience and grassroots perspective in order to ensure that this plan will meet the needs of both the watershed and the public.

As the TMDL states, the ultimate goal is to allow the watershed to meet its beneficial uses. It must be remembered that there is no caveat as to the degree to which beneficial uses are to be restored; the Clean Water Act does not stipulate that such uses can be only partially protected or be available to those who only enjoy the watershed's benefits occasionally. This means that if fishing is a beneficial use, as it is for the Guadalupe River, then the goal should be to make the water and fish safe for both those who fish occasionally and those who fish on a more regular basis as a form of recreation, because of cultural tradition, and/or out of economic need.

There are a number of aspects of the TMDL that we support, but we are concerned that its fundamental goal falls short of being protective of fishing communities and there are no requirements to ensure that subsistence fishers will not continue to be exposed to mercury at dangerous levels during the time it will take to lower mercury, especially methylmercury levels. We believe that the TMDL can be easily revised to correct these failings and to ensure that it allows the Board to meet its responsibility of protecting both our water resources and our people.

Positive Features

We strongly support the fact that the TMDL addresses both total mercury and methylmercury -- that is, the loading of total mercury to the streams and reservoirs within the watershed and the methylation of mercury within the streams and reservoirs. While lowering total mercury levels is ultimately the way to ensure that there is no opportunity for it to become bioaccumulative under natural conditions, by investigating and implementing strategies to reduce methylation will serve to protect fishing communities and wildlife in a more accelerated period of time.

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Action is the key to remediating our watersheds and we commend the Regional Board and Santa Clara Valley Water District for not waiting for a finalized TMDL before moving ahead with activities that both reduce the overall flow of mercury into the Guadalupe River and potentially interfere with methylation. The cleanup of mine areas is on a more accelerated schedule than the 2006 Project Report. Also, since 2006 more encouraging information on methylation has come to light as the result of a pilot program through which decreasing oxidation in the hypolimnion was implemented.

In addition to specific actions to clean up mine areas, the TMDL includes specific controls in the implementation plan to stop erosion along the stream banks. These controls will decrease the continued flow of mercury from natural deposits or deposits resulting from human activities. However, we are disappointed that such measures for mine waste in Alamitos Creek, which is severely contaminated, are "suggested" rather than required and would suggest that such actions be mandated.

Assimilative Capacity

While the investigations into manipulations of reservoir ecology and bioaccumulation up the food chain is to be encouraged, we are unclear as to why this is seen as a means of increasing assimilative capacity that may lead to revising load allocations down the road. There is no assurance that methylmercury controls will be permanent. Consequently, we see them as a useful tool to protect fishing populations and wildlife, but the threat of methylation will continue as long as mercury, in both its bioaccumulative and inorganic form, continues to contaminate the watershed. Furthermore, the Guadalupe River has been assigned a major reduction in its total mercury load in the San Francisco Bay mercury TMDL (from 92 kg/ann to 2 kg/ann), which will require continued reductions from all sources.

Ultimately the Clean Water Act aims at eradicating all discharges into U.S. waters (i.e., zero loads). While such a goal may be impracticable at this time, federal law surely indicates the need to establish and enforce as stringent reduction requirements as possible from all sources. Thus we would not support lowering load allocations as methylation is reduced.

Inadequate Fish Tissue Target

We strongly oppose the selection of a fish tissue target of 32 g/day (one meal per week) for the human population. This decision has been made without investigating actual fishing practices in the region and is therefore negligent to the possibility that some parts of the local population may catch and consume significantly higher levels from the watershed. In fact, Staff states that this fish tissue target may not protect all fishers in all seasons. While we appreciate their candor, the goal of this TMDL is unacceptable in that it allows for a limited clean up goal despite the Clean Water Act's clear direction that all beneficial uses be restored. More importantly, the one meal a week fish tissue target does not consider the environmental justice ramifications of impacts on disadvantaged communities and/or communities of color with strong fishing traditions.

