



Midpeninsula Regional  
Open Space District

R-18-22  
Meeting 18-10  
March 14, 2018

## AGENDA ITEM 5

### AGENDA ITEM

Cost Sharing Agreement with Santa Clara County, Santa Clara Valley Water District, and Guadalupe Rubbish Disposal, Inc., for the Guadalupe River Watershed Mercury Total Maximum Daily Load Coordinated Monitoring Program

### ACTING GENERAL MANAGER'S RECOMMENDATIONS

1. Determine that the recommended action is Categorically Exempt from the California Environmental Quality Act.
2. Authorize the Acting General Manager to execute the Cost Sharing Agreement to participate in the Guadalupe River Watershed Mercury Total Maximum Daily Load Coordinated Monitoring Program.

### SUMMARY

In 2010, the San Francisco Bay Regional Water Quality Control Board (Regional Board) established the Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) to reduce mercury levels in sediment loads and fish tissue for the protection of wildlife and human health. The TMDL specifically imposes contaminant allocations, implementation plans, and monitoring requirements for mine and reservoir owners in the watershed. To address the monitoring requirement, the District and the three other large landowners within the historic New Almaden Mining District formed a Coordinated Monitoring Program in 2010 to implement a 5-year monitoring program.

At the conclusion of this 5-year monitoring effort, the District received a new regulatory letter directing the continued monitoring of mercury levels within the watershed for Phase II, ending in 2023. This requirement is best accomplished through continued coordinated monitoring by all four landowners. The Acting General Manager recommends executing the coordinated Cost Sharing Agreement for a not-to-exceed total cost of \$60,630 to be paid over the five-year monitoring period. The budget includes sufficient funds for the first year of work.

### DISCUSSION

The District purchased the Rancho de Guadalupe Property as an addition to Sierra Azul Open Space Preserve in 1995 (Report R-95-87). At the time of purchase, inspections identified several sites associated with the former Guadalupe Mine, one of several mines within the historic New Almaden Mining District.

In 1988, the California State Water Resources Control Board (SWRCB) identified several water bodies in the Guadalupe River Watershed as being impaired by the presence of mercury according to provisions in the Federal Clean Water Act, Section 303(d). Placement on this list triggered the TMDL process for the watershed to address mercury loading to San Francisco Bay. A TMDL determines the maximum “load” or quantity of a pollutant that a body of water can receive while still meeting water quality standards.

On October 8, 2008, the Regional Board adopted a TMDL for mercury in the Guadalupe River Watershed, which the U.S. Environmental Protection Agency (USEPA) approved on June 1, 2010. Mercury has contaminated the Guadalupe River Watershed, which originates from the former New Almaden Mining District, North America’s oldest and most productive mercury production area. Multiple mines operated between the 1870’s and 1970’s in this region, producing an estimated 39 million kilograms of mercury, or 5% of the world’s total historic production. Legacy mercury contamination continues to impact the region, primarily within the reservoirs and streams of the watershed. The Guadalupe River Watershed Mercury TMDL, completed in 2010, established contaminant allocations, implementation plans, and monitoring requirements for mine and reservoir owners in the watershed with the goal of reducing mercury levels in sediment loads and fish tissue to protect wildlife and human health.

In 2010, the Regional Board issued regulatory letters to the largest landowners in the former mining district (County of Santa Clara, Guadalupe Rubbish Disposal, Inc., Santa Clara Valley Water District, and Midpeninsula Regional Open Space District). This letter was issued under the authority of California Water Code Section 13267 and requires the development and implementation of a monitoring plan for mercury downstream of the New Almaden Mining District. In issuing these ‘13267 letters’, the Regional Board encouraged the large landowners to coordinate monitoring through a Coordinated Monitoring Program (CMP).

The Board approved the initial cost sharing agreement for the first five-year period (Phase I, 2011-2016) of the CMP on November 10, 2010 (R-10-129). The Water Board approved the Phase I monitoring plan submitted by the CMP partners on February 1, 2011. The required Final CMP Report for Phase I was submitted to the Regional Board in March 2017 (Attachment 1).

The Phase I Final CMP Report results show a variation in fish mercury levels within seasons and between years. In general, fish mercury concentrations were greater than Regional Board criteria. Due to drought conditions, sediment load monitoring only provided valuable data for low-water years. Since sediment loads are highly dependent on precipitation and stream-flow, reductions in mercury loads to the San Francisco Bay over the five year period were inconclusive.

The Regional Board issued a subsequent Section 13267 regulatory letter on June 29, 2017, which detailed requirements for the next phase of monitoring (i.e. Phase II) based on their review and findings from the Phase I Final Report and discussions with CMP partners. The Phase II study design addresses fish sampling difficulties encountered in the Phase I study where possible, and focuses load monitoring on higher rainfall/flow events, when and if they occur.

The Acting General Manager recommends entering into a new Cost Sharing Agreement to complete the required Phase II monitoring (from 2018 through 2023) of the CMP to comply with the Regional Board’s Section 13267 letter of June 29, 2017.

The new Cost Sharing Agreement continues the District's 11% contribution for Phase II, the same as agreed to for Phase I. District costs for the 5-year Phase II monitoring are for a total amount not-to-exceed \$60,630, slightly less than the Phase I cost of \$61,270. Annual costs are expected to be evenly distributed across the 5-year agreement term, not exceeding \$12,126 per year.

