



Central Valley Regional Water Quality Control Board

11 March 2014

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2013 MANAGEMENT PLAN UPDATE REPORT REVIEW - SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Thank you for submitting the April 2013 San Joaquin County and Delta Water Quality Coalition (Coalition) Annual Management Plan Update Report (MPUR). Staff has completed a review of the MPUR (enclosed with this letter) for compliance with Monitoring and Reporting Program Order No. R5-2008-0005 (MRP Order) and the Sacramento and San Joaquin River Basin Plan for specific Total Maximum Daily Load (Basin Plan -TMDL) requirements.

Based on the sampling data, the TMDL Management Plan implementation efforts have reduced the percent frequency of chlorpyrifos exceedances with only a single chlorpyrifos exceedance recorded during the reporting period out of 57 sampling events. Water column toxicity exceedances also declined from the previous year. However, an increase in percent exceedances was observed for sediment toxicity from the previous year. Sediment toxicity appears to be associated with the increase in pyrethroid use on walnuts, alfalfa, grapes, and almonds. The Coalition should continue its attention on these crops and associated management practices.

If you have any questions or comments regarding the review, or need any further information, please contact Chris Jimmerson at (916) 464-4859.

Susan Fregien (handwritten signature)

Susan Fregien, Senior Environmental Scientist
Monitoring and Implementation Unit
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Joe Karkoski, Chief
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Enclosures: Annual MPUR review memo
MPUR review checklist

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
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Monitoring and Implementation Unit
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FROM: Chris Jimmerson
Environmental Scientist
**MONITORING AND IMPLEMENTATION UNIT
IRRIGATED LANDS REGULATORY PROGRAM**

DATE: 20 December 2013

SUBJECT: 1 APRIL 2013 MANAGEMENT PLAN UPDATE REPORT - SAN JOAQUIN
COUNTY AND DELTA WATER QUALITY COALITION

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) received the San Joaquin County and Delta Water Quality Coalition (Coalition) Management Plan Update Report (MPUR) on 1 April 2013 for compliance with Monitoring and Reporting Program Order No. R5-2008-0005 (MRP Order). The MPUR is required per the MRP Order and the Management Plan approved by the Central Valley Water Board Executive Officer on 23 January 2009. The Central Valley Water Board staff has reviewed the MPUR to evaluate it for sufficient information regarding the achievement of the performance goals and required report components. This memorandum summarizes the review findings.

The review section item numbers in this memorandum are the same as those used in the attached MPUR Checklist. Staff derived the MPUR Checklist directly from the MRP Order, the Basin Plan -TMDL requirements, and the 22 October 2009 MPUR Guidance Document. Staff used the checklist to verify that the MPUR met the minimum prescribed report requirements. This memorandum provides a discussion of components that warranted further explanation.

Overall, the Coalition's 2013 MPUR demonstrates compliance with the terms and conditions of the MRP Order, and meets or exceeds all reporting requirements. Monitoring results are assessed for exceedances and any water quality improvements, detailed status updates on constituents and subwatersheds requiring a management plan are included, and actions taken to address TMDL requirements are summarized.

Monitoring was conducted from January through December 2012 for all constituents requiring a Management Plan or as part of assessment monitoring. The Coalition monitored 15 sites for field parameters, copper, chlorpyrifos, diazinon, dieldrin, diuron, disulfoton, lead, malathion, simazine, *Ceriodaphnia dubia*, *Selenastrum capricornutum*, and *Hyalella azteca* as part of management plan monitoring. As a result of assessment monitoring conducted during the same

Table 2: First High Priority site trends for combined Duck Creek, Lone Tree Creek, and Unnamed Drain

