22 September 2016

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APPROVAL OF THE COMPLETION OF MANAGEMENT PLAN REQUIREMENTS FOR LEAD IN THE PIT RIVER AT PITTVILLE BRIDGE

Thank you for your 9 May 2016 request to deem the management plan requirements complete for lead in the Pit River at Pittville Bridge in the Pit River Subwatershed of the Sacramento Valley Water Quality Coalition (Coalition). The Coalition's primary basis for the request is that water quality objectives for lead are being met, and extensive outreach efforts and management practices have been implemented in the subwatershed to prevent agricultural contributions to sediment-associated lead discharges.

The information provided in the Coalition's request letter and the attached staff memorandum support the conclusion that growers are implementing the practices necessary to prevent sediment and erosion discharges to surface waters throughout the subwatershed. The lack of lead exceedances since April 2011 demonstrates the effectiveness of the management practices in resolving the water quality problem. For these reasons, I have determined that the Management Plan requirements for lead are complete. The Coalition should continue to collect and analyze samples from Representative monitoring site Pit River at Pittville Bridge according to the regular monitoring schedule.

If you have any questions or comments regarding this approval letter, please contact Lynn Coster by phone at (530) 224-2437 or by email at Lynn.Coster@waterboards.ca.gov.

Original signed by

Pamela C. Creedon
Executive Officer

Enclosure: Review of Request to Deem Management Plan Requirements Complete for Lead in the Pit River at Pittville Bridge

cc: Bruce Houdesheldt, Northern California Water Association
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Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
IRRIGATED LANDS REGULATORY PROGRAM

FROM: Lynn Coster
Environmental Scientist
MONITORING AND IMPLEMENTATION UNIT
IRRIGATED LANDS REGULATORY PROGRAM

DATE: 16 September 2016

SUBJECT: MANAGEMENT PLAN FOR LEAD IN THE PIT RIVER AT PITTVILLE BRIDGE

The Sacramento Valley Water Quality Coalition (SVWQC, Coalition) is required to implement management plans for constituents that exceed water quality objectives at the same site more than once in a three-year period (Orders No. R5-2009-0875 and R5-2014-0030-R1). On 9 May 2016 the Coalition submitted a request to deem the management plan requirements complete for lead in the Pit River in the Pit River Subwatershed. The request is based upon the contention that the Pit River has been determined to meet the water quality objective for lead and that extensive sediment and erosion control practices implemented in the Pit River Subwatershed are adequate to prevent and control potential agricultural contributions to lead discharges.

Based on the requirements in Order R5-2014-0030-R1 (Order), management plans may be completed in one of two ways: irrigated agriculture is demonstrated not to be causing or contributing to the water quality problem, or the improved management practices have resolved the water quality problem and the water quality data shows at least three years of compliance. The Central Valley Water Board staff reviewed the Coalition's request.

Staff evaluation of evidence presented to support the request:

a) **Background:** Located in the Pit River Subwatershed, Pit River at Pittville Bridge is in the Big Lake drainage and serves as the Representative monitoring site for the subwatershed. The predominant crops grown within the subwatershed include pasture, wild rice, oats, grain, and hay.

b) **Monitoring data:** The management plan for lead in the Pit River at Pittville Bridge was triggered by exceedances in June 2009 (dissolved lead only) and April 2011 (total and dissolved lead fractions). The observed concentrations exceeded the Irrigated Lands Regulatory Program Trigger Limits based on the California Toxics Rule criterion for dissolved lead (which varies based on receiving water hardness) and the Title 22 Maximum Contaminant Level (MCL) for total lead (15 ug/L). The dissolved lead concentration in June 2009 was 2.5 ug/L (with an exceedance criterion of 2.3 ug/L) and in April 2011 was 1.3 ug/L (with an exceedance criterion of 0.97 ug/L). The total lead concentration in April 2011 was 43 ug/L.

There have been no lead exceedances in the Pit River at Pittville Bridge since the management plan was triggered in 2011. Monitoring continued in 2012, 2013, 2014, and 2015, with no exceedances in the 21 samples collected since the last exceedance in April 2011 (Figure 1). The Department of Water Resources (DWR) has collected data since 2008 at monitoring site Pit River at Pittville Bridge for the Surface Water Ambient Monitoring Program (SWAMP), a coordinated monitoring effort between DWR and the Central Valley Regional Water Quality Control Board. Since 2009, SVWQC's approved Monitoring Plans have permitted the use of SWAMP data at Representative monitoring site Pit River at Pittville Bridge. SWAMP monitoring was typically conducted during the months of November, February, May, and August, and the Coalition was responsible for monitoring in June and July.

Monitoring was conducted during the irrigation season and during the storm season. The lead exceedances in the Pit River at Pittville Bridge were not associated with irrigation events, as there is no significant irrigation at this time of the year in the subwatershed. The exceedances followed storm events consisting of approximately 0.25 inches of rain in the week preceding the 2009 exceedance and approximately 1.35 inches in the four days prior to the 2011 exceedances. Monitoring was conducted, as required, during the times of the year when previous exceedances occurred (Figure 2).