Not knowing what actual fishing rates are does not mean that they are not significant and puts the Board in the position of not being able to correctly characterize the beneficial uses of the watershed and thereby restore them in accordance with the law. In fact, the diverse nature of the local population, including but not limited to Southeast Asians who are often linked to high fish consumption rates and fishing practices, indicates the need to investigate what is actually happening in the watershed.

Fishing practices should be characterized in terms of where people are fishing¹, what species of fish they

are catching and consuming, the level of fishing and consumption that is occurring, and the attitudes about fishing and eating habits within the diverse communities in the region. Consequently, the TMDL should include a plan to investigate fishing practices in the watershed, and in the interim establish at the very least an objective in line with U.S. EPA's target of 142.4 grams/day, which would allow 4 to 5 meals a week to protect subsistence fishers.

Any such study will be most effective if it integrates input from local community groups who work with fishing populations. Potential models for studying fishing practices could include actually contracting with a variety of community groups to collect information, as well as requirements for permittees to facilitate studies, and working with county and state health departments. We recommend that the Board look at how the California Department of Public Health has worked with local community groups to organize focus groups and other strategies to collect information on fishing habits in the Delta, as well as CalFed's Fish Mercury Project, which integrated community input on where and what people fish into the development of fish monitoring programs.²

Lack of Exposure Reduction Measures

In its resolution 2005-0060, the State Water Resources Control Board directed the San Francisco and Central Valley Regional Boards "to address public health impacts of mercury in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of and mitigate health impacts to those people and communities most likely to be affected by mercury in San Francisco Bay-Delta caught fish, such as subsistence fishers and their families."³ While the resolution did not specifically require such efforts in other regional TMDLs, the Regional Board has understood the State's intent to protect subsistence fishers by including such measures in its PCBs plan. Furthermore, the State Board did indicate that the Board coordinate its efforts regarding the Guadalupe River TMDL, as well as the Central Valley's methylmercury TMDL for the Delta with that of San Francisco Bay.

For these reasons, we are confused as to why no such exposure reduction requirements are included in this TMDL. This lack seems contrary to the understanding that protecting fishers is a priority which is reflected in the plan's activities to reduce methylmercury. Again, we urge that the TMDL include a study of actual fishing practices in the Guadalupe watershed among the diverse cultures that inhabit the region. If the findings of such a study indicate significant subsistence fishing linked to cultural practices and/or economic need, then community driven exposure reduction strategies should be developed and implemented, and dischargers should bear responsibility to facilitate such programs through their permits as in the San Francisco TMDL. Furthermore, while risk communication can be a part of such programs, the State Board's resolution makes it clear that strategies must go beyond fish advisories and education, and incorporate actions that will lower "actual exposure" and "mitigate health impacts" in the most effected communities.

Again, such programs should be community driven so that they accomplish the following:

- Accurately identify those communities/community members who most need alternatives to eating highly contaminated fish,
- Work with communities to develop strategies to reduce exposure to mercury and mitigate health impacts (these may vary from community to community),
- Implement appropriate outreach and exposure reduction actions with/through local community groups when possible.

Daily Loads

We believe that not establishing daily loads and instead averaging mercury levels over the year puts fishing communities and wildlife at risk of high exposures during the seasonal fluctuations related to weather. As already mentioned, Staff readily admits that subsistence fishers will not be protected at certain times because of seasonal influences. This is especially alarming given the irreversible impacts mercury can have on brain development in fetuses and small children who are exposed either directly or through their mothers. For this reason, we urge the Board to revise the proposed TMDL to include daily loads, as is in keeping with Clean Water Act requirements.

Air Deposition

While the TMDL does indicate the need to address air deposition, it lacks a clear plan on how to do so effectively and it is not clear that its load allocation is based on the most important potential sources in the watershed. It relies on limited data from Moffett Field which was used in the San Francisco Bay mercury TMDL. We are concerned that there is little analysis on potential impacts from other sources in or near the watershed. For instance, a 2001 study by the San Francisco Estuary Institute demonstrated that the Hanson Permanente Cement Inc. Portland cement facility in Cupertino contributes significantly higher particulate and reactive gaseous mercury levels to the air than Moffett Field and is located close to the Guadalupe watershed. Furthermore, there is evidence that such sources are more subject to methylation⁴.