Analyte/Fraction/Unit	2008									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Chlorpyrifos, Total, ug/L	0%	29%	31%	28%	46%	47%	32%	15%	4%	
Diazinon, Total, ug/L	0%	0%	0%	8%	4%	0%	0%	0%	0%	
Diuron, Total, ug/L			0%	17%	8%	0%	0%	0%	6%	
Ceriodaphnia dubia	0%	0%	8%	7%	40%	29%	0%	17%	0%	
Hyaella azteca	0%	50%	25%	14%	43%		67%	50%	60%	
Selenastrum capricornutum	0%	13%	6%	21%	23%	0%	0%	0%	0%	
Pimephales promelas	0%	13%	0%	0%	4%	0%			0%	
Copper, Dissolved, ug/L					0%	0%	10%	10%	5%	
Lead, Total, ug/L			0%	0%	14%	67%			25%	
Oxygen, Dissolved, None, mg/L	33%	63%	77%	23%	39%	45%	28%	14%	35%	
Ammonia as N, Total, mg/L			0%	38%	5%	0%			0%	
E. coli, MPN/100mL	25%	100%	56%	54%	50%	0%			8%	
pH, none	0%	13%	9%	3%	7%	0%	0%	7%	0%	
Dissolved Solids, Total, mg/L	0%	0%	0%	4%	4%	0%			0%	
Specific Conductivity, uS/cm	0%	0%	5%	5%	0%	0%	0%	4%	3%	

B. TMDL Chlorpyrifos/Diazinon

B.I.1:

There were zero detections of diazinon and one chlorpyrifos exceedance observed in 2012. The MPUR discusses that four sites were used to assess loading capacity (named Delta waterbodies and subareas) and 10 sites were used to assess loading allocation (tributaries to Delta). The loading capacity for the chlorpyrifos and diazinon TMDL was met for the reporting period. This is a significant improvement from the previous year. The chlorpyrifos loading allocation was not met at Unnamed Drain to Lone Tree Creek at Jack Tone Road because of the one exceedance.

B.IV.2: TMDL Methyl Mercury

The Basin Plan requires entities responsible for reducing methyl mercury in the Delta to participate in a mercury exposure reduction program (MERP) aimed at reducing exposure to mercury among people who eat Delta fish. According to the MPUR, the Coalition representatives participated in a stakeholder group to develop the MERP Work Plan, which was approved by the Executive Officer in October 2013.