### **FISCAL IMPACT**

Sufficient funds are budgeted for Fiscal Year 2017-18 within the Natural Resources Budget (GL# 10-80-850-5299, Project 80010) for the first year of the study. Natural Resources will continue to carry the budget for this project through Phase II completion in 2023, for a total Project cost not-to-exceed \$60,630.

The recommended action is not funded by Measure AA.

### **BOARD COMMITTEE REVIEW**

The Board previously approved Phase I of the Coordinated Monitoring Plan Cost Sharing Agreement on November 10, 2010 (R-10-129).

### **PUBLIC NOTICE**

Public notice was provided as required by the Brown Act. No additional notice is required.

### **CEQA COMPLIANCE**

The Coordinated Monitoring Plan for the Guadalupe River Watershed Mercury TMDL entails basic data collection that will not result in major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts basic data collection and research that do not result in major disturbances to an environmental resource. Therefore, the funding of the Coordinated Monitoring Program is exempt under Section 15306.

### **NEXT STEPS**

Pending Board approval, the Acting General Manager will execute the CMP Cost Share Agreement. Staff will continue to work with CMP partners and the Regional Board to complete the required monitoring study. A report back to the Board will be prepared in 2023 at the conclusion of the Phase II monitoring period.

Attachment 1: Executive Summary, Guadalupe River Coordinated Monitoring Program 5-Year Report, AECOM, March 2017

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*Final*

# Guadalupe River Coordinated Monitoring Program 5-Year Report

## Executive Summary

This report presents the results from the 2011 (Year 1), 2012 (Year 2), and 2016 (Year 5) fish sampling and the 2015 storm sampling performed by AECOM (formerly URS) for the Santa Clara County Parks and Recreation Department the Santa Clara Valley Water District (SCVWD), the Guadalupe Rubbish Disposal Company, Inc., and the Midpeninsula Regional Open Space District (Interested Parties) under the Guadalupe River Coordinated Monitoring Plan (URS 2010). Target fish species and stormwater were collected and analyzed for mercury, consistent with the San Francisco Regional Water Quality Control Board's requirements for the Total Maximum Daily Load mercury monitoring in the Guadalupe River watershed specified in the California Water Code Section 13267 Letter (13267 Letter).

Fish were collected at several reservoirs and stream reaches in the Guadalupe River watershed. Mercury concentrations in the fish were analyzed to investigate inter-annual variation. Results for the 2011 (Year 1), 2012 (Year 2), and 2016 (Year 5) fish sampling are compared to results of previous studies conducted by Santa Clara Valley Water District for age-1 fish collected at similar sampling locations. In general, fish mercury concentrations are greater than Basin plan criteria. In most cases, fish collected in 2011 and 2012 had higher total mercury concentrations, fish collected in 2016 had lower mercury concentrations, and fish collected in 2004/2005 (with limited data) had either lower or mid-range levels of mercury. Consistent trends over time were not found.

A multivariable statistical model was used to analyze a combination of different factors to determine which factors are the most important in explaining the variability in the fish mercury concentrations. The statistical test was performed for total mercury concentrations using type of fish (reservoir/stream fish), location, length, and year as explanatory variables. The R-square of this multivariate model is approximately 0.84, which means that 84 percent of the variability in the data could be explained by these four parameters. In general, type of fish and location accounted for most of the variability, followed by length, and then by year. Findings also include the following:

- Of the fish collected in lakes and reservoirs (primarily largemouth bass, *Micropterus salmoides*), fish collected during this study from Almaden Reservoir had the highest mercury concentrations followed by fish collected from Guadalupe Reservoir, then Lake Almaden, then Calero Reservoir.
- Of the fish collected from stream locations (California roach, *Lavinia symmetricus*), fish collected from Alamitos Creek at Harry Road had the highest mercury concentrations, followed by fish collected from Guadalupe Creek at Meridian/Singletree and Alamitos Creek at Greystone, then Guadalupe River at Foxworthy/Virginia, then Guadalupe River at Coleman.
- Longer (or heavier) fish had higher mercury concentrations than shorter (and lighter) fish.
- Inter-annual trends showed mercury concentrations going up (from 2004 to 2012) and down (from 2012 to 2016). However, the length (size) of the fish still explained more about the differences in mercury concentrations than when (which year) the fish were collected.
- The statistical results using wet weight or dry weight mercury concentrations were very similar with little differences.

Mercury concentrations in stormwater were used, along with data collected by the US Geological Survey, to estimate mercury loading in the watershed above Highway 101 in San Jose, California. Four events were sampled by AECOM during the 2014/2015 storm season. The first event was the

largest event of the winter, occurring in mid-December. The second and third events occurred in the same week in February with sequential storms. The final event occurred in the beginning of April. Samples were collected using trace metal clean protocols with a US DH-95 depth-integrating suspended-sediment sampler. The US DH-95 is designed to collect depth-integrated, flow-weighted suspended sediment samples with trace metal protocols. Samples were analyzed for mercury species (i.e., total mercury, dissolved mercury, total methylmercury, and dissolved methylmercury) and for suspended sediment.

Mercury loads were calculated using linear and power regression relationships developed from site-specific data. The 2015 mercury-sediment relationships indicate that sediment conveyed during water year 2015 in the Guadalupe River watershed past Highway 101 had an approximate 20 percent decrease in mercury load, as compared to mercury loads calculated from mercury-sediment relationships from 2010.