We are concerned with limiting action on air deposition into the Guadalupe watershed not only because it will ultimately limit the restoration of the watershed as a whole, but because of the impacts on areas not directly impacted by the mines, such as Lexington Reservoir. These waters are not appropriate models for safe fishing because their mercury levels are higher than what is protective for subsistence fishers and need to be addressed. Without an aggressive plan to address local air sources, this cannot occur and fishers will continue to be at risk. Consequently, we strongly urge the Board to incorporate the following into the Guadalupe TMDL:

- Inventory all regional aerial sources of mercury potentially impacting the watershed (both on land through runoff and directly into the water),
- Exercise the Regional Board's authority, pursuant to Section 13267 of the California Water Code, to require technical and monitoring reports of those facilities whose air emissions may be affecting the water quality, including an analysis of mercury in storm water caused by those air emissions,
- Assign interim load allocations for aerial sources based on the number of known facilities in or near the watershed, which can be revised later as a better characterization of each of the facilities' mercury contributions to the watershed are developed⁵.

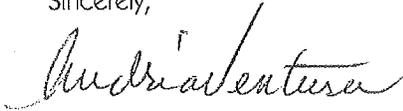
8003

We believe that this TMDL has much to offer in terms of addressing a serious problem in the Guadalupe watershed resulting from over 150 years of pollution, and again we commend Staff for its efforts. We do feel however, that more complete consideration must be given to the serious contributions from aerial sources. Furthermore, while much money, time, and work has gone into establishing the technical aspects of the watershed, mercury "behavior", and how to stop much of the continued contamination, the same has not been done to ensure we truly understand the impacts of the current mercury levels so that the proper decisions can be made in regard to protecting our fishing populations. This is particularly

reflected in the proposed fish tissue target for human consumption and the lack of exposure reduction requirements while remediation moves forward.

As an organization that prioritizes the environmental health of our local communities, especially those who bear a disproportionate pollution burden and its subsequent health, economic, and social impacts, we believe that this TMDL does not go far enough in serving the interests of environmental justice or in meeting the Regional Boards mission to “preserve, enhance, and restore the quality of California’s water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations”. To that end, we have offered the recommendations contained herein, in the spirit of working with the Board to correct these shortcomings and strengthen the TMDL. Please do not hesitate to contact us if you have any questions or if we can be of any assistance.

Sincerely,

A handwritten signature in cursive script that reads "Andria Ventura". The signature is written in black ink and is positioned to the left of the typed name.

Andria Ventura
Program Manager

Cc: C. Austin, T. Mumley, B. Wolfe



April 21, 2008

Via Electronic Mail: caustin@waterboards.ca.gov

Carrie Austin, Professional Engineer
Project Manger – Hg TMDL in Guadalupe
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RE: Baykeeper Comments on the February 2008 Guadalupe River Watershed Mercury TMDL, Proposed Basin Plan Amendment

Dear Ms. Austin:

We are writing on behalf of San Francisco Baykeeper (“Baykeeper”) to offer the following comments on the Guadalupe River Watershed Mercury Total Maximum Daily Load (“TMDL”) Project, Proposed Basin Plan Amendment.¹ We appreciate the effort that the San Francisco Bay Regional Water Board (“Regional Board”) has put into developing a TMDL for the mercury problem in the Guadalupe River Watershed. The TMDL offers the Regional Board an opportunity to meaningfully reduce mercury loads to the Guadalupe Watershed, and ultimately to the San Francisco Bay to make lasting improvements to the health of wildlife and people in the Bay Area.