Item No.	Management Plan Component Description ⁽¹⁾	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
		A	U	I		
A. MRP Order I						
1	Identification of irrigated agriculture source -- general practice or specific location -- that may be the cause of the water quality problem, or a study design to determine the source.	X			20, 30, 88, Apdx. I	Coalition used PUR, and relevant water quality data to assist with determining source of exceedances. As a result, Coalition targets certain crops and geographic areas. Not all sources have been determined.
2	Identification of management practices to be implemented to address the exceedances.	X			48, 78, 82 et seq.	Provides summary of mgt practices to be implemented for each HP site subwatershed. Surveys indicate reducing the use of the pesticide of concern and reducing runoff volume.
3	Management practice implementation schedule. Implementation may occur through another Water Board regulatory program designed to address the specific exceedances.	X			78, 82 et seq.	Implementation occurs between year 1 and 2. Structural management practices may take multiple years to fund and construct.
4	Management practice performance goals with a schedule.	X				The Performance Goal section provides information on schedules.
5	Waste-specific monitoring schedule.	X				New Management Plans identified in this MPUR: <i>Hyalella</i> and specific conductance. See memo.
6	A process and schedule for evaluating management practice effectiveness.	X				Information on implementation and evaluation schedules was provided in the Performance Goals and Schedules sections.
7	Identification of the participants and Coalition Group(s) that will implement the Management Plan.	X			45 et. Seq.	
8	An identified routine schedule of reporting to the Regional Water Board.	X				
9	Signed Transmittal Letter.	X				
II. Prioritization Strategy						
1	Prioritization of the water quality problems was developed	X			22, 23	Flow charts and text describe how each MgtPlan analyte is to be prioritized.
2	The prioritization may include considerations such as extent, magnitude and duration, or be based on a design that assumes that resolution of one type of contaminant (such as sedimentation) may help resolve other types of measured exceedances (such as pesticides, toxicity, DO and pH)	X			22, 23	Part of the prioritization process includes coinciding sampling during months of past exceedances. TMDL monitoring is high priority. Field parameters are lower priority. Bear Creek site moved up in priority due to exceedances.
3	Management Plan reporting schedule	X				
4	Steps to identify appropriate management practices. Such steps involve conducting management practices workshops and/or developing a management practices worksheet questionnaire to determine the management practices being used in the identified areas.	X				Mgt Practice surveys provided at outreach meetings. Members return surveys to document current mgt practices and identify additional mgt practices to be implemented. Coalition submits follow up surveys to document if mgt practices were implemented. Coalition prepared mgt practice workbooks for growers to use.
III. MRP Program Questions						
1	QUESTION No.1: Are conditions in waters of the State that receive discharges of wastes from irrigated lands within Coalition Group boundaries, as a result of activities within those boundaries, protective of beneficial uses?	X				Addressed in the 3/1/13 AMR. Provides description of monitoring sites, beneficial use, and if BU are impaired.
2	QUESTION No.2: What is the magnitude and extent of water quality problems in waters of the State that receive agricultural drainage or are affected by other irrigated agriculture activities within Coalition Group boundaries, as determined using monitoring	X				Exceedance tally in MPUR provides information on extent and magnitude. Additionally the tabulated results are reported in Appendix II of AMR.
3	QUESTION No.3: What are the contributing source(s) from irrigated agriculture to the water quality problems in waters of the State that receive agricultural drainage or are affected by other irrigated agriculture activities within Coalition Group boundary	X			Appendix I.	Source analysis conducted by using PURs obtained through the California Pesticide Information Portal and Agriculture Commissioner. Outstanding PURs included in the August addendum. Source ID sections found in High Priority sections (Appendix I).
4	QUESTION No.4: What are the management practices that are being implemented to reduce the impacts of irrigated agriculture on waters of the State within the Coalition Group boundaries and where are they being applied?	X			48 et. Seq.	Reducing runoff and the use of pesticide are the most common practices implemented.
5	QUESTION No.5: Are water quality conditions in waters of the State within Coalition Group boundaries getting better or worse through implementation of management practices?	X				The Coalition presented exceedances as a percentage. Most pesticide and metal exceedances trending downward. Field parameter exceedances show no discernible trend. Toxicity is mostly trending downward with the exception of sediment toxicity.

Item No.	Management Plan Component Description ⁽¹⁾	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
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	IV. ILRP MRP Component Description ⁽¹⁾					
1	Sampling sites that are compliance monitoring sites for TMDLs	X			101 et. Seq	The sampling sites are based within the legal Delta boundaries.
2	Implementing an applicable TMDL	X			101 et. Seq	TMDLs implemented: chlorpyrifos, diazinon, salt/boron, Dissolved oxygen.

Footnotes

- (1) Monitoring and Reporting Program Order No. R5-2008-0005 for Coalition Groups under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Amended Order No. R5-2006-0053. Section II.D (Pages 24 and 25)

Item No.	Basin Plan Component Description ⁽¹⁾	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
		A	U	I		
	B.I. TMDL Chlorpyrifos/Diazinon					
1	Determine compliance with established water quality objectives and the loading capacity concentration applicable to diazinon and chlorpyrifos in the San Joaquin Delta.	X			104,109	Four sites used to assess load capacity (Delta) and 10 sites monitored for load allocation (tributaries). Total of one chlorpyrifos and zero diazinon exceedance observed in 2012. All sites but Unnamed Drain to Lone Tree Crk. in December met load allocation. The representative sites used to assess loading capacity on page 104 are bolded, but that only includes two of the four sites. Kellogg Creek along Hoffman lane and Sand Creek at Highway 4 Bypass should be included and bolded in Table 37.
2	Determine compliance with established load allocations for diazinon and chlorpyrifos in San Joaquin Delta.	X			109-111	Table 40 reports compliance results relating to loading allocation. The non compliant load allocation occurred in Coalition zone 2, which are associated with the Delta waterways (eastern portion, Stockton ship channel).
3	Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos.	X			100, 111	Conducted surveys and provided documentation of implemented practices. Various management practices awarded grant funding (Approx. 3 million dollars). More than half going to irrigation water management.
4	Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos.	X			82-85	75% of acreage in the first, second and third High Priority areas implemented new management practices, according to the surveys. 100% of the growers in the High Priority areas were surveyed. The percentage of exceedances has been trending downward.
5	Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts.	X			112, 114, 116, 117	Sediment toxicity frequency unchanging. Pyrethroids tend to be the main alternative to chlorpyrifos that could cause sediment toxicity and are trending upward in use on crops: Walnuts, alfalfa, grapes, and almonds.
6	Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants.	X			126, 127	One <i>ceriodaphnia</i> exceedance observed. Chlorpyrifos not detected. Six <i>Hyalella</i> exceedances observed. Pyrethroids found in all six samples and chlorpyrifos detected in five.
7	Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.	X			127	Chlorpyrifos exceedances trending downward. Toxicity is mostly trending downward with the exception of sediment toxicity. Growers are in the process of achieving the lowest pesticide levels technically and economically achievable.

