

**DELTA MERCURY CONTROL PROGRAM PROGRESS REPORT
SUMMARY OF METHYLMERCURY CONTROL STUDIES—FEBRUARY 2016**

Methylmercury Study Project and Authors	Summary of Study Progress
Central Valley Clean Water Association Methylmercury Special Project (group study that includes Delta and non-Delta municipal wastewater treatment plants)	Project measured methylmercury (MeHg) in influent and effluent at all participating facilities and evaluated the data with respect to facility treatment type. The project also predicts changes in methylmercury loads under potential treatment upgrades. Data collection from local facilities and most analyses are complete. Data show that treatment systems with nitrification-denitrification processes have near-or non-detectable levels of methylmercury in effluent. The report proposes a small amount of additional work, pending comments from the technical advisory committee.
City of Stockton and County of San Joaquin Methylmercury Control Study (urban stormwater)	The study is sampling inflow and outflow of a detention basin within the MS4 permit area and evaluating effectiveness of settling basins at trapping MeHg. Data from completed sampling events are presented in the Progress Report. Additional data and analyses will be completed for the Final Report.
Sacramento Stormwater Quality Partnership Methylmercury Control Study (urban stormwater)	The project tested effectiveness of one management practice, low impact development (LID), at reducing MeHg loads and concentrations. Two urban sites with and without LID features were monitored. Methylmercury loads were reduced by LID due to the reduction in discharge volume. At one site, MeHg discharge concentrations were also lower after LID installation. The final report will evaluate feasibility of meeting wasteload allocations.
City of Sacramento for its Combined Storm Sewer System (wastewater and stormwater)	This project is evaluating methylation potential in plant and conveyance systems and possible reductions through proposed LID and capital improvement projects. The City collected influent and effluent samples during five winter storm events and tested methylmercury produced in deposited sediments. Additional data and analyses will be completed for the Final Report.
Contra Costa Clean Water Program (urban stormwater)	This project monitored a) methylmercury in urban drains in East Contra Costa County for comparison with TMDL estimates, and b) outflow from two biofiltration systems, which are a type of LID management practice. Data collection is complete.
Deuel Vocational Institute (wastewater treatment for California Department of Corrections facility)	This individual study completed monitoring of methylmercury in influent and effluent. Data indicate that the treatment process is effectively removing methylmercury and no additional mercury source investigation or plant optimization is needed.

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Port of Stockton Methylmercury Control Study (industrial stormwater)	The objective of this individual study is to determine whether additional maintenance of stormwater collection systems is needed to reduce methylmercury loads discharged to the San Joaquin River. Due to lack of runoff and sediment accumulation in the targeted collection system, monitoring will occur in winter 2015/2016. Data and final analyses will be complete by 2018.
Open Water Workgroup Progress Report (group led by Department of Water Resources and involving State and federal water and land management agencies)	This group project is a combined modeling, field data, and laboratory approach to evaluate the potential effects of operational changes on methylmercury in Delta channels. Department of Water Resources is developing two mathematical models, one each for the Delta and Yolo Bypass that will allow testing of various land and water management scenarios. This is a particularly detailed effort, as both new data for model inputs and new modelling code are needed. The final report for this study is expected to be complete at the end of 2019.
Delta Mercury Control Progress Report for Tidal Wetlands (Department of Water Resources)	To inform planning for future tidal wetland restorations, this project is monitoring methylmercury concentrations and loads in existing tidal wetlands. Data collection at one tidal wetland in the Yolo Basin Wildlife Area is complete (10 tidal cycles/one year). Collection has begun at a second site in the Suisun Marsh. The challenge for this study will be to complete monitoring at a sufficient number of wetlands by 2018 so that comparisons between different tidal wetlands and effects on methylmercury can be made.
Effects of Ship Channel Maintenance Dredging on Methylmercury (US Army Corps of Engineers)	The Corps of Engineers evaluated methylmercury concentrations in dredge material return flow and effect on the San Joaquin River. Although discharge concentrations of methylmercury were relatively high, no effect on the river was observed. This study continues work begun in 2009 to evaluate management practices and characterize methylmercury loads.
Methylmercury Management in Seasonal Wetlands	This study is evaluating the effect of passing water from seasonally flooded wetlands (shallow, typically with high methylmercury concentrations) through permanent ponds (deep areas designed to promote methylmercury settling and degradation by ultraviolet light). Final report is due in 2017.
Mercury Control Studies for the Cache Creek Settling Basin Report of Findings (Department of Water Resources)	This report was submitted in response to the Basin Plan requirement that agencies responsible for managing the Cache Creek Settling Basin (CCSB) evaluate the feasibility of reducing loads of mercury that exit the basin. In the dry period characterized in this study (water years 2010-2014), the CCSB trapped 60% of mercury entering the basin. Monitoring of methylmercury concentrations in birds nesting in the basin showed some species may be experiencing reproductive impacts. The report examines potential management solutions under consideration for the CCSB to meet other flood control and Yolo Bypass management needs. These alternatives (raising the outlet weir, stockpiling sediment within the CCSB, enlarging the CCSB footprint, and combinations of such measures) could increase the mercury trapping efficiency by up to 15%, but are not expected to reduce methylmercury concentrations within the CCSB.