In order to attain water quality objectives for the San Francisco Bay, the San Francisco Bay Mercury TMDL (“SF Bay TMDL”) designated a 97% load reduction in mercury from the Guadalupe River Watershed.² To meet this mandate the Guadalupe River Watershed Mercury TMDL (“Guadalupe TMDL”) must aggressively and comprehensively target sources of mercury loading, including potential aerial sources. We urge the Regional Board to address outstanding issues in the Guadalupe TMDL identified herein and take the necessary steps to immediately reduce mercury levels in the Guadalupe Watershed.

¹ Guadalupe River Watershed Mercury Total Maximum Daily Load Project, Proposed Basin Plan Amendment, California Regional Water Quality Control Regional Board, San Francisco Bay Region, February 2008.

² See BPA – 9, Table 4-v: Mercury Load and Wasteload Allocations by Source Category, Guadalupe River Watershed (mining legacy) [2003 Mercury Load: 92 kg/yr, Allocation: 2 kg/yr], San Francisco Bay TMDL Chapter 3 Water Quality Objectives, Basin Plan Amendment.



In particular, we respectfully request that you amend the proposed TMDL to do the following:

- Use daily loads, instead of seasonal and annual loads, as required by law;
- Identify potential aerial sources of mercury in the Guadalupe Watershed and require monitoring and reporting pursuant to Section 13267 of the California Water Code; and
- Protect at-risk communities by including exposure reduction requirements.

I. The TMDL Should Contain Daily Loads

Neither the Guadalupe River Watershed nor the San Francisco Bay has any assimilative capacity for mercury, meaning that no mercury can be added to the watershed without exceeding applicable water quality criteria. Until the Guadalupe River Watershed and the Bay have assimilative capacity for mercury, the letter of the Clean Water Act requires that controllable sources such as wastewater and stormwater be allocated zero loads and should not be permitted to increase their individual contributions.³

The TMDL program, outlined in Section 303(d) of the Clean Water Act, is the foundation of our country's water quality laws and brings "rigor, accountability, and statutory authority to the process."⁴ Section 303(d) requires the states to identify those waters within their boundaries for which existing technology-based pollution controls are not stringent enough to ensure that applicable water quality standards are achieved and maintained.⁵ For each waterbody and pollutant listed on a 303(d) list, the state must calculate the TMDL necessary to implement the applicable water quality standards.⁶

The Regional Board identified in their 1998 California 303(d) List and TMDL Priority Schedule several waterbodies in the Guadalupe River Watershed as impaired due to the presence of mercury. Legally, this classification now means that all future load allocations for mercury discharges in the watershed should be zero until assimilative capacity is created within a particular waterbody. However, in practice, a zero allocation is not immediately assigned, nor is it always feasible. Given the reluctance of the Regional Board to assign load allocations of zero here, the Regional Board must at a minimum, create load allocations that will meaningfully reduce mercury. A meaningful TMDL must address all controllable sources, create maximums that will reduce mercury in a timely fashion, and allocate loads that are, as the name suggests, daily.

The plain language of the Clean Water Act requires that TMDLs allocate "daily" loads ("total maximum *daily* loads"). Courts have also interpreted the Act to require daily loads: "[a TMDL is] the maximum amount of pollutants a waterbody can receive *daily*

³ 33 USC § 313(d)(1)(C).

⁴ New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs), Memorandum from Robert Perciasepe, Assistant Administrator for Water, U.S. EPA, to Regional Administrators and Regional Water Division Administrators, U.S. EPA (August 8, 1997).; *See* 33 U.S.C. § 1313(d).

⁵ 33 U.S.C. § 1313(d)(1) and (2); *see also* 40 C.F.R. § 130.7(b)(1).

⁶ 33 U.S.C. § 1313(d)(1)(C).

without violating the state's water quality standard.”⁷ In fact, a recent court decision suggests that a TMDL that expresses loads in a timeframe other than a daily basis is invalid.