Footnotes

(1) Amendments to Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff Into the Lower San Joaquin River. Final Staff Report October 2005

Item No.	Basin Plan Component Description	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
		A	U	I		
	B.II. TMDL Salt/Boron					
	Salt/Boron TMDL Related Sections					
1	Salt/boron at Vernalis: Nonpoint source dischargers operating under waiver of waste discharge requirements must participate in a Regional Water Board approved real-time management program (basin plan IV 32.04).	X			128	Compliance is being achieved through participation in CV-SALTS and communicating to growers that are found within small portions of Stanislaus River and Northwest Side subareas.
	ILRP Guidance for Mgt Plan Update Report ⁽¹⁾					
2	⁽¹⁾ Lists or describes the affected TMDL sub areas.	X			101, 102	
3	⁽¹⁾ Addresses stated Mgt Plan efforts to meet the TMDL.	X			101 et. Seq	Coalition is communicating with growers in these areas about the Basin Plan requirements.
4	⁽¹⁾ List the sampling site(s) used to implement the TMDL.	X			128	

Footnotes

(1) ILRP Guidance for Management Plan Update Report Items. Submitted to Coalition on 22 October 2009.

Item No.	Basin Plan Component Description	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
		A	U	I		
B.III. TMDL Dissolved Oxygen						
Dissolved Oxygen TMDL Related Sections						
1	Determine compliance with established water quality objectives and the loading capacity applicable to dissolved oxygen in the Stockton Deep Water Ship Channel.	X			130, 131, MRP	Ag influenced tributaries to SJ River Deep Water Ship Channel are routinely monitored as described in the MRPP and Mgt Plan (Zones 2, 4, 5).
⁽¹⁾ ILRP MRP Component Description						
2	⁽¹⁾ Lists or describes the affected TMDL sub areas.	X			130, 131, MRP	
3	⁽¹⁾ Discusses how the Coalition's boundary influences the efforts to implement the DO TMDL.	X			130, 131, MRP	Major source (upstream of SJR) of DO impairment is outside of Coalition boundary. Small portion of the drainage area is within the Coalition boundary.
4	⁽¹⁾ Addresses stated Mgt Plan efforts to meet the TMDL.	X			130, 131, MRP	Coalition collected CDEC monitoring data and reported in AMR. Coalition participates in DO TMDL Working Group meetings.

(1) ILRP Guidance for Management Plan Update Report Items. Submitted to Coalition on 22 October 2009.

Item No.	Basin Plan Component Description	Acceptable	Unacceptable	Incomplete	Page No. (Section No.)	Comments
		A	U	I		
	B.IV. TMDL Methyl Mercury					
	Methyl Mercury TMDL Related Sections					
1	Determine compliance with the 2011 methyl mercury Basin Plan amendment. Phase 1: Conduct studies and pilot projects to evaluate the effectiveness of management practices.	X			132	
2	Determine compliance with the 2011 methyl mercury Basin Plan amendment. Phase 1: Participate in the Delta Mercury Exposure Reduction Program by providing funds or in-kind services.	X			132	Meets requirements within reporting period.