Figure 1. Pit River at Pittville Bridge Lead Monitoring Results

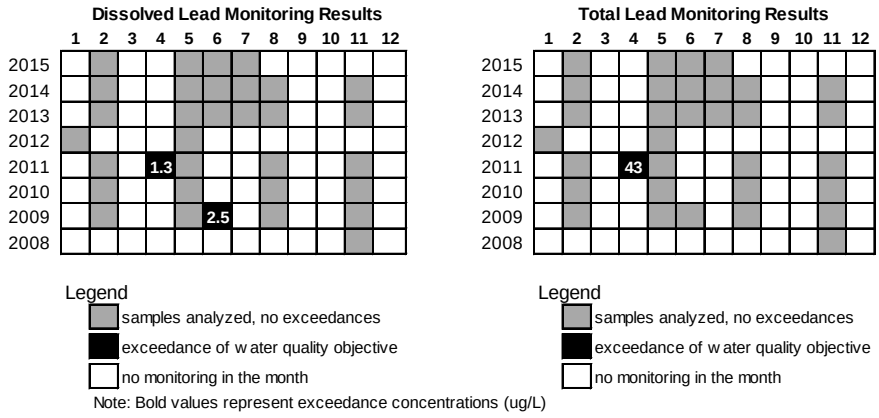

Figure 2. Monitoring Dates for Lead in Pit River at Pittville Bridge

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015		02/03			05/05	06/23	07/23					
2014		02/04			05/06	06/19	07/22	08/12			11/05	
2013		02/06			05/07	06/26	07/25	08/06			11/05	
2012	01/31				05/08							
2011		02/01		**04/21**	05/18			08/02			11/01	
2010		02/02			05/04			08/03			11/02	
2009		02/24			05/20	**06/17**		08/11			11/03	
2008											11/04	

Legend

not sampled | no exceedance | Dissolved lead exceedance | Total lead and dissolved lead exceedance

Note: Bold figures represent sample collection dates.

c) **Potential sources**: A Source Evaluation Report for lead in the Pit River was submitted in May 2013. The evaluation found there are no current agricultural uses of lead in the Pit River drainage and the most common non-agricultural uses (leaded fuel and lead-based paint) have been banned for at least 15 years. A non-operational concrete block manufacturing facility and a non-operational gas station, both located upstream of the monitoring site, were suggested as potential non-agricultural sources, although neither source was confirmed. Weathering and runoff of soil containing legacy lead deposits was also included as a potential source of the exceedances. The evaluation acknowledged that agricultural practices can result in increased sediment runoff, although the evaluation concluded that agriculture does not appear to be the cause of the exceedances. However, staff determined that sediment discharges from agriculture should not be excluded as a contribution to the water quality problem.

d) **Third-party outreach and management practice implementation:** The Coalition informed growers about the exceedances, and growers were made aware of the need for management practices to control sediment and erosion. The subwatershed's education and outreach efforts have included annual membership meetings, newsletters, and University of California Cooperative Extension and Natural Resources Conservation Service workshops covering management practice implementation. The Coalition suggests that increased grower awareness may have contributed, in part, to the lack of lead exceedances observed since April 2011.

Farm Evaluation Surveys from 2015 further document the widespread implementation of management practices in the Upper Pit River subwatershed. The surveys describe pesticide, irrigation, nutrient, and erosion and sediment control management practices being employed and the extent to which those practices are being implemented. Surveys were submitted by 98% of the subwatershed's members covering 99.6% of the irrigated acres, with only 365 unaccounted acres (3 members).

The results of the 2015 Farm Evaluation Survey show a high rate of implementation of management practices that are protective of water quality, including irrigation and cultural practices to manage sediment and erosion. Irrigation practices implemented to manage sediment and erosion (reported as the percent of total acres reported) include:

- Time between pesticide applications and the next irrigation is lengthened as much as possible to mitigate runoff of sediment bound pesticide residue. (48.2%)
- Shorter irrigation runs with checks to manage and capture flows. (47.7%)
- Tailwater Return System. (38.8%)

Over 50% of the Member acres reported the use of the following cultural practices to manage sediment and erosion:

- Cover crops or native vegetation to reduce erosion. (54.3%)
- Soil amendments, deep ripping, and/or aeration to increase soil water penetration. (53.8%)
- Vegetated ditches to remove sediment as well as water soluble pesticides, phosphate fertilizers, and some forms of nitrogen. (51.4%)
- Creek banks and stream banks have been stabilized. (50.2%)

- Minimum tillage incorporated to reduce erosion. (50.0%)

The percent implementation of individual erosion and sediment control practices is also presented in the Coalition's management plan completion request. The results show that 100% of the Member parcels reported implementing at least one erosion and sediment control practice. Approximately 98% of the parcels implemented two practices, and 85% implemented three practices. The implementation rates are significant in this subwatershed where 71.5% of the agricultural acreage consists of pasture, hay, alfalfa, and native vegetation, crops with minimum tillage that act as permanent "cover crops" with low erosion potential. The remaining 28.5% of the acreage consists of wild rice, orchards, grains, wheat, berries, and herbs/spices.

Staff recommendation:

Over four years of monitoring data has been collected from Pit River at Pittville Bridge with no lead exceedances since those that triggered the management plan in April 2011. Monitoring was conducted during the storm runoff season, when the previous exceedances occurred. Monitoring will continue at Pit River at Pittville Bridge, the Representative monitoring site for the Pit River subwatershed.

Sufficient measures have been taken to prevent agricultural contributions to sediment and erosion discharges in the Pit River. The Coalition has documented ongoing third-party education and outreach to members. Management practices have been implemented to reduce the risk of sediment and erosion discharges to surface waters. Detailed results from grower surveys were provided which focus on controlling sediment and erosion. As a requirement in the Order, the Coalition will continue to report on the Upper Pit River subwatershed's implementation of management practices through Farm Evaluation Surveys reported annually in high vulnerability areas and every five years for all farming operations in low vulnerability areas.

Staff recommends approval of the request to complete the requirements for a lead management plan in the Pit River based on documentation that water quality objectives are being met and growers are implementing the practices necessary to prevent sediment erosion and discharge throughout the subwatershed area.