In *Friends of the Earth v. Environmental Protection Agency* (“*Friends of the Earth*”), environmental groups challenged two TMDLs which provided for seasonal and annual limitations as opposed to daily limits.⁸ The plaintiffs in *Friends of the Earth* argued that neither seasonal nor annual limitations were capable of properly limiting the amount of pollutants from finding their way into the Anacostia River, the watershed at issue in that case.⁹ The D.C. Circuit Court affirmed this argument, and held that “daily means daily, nothing else” and “nothing in the language [of the CWA] even hints at the possibility that EPA can approve maximum ‘seasonal’ or ‘annual’ loads.”¹⁰

A subsequent United States Environmental Protection Agency (“EPA”) guidance document clarified the impact of this ruling, addressing a court ruling in another jurisdiction¹¹ which had signaled a possible split between the Circuits. The November 15, 2006 EPA memorandum recommended that “all TMDLs ... be expressed in terms of daily time increments.”¹² EPA also predicted that new TMDLs would “likely be drafted in a way that is consistent with the D.C. Circuit’s decision,”¹³ expressing maximum loads on a daily basis pursuant to the *Friends of the Earth* holding. In addition to a plain reading of the word ‘daily’ in ‘total maximum daily load,’ the EPA’s and courts’ interpretations should leave little doubt for the Regional Board that daily means daily.

TMDLs in the Proposed Basin Plan Amendment for the Guadalupe River Watershed are currently expressed as annual medians and seasonal maximums. Though this is an improvement from the five-year averages used to determine compliance in the San Francisco Bay TMDL, a yearly or seasonal maximum load still violates the unambiguous requirement for a *daily* load. The use of a yearly or seasonal timeframe is a departure from the ‘daily’ requirement of Section 303(d).

Further, the use of annual medians allows for some extremely high volumes of loading on certain days, so long as over the year there are also days with smaller concentrations. This type of allocation could actually allow dischargers to increase mercury loading.

⁷ *Id.*; Alaska Center for Environment v. Browner, (emphasis added) 20 F.3d 981, 983 (9th Cir. 1994).

⁸ *Friends of the Earth, Inc. v. Environmental Protection Agency*, 446 F.3d 140, 142, 144 (D.C. Cir. 2006). 2004); See also Matthew Chalker, *Recent Development: Friends of the Earth, Inc. v. Environmental Protection Agency: The U.S. Court of Appeals for the D.C. Circuit Holds that “Daily” Within the Context of the Clean Water Act, Unambiguously Requires Daily Loads*, 14 U. Balt. J. Env’tl. L. 201 (Spring 2007).

⁹ See generally *Corrected Final Opening Brief of Petitioner Friends of the Earth at 11-12, Friends of the Earth, Inc. v. Environmental Protection Agency*, 446 F. 3d 140 (D.C. Cir. 2006) (No. 02-1123 (Consolidated with No. 02-1124)).

¹⁰ *Id.*

¹¹ *Natural Resources Defense Council v. Muszynski*, 268 F. 3d 91 (2d Cir. 2001).

¹² EPA Memorandum clarifying Agency expectations concerning appropriate time increments used to express TMDLs (Nov. 15, 2006) at 2 (available at <http://www.epa.gov/owow/tmdl/pdf/anacostiamemo111506.pdf>).

¹³ Brief for the Federal Respondents in Opposition at 4, District of Columbia Water and Sewer Authority v. Friends of the Earth., No. 06-119 (Nov. 22, 2006).

Rather than allowing for increases in mercury loads nearly a decade after the Guadalupe River watershed was first listed as impaired for mercury, the TMDL developed must be calculated to reduce mercury loading and it is critical that daily requirements be imposed.

Recommendation: We urge the Regional Board to revise the seasonal or annual average load allocations currently used in the Guadalupe TMDL to make the maximum loads daily.

