



TECHNICAL MEMORANDUM

Subject: Project Update for Proposed Zebra Mussel Eradication Project

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San Benito County

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BACKGROUND

The San Benito County Water District (SBCWD) operates the San Felipe – Hollister Division water (blue valve) distribution system that is supplied by federal Bureau of Reclamation, Central Valley Project (CVP) water. This system is used to import surface water into San Benito County and is used for agricultural irrigation, municipal and industrial uses and groundwater recharge. CVP water is delivered to San Benito County from San Luis Reservoir in Merced County, California which is jointly owned by the United States Bureau of Reclamation (USBR or Bureau) and the California Department of Water Resources (DWR). The water from San Luis Reservoir is pumped over Pacheco Pass through the Pacheco Pass Conduit to the Bifurcation structure located near Casa de Fruta off of Highway 152. At this point the water is delivered to Santa Clara County through the Santa Clara Conduit or to San Benito County through the Hollister Conduit. The Hollister Conduit delivers water to 10 connected distribution systems 2 water treatment plants for the City of Hollister and San Justo Reservoir. The Hollister Conduit and San Justo Reservoir are owned by USBR and the subsystems and water treatment plants are owned by SBCWD. The Pacheco Conduit and Bifurcation structure are owned by USBR but operated through a joint operating agreement with Valley Water (formerly Santa Clara Valley Water District).

Zebra mussels were first observed in San Justo Reservoir in January 2008. Infestation of the Hollister Conduit was confirmed in March 2009. Zebra mussels are non-native dreissenid mussels from Europe. They reproduce prolifically, especially in warmer North American waters. Significant time and resources have been expended to contain this invasive threat from further infestations of additional water bodies. SBCWD and USBR have worked together to contain and control the current infestation. USBR has also been working towards eradication of the zebra mussels (ZM) within the Hollister Conduit and San Justo Reservoir system.

OVERALL CONTROL AND ERADICATION PROJECT

The control and eradication of ZM in CVP infrastructure in San Benito County involves 2 main parts: 1) the treatment of San Justo Reservoir; and 2) the treatment of the Hollister Conduit in addition to District-owned water distribution facilities.

Currently SBCWD operates San Justo Reservoir and the San Felipe Distribution system to control the existing population of ZM within the system. ZM when exposed to desiccation, generally, can only survive a few days but have been observed to survive longer in cooler temperature situations. The geology around San Justo is prone to landslides and for this reason, the reservoir level is operated to the maximum elevation to start the water year (March 1) and lowered as much as possible to still meet demands within the system (roughly October 15). This accomplishes two goals: 1) it maintains a lower phreatic surface within the surrounding soils reducing the risk of landslides; and 2) exposes adult mussels that have attached to the substrates within the upper elevation extents of the possible water levels to desiccation. As the water ages within the reservoir over the summer, the lower water elevations show reduced dissolved oxygen and hypoxic conditions. ZM are described as poor oxygen regulators and cannot persist in hypoxic conditions and do not survive at the lower reservoir elevations. The hypoxic water that exists at the end of the season is discharged through the distribution system aiding in control of mussels that are living within the distribution system.

SBCWD has completed environmental documentation and work associated with the California Environmental Quality Act (CEQA) and USBR has completed the National Environmental Policy Act (NEPA) for ZM eradication. This completed work has made it possible for USBR to draft a Feasibility-Level Eradication Plan for ZM in San Justo Reservoir, Hollister Conduit, and Distribution System. This plan involves the lowering of the water elevation within San Justo Reservoir and concurrent treatment of the reservoir and pipelines with ‘muriate of potash’ (potash or potassium chloride). It is important to perform the treatment of both the reservoir and pipelines simultaneously as eradication the ZM within the reservoir without eradicating them in the pipeline and vice versa, would allow re-infestation of both appurtenant infrastructures. Potash is being proposed as the molluscicide for this project as it has been used previously in another case successfully and it will kill mussels exclusively, without collateral negative effects on other plants and organisms. This includes listed ‘species of concern’, humans and agricultural crops. SBCWD has obtained the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) permit for potash for this project. In total, SBCWD has spent approximately \$615,000 towards ZM eradication to date.

DISCUSSION

SBCWD strives deliver the most safe, cost-effective, reliable, and sustainable water supply to San Benito County possible. As part of this approach, staff is working with USBR to continue to monitor the ZM infestation and work towards a permanent solution. District staff will remain in contact with USBR regarding the further development of the Eradication Plan and any and all associated testing and work that will need to be completed as part of this project.

Currently the ZM population has been significantly reduced due to the District's re-operation of San Justo Reservoir and is not at present, an operational problem for the District.