II. The TMDL Implementation Plan Should Require an Inventory and Investigation of Local Facilities that Emit Mercury

Baykeeper is concerned that this TMDL, like the SF Bay TMDL, fails to adequately address aerial sources of mercury in the Guadalupe River watershed. The Clean Water Act and its implementing regulations clearly require that a TMDL identify *all* nonpoint sources of pollutants contributing to impairment.¹⁴ For over a decade—essentially since implementation of the TMDL program—EPA has interpreted nonpoint sources of pollutants to include aerial sources.¹⁵ Consideration of aerial sources in a TMDL is particularly important for mercury, as several studies have shown that mercury deposited through atmospheric deposition is more rapidly converted to methylmercury than “native” mercury.¹⁶

While this TMDL includes a load allocation for atmospheric deposition of mercury, this load allocation does not account for local, stationary sources. The load allocation for this TMDL was calculated using the same rate of atmospheric deposition as that used in the SF Bay TMDL and is based on geographically and temporally skewed data.¹⁷ The data used to generate the ambient rate of atmospheric deposition was collected from only three sites in the San Francisco Bay Area, one in the South, Central and North Bay respectively. Additionally, the study relied on data that is temporally limited: one 24-hour composite sample was collected at each site only once every fourteen days for just over a year.¹⁸ In short, the data relied upon to calculate the load allocation for aerial sources for the Guadalupe TMDL is unsuitable to capture the potentially significant emissions from industrial sources.

There are many industrial sources of aerial mercury emissions in California and at least one known industrial source in the Santa Clara Basin, the Hanson Permanente Cement

¹⁴ 33 USC § 1313(d)(1)(C); 40 CFR §130.2(g) & (i).

¹⁵ National Clarifying Guidance For 1998 State and Territory Clean Water Act Section 303(d) Listing Decisions, (available at <<http://www.epa.gov/OWOW/tmdl/lisgid.html#b>>); EPA, *What is Nonpoint Source (NPS) Pollution? Questions and Answers* (excerpt from EPA brochure EPA-841-F-94-005, 1994), (available at <<http://www.epa.gov/owow/nps/qa/htm.l>>).

¹⁶ Sarah Rothenberg, Lester McKee, Don Yee, Alicia Gilbreath, Michelle Lent, San Francisco Estuary Institute, *An Investigation of Atmospheric Mercury Deposition to Bay Area Storm Runoff: a Pilot Study*, February 20, 2008 (“SFEI Power Point”) citing Hintelmann et al. 2002.

¹⁷ San Francisco Estuary Institute, *San Francisco Bay Atmospheric Deposition Pilot Study, Part I: Mercury* (July 2001) at 15.

¹⁸ *Id.*

(“Hanson”) portland cement facility in Cupertino.¹⁹ As of 1995, EPA estimated that the 208 portland cement facilities in the United States generated approximately 4.4 tons of mercury each year.²⁰ A recent study by the San Francisco Estuary Institute revealed that particulate and reactive gaseous mercury levels—which are likely be deposited closer to local or regional sources²¹—were significantly higher near the Hanson facility, than elsewhere in the Basin.²² In light of the potentially significant mercury loading that may be attributable to local air sources, like the nearby Hanson facility, we strongly urge the Regional Board to use the Guadalupe TMDL to establish a framework identifying, evaluating, and controlling local aerial sources. As part of the implementation of this TMDL, the Regional Board should conduct an inventory of all industrial and commercial facilities in the watershed that may be emitting mercury.

Once these dischargers are identified, the Regional Board should issue requests for monitoring reports, pursuant to Section 13267 of the California Water Code. The Regional Boards have clear authority to require technical and monitoring reports of those entities whose air emissions may be affecting water quality. Section 13267 provides the Regional Board with broad authority to issue a request to any person who has discharged, discharges, is suspected of discharging, or who proposes to discharge waste that “could affect the quality of waters.”²³ Reports are not limited to preexisting reports; the Regional Board may “require a person to conduct technical or monitoring programs and produce reports.”²⁴ Indeed, this Regional Board successfully exercised this authority in issuing a request for technical information to the Bay Area oil refineries, requiring them to measure mercury emissions. Similarly, in 2007 the Los Angeles Regional Board issued requests to dozens of commercial and industrial facilities suspected of emitting metals in sufficient quantities to harm water quality.

We respectfully request that the Regional Board transmit 13267 Letters to require technical information regarding the fate and transport of mercury from the top ten dischargers that release aerial emissions of mercury and may be contributing directly, or indirectly, to 303(d)-list mercury impaired waters in the Guadalupe River Watershed.

Finally, the current lack of information about air sources suggests that loads should be allocated to these local aerial sources in order to provide the legally required margin of safety until more is known.²⁵ The Guadalupe TMDL must assign a preliminary load allocation for local aerial sources based on the number of known emitting facilities in the Guadalupe Watershed and can study the source to determine what the right load is going

¹⁹ Hanson Permanente Cement is located at 24001 Stevens Creek Blvd., Cupertino, CA 95014-5659.

²⁰ EPA-454/R-97-012, Locating And Estimating Air Emissions From Sources Of Mercury And Mercury Compounds, United States Office of Air Quality Environmental Protection Planning And Standards (December 1997).

²¹ Swackhamer, D. et. al, Impacts of Atmospheric Pollution on Aquatic Ecosystems, Issues in Ecology, Vol. 12, p. 7, Summer 2004, (available at http://epa.gov/owow/airdeposition/ESA_Air_Dep_Ecosystems.pdf).

²² *SFEI Power Point*, *supra*, note 16.

²³ Cal. Water Code § 13267(b)(1).

²⁴ *Spartan Lacquer & Paint v. California Regional Water Quality Control Bd.*, 2003 Cal. App. Unpub. Lexis 1748 (California Unpublished Opinions 2003).

²⁵ 33 USC § 1313(d)(1)(C).

to be. The Regional Board can subsequently adjust the number as governed by the adaptive implementation framework currently in place in the TMDL.

As the Regional Board acquires reporting data from facilities, the data should be analyzed in a special study. A special study to better understand the sources and quantities of aerial deposition would address the following questions:

1. How much mercury is being deposited from the atmosphere from *local* sources?
2. How much mercury is being directly deposited into the Guadalupe Watershed and how much is being deposited on land than entering the creek through runoff?
3. Recent scientific research suggests that mercury sources can be traced;²⁶ is it possible to trace the sources of mercury deposition in the Guadalupe Watershed?

Recommendation: We urge you to identify all potential aerial sources of mercury in this TMDL and issue 13267 letters requiring further study of the potential for deposition into the watershed. The reporting results should then be analyzed in a special study and used to create more accurate allocations for local aerial deposition. In the meantime, a protective load allocation should be inserted into the TMDL as a placeholder to reduce the aerial contribution of mercury to the watershed.

III. The TMDL Should Include Exposure Reduction Language to Better Protect At-Risk Communities from the Dangers of Consuming Mercury Contaminated Fish Until the Watershed's Mercury Problem is Resolved

The link between historic gold mining and mercury impacts to human health and the environment is firmly established.²⁷ This is true in the Guadalupe Watershed, where mercury from mining waste has accumulated in riverbed and creekbed sediment and is a key source of loading to creeks and rivers.²⁸ Bacteria in the sediment of rivers and creeks convert inorganic mercury to the methylmercury, a potent neurotoxin which impairs the nervous system, which also enters the ecosystem and food chain.²⁹ High mercury levels have been measured in fish, amphibians, and invertebrates downstream of historic hydraulic gold mines in the Guadalupe Watershed.³⁰

²⁶ Recent research by scientists offers the promise of a new tracer of mercury sources. Their research into the measurement of natural variations in the stable isotope composition of Hg from coal formations could be helpful in source tracking of coal combustion emissions of Hg. Biswas, Blum and Bergquist, University of Michigan 2007, *Geochimica Cosmo Acta*, 71 (15): A94-A94, Suppl. S; and Blum and Bergquist, (2007) *Anal Bioanal Chem* 388: 353 – 359).

²⁷ Mercury Contamination from Historic Gold Mining in California, *USGS Fact Sheet FS-061-00*, Charles N. Alpers and Michael P. Hunerlach; Unites States Geological Survey, California Water Science Center; (available at <<http://ca.water.usgs.gov/mercury/fs06100.html>>). (“Mercury Contamination from Historic Gold Mining in California”)

²⁸ California Environmental Protection Agency; California Regional Water Quality Control Regional Board San Francisco Bay Region and California Office of Environmental Health Hazard Assessment, Press Release No. 04-08: Reservoir Study Shows Elevated Levels of Mercury, PCBs in Fish, October 14, 2004

²⁹ *Mercury Contamination from Historic Gold Mining in California*, *supra*, note 27.

³⁰ *Id.*

As of 2004, the Guadalupe Reservoir had the highest recorded fish mercury concentrations in California – nearly 20 times higher than the U.S. EPA methylmercury criterion.³¹ Baykeeper applauds the Regional Board for including fish tissue targets in the TMDL, however the value of the fish tissue target is 32 g/day, accounting for only one meal per week. This assumption is troubling because a target which is protective for people eating one fish meal per week does not protect subsistence fishers and others who may eat more than one meal per week in different seasons. In the absence of a local fish consumption study, the Regional Board should use the U.S. EPA mercury target to protect subsistence fishers.

Exposure to mercury is dangerous to both animals and people living in the Guadalupe Watershed. Mercury has been linked to adverse reproductive and developmental impacts in fish, bird and other wildlife species.³² When humans consume enough mercury-contaminated fish the health effects are severe and numerous. Health problems from mercury and methylmercury exposure include headaches, impaired fine motor skills, a weakened immune system, kidney failure, deafness, blindness, mental retardation and death.³³ The health problems for fetuses whose mothers consume mercury-tainted fish are even more severe, including delayed onset of walking and talking, altered muscle tone, mental retardation, cerebral palsy, deafness and blindness.³⁴

In light of the significant health impacts for people who consume mercury-contaminated fish, Santa Clara County issued a fish consumption advisory in 1987, warning people not to eat any fish from Guadalupe, Almaden and Calero reservoirs, Guadalupe and Alamitos creeks, the Guadalupe River, and percolation ponds along the river and creeks. Over 20 years later, elevated mercury levels in fish in the Guadalupe Watershed still make it unsafe for people to consume any fish taken from the Watershed.³⁵ Communities that rely on fish from the creeks and streams within the Guadalupe Watershed as a food source are vulnerable to mercury impacts.

It is imperative that the Regional Board protect the human health and safety of communities that live in the Guadalupe Watershed by addressing the dangers associated with mercury and methylmercury. Given that the Guadalupe TMDL has a twenty-year time frame for addressing the mercury problem, the document must outline safeguards which will reduce consumer exposure to mercury-contaminated fish in the interim.

Recommendation: Until local fish consumption studies are done, we ask the Regional Board use the U.S. EPA mercury target to better protect subsistence fishers. We also ask the Regional Board to include exposure reduction language similar to that of the San Francisco Bay TMDL, which contains a provision on risk management and protects subsistence fishing communities.

³¹ Proposed Basin Plan Amendment, Problem Statement, BPA-5, February 2008.

³² Barnhart et al., Mercury: Global Problems, Local Solutions, Columbia University, April 2004.

³³ *Id.*

³⁴ *Id.*

³⁵ See California Office of Environmental Health Hazard Assessment, Fish, Safe Eating Guidelines (available at <http://www.oehha.org/fish/so_cal/guadalupe.html>).

In conclusion, while this TMDL is a step in the right direction to mitigate mining legacy mercury in the Guadalupe River watershed, we do not believe it is aggressive enough in addressing the other sources of mercury or in protecting human health in the interim. Therefore we respectfully recommend that the Water Regional Board consider and make changes:

- to reflect daily loads,
- to better account for local aerial sources of mercury in the watershed, and
- to protect subsistence fishers and families in affected communities.

Thank you for this opportunity to provide comments. Please feel free to contact us if you should have any questions regarding these recommendations.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sara Aminzadeh', written in a cursive style.

Sara Aminzadeh
Legal Fellow, San Francisco Baykeeper

Sejal Choksi
Baykeeper and Program Director, San Francisco Baykeeper