
Central Valley Regional Water Quality Control Board

4 March 2016

Mr. Michael Wackman
San Joaquin & Delta Water Quality Coalition
3294 Ad Art Road
Stockton CA 95215

Mr. Mike Johnson, Program Manager
MLJ-LLC
632 Cantrill Drive
Davis, CA 95618

2015 ANNUAL MONITORING REPORT REVIEW - SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Thank you for submitting the San Joaquin County and Delta Water Quality Coalition (Coalition) Annual Monitoring Report (AMR) and Management Plan Progress Report received on 1 May 2015. The AMR is the first annual report following the March 2014 Order.

Staff has completed a review of each component for compliance with Monitoring and Reporting Program (MRP) Order No. R5-2014-0029-R1, which includes monitoring as described in the Coalition's 2008 Monitoring and Reporting Program (MRP). The 2008 MRP applied until the Executive Officer approved the initial January 2015 Monitoring Plan Update. Staff also reviewed the Management Plan Progress Report to determine monitoring compliance for the reporting period.

The Coalition is complying with the Order requirements. It is understood that the AMR was due before the Farm Evaluation and nitrogen management plan summary information was due. Management practice and nitrogen management plan data will need to be summarized by township in the next AMR.

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

Original signed by:

Susan Fregien, Senior Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

Sue McConnell, Chief
Irrigated Lands Regulatory Program

Enclosure: Staff memo; memo checklist

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

FROM: Chris Jimmerson
Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

DATE: 26 January 2016

SUBJECT: ANNUAL MONITORING REPORT REVIEW – SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

On 1 May 2015, the Central Valley Water Board received the San Joaquin County and Delta Water Quality Coalition's (Coalition) Annual Monitoring Report (AMR) and Management Plan Progress Report.

Based on the submittal timing of this first AMR following the approved Order, it includes a reporting period different than the October through September Water Year reporting period described in the Order No. R5-2014-0029-R1. October 2013 through December 2013 was previously reported in the last AMR. Consequently, this AMR reporting period is January through September 2014.

In this memorandum, staff presents comments pursuant to water quality monitoring under the Order, which includes monitoring as described in the Coalition's 2008 Monitoring and Reporting Program (MRP). The 2008 MRP applies until the Executive Officer approves the initial Monitoring Plan Update. The Monitoring Plan Update was approved after the AMR's reporting period. Staff also reviewed the Management Plan Progress Report to determine monitoring compliance for the reporting period.

The review section titles and section numbers below are the same as the titles used in the AMR Checklist (see attached). Staff derived the checklist directly from the Order and it provides an itemized account of the compliance components. Staff used the checklist to document that the content presented in the AMR complies with the Order.

This memorandum provides a discussion if the minimum requirements were not met or items warranted further explanation. Those items requiring further discussion are briefly noted in the attached checklist.

Item 4.2 Brief Summary of Conclusions and Recommendations

Page 12 of the AMR indicates that the AMR reporting period is January through September 2014, as required in the Order which is not accurate. The Water Year and reporting period, according to the Order is October 2013 through September 2014 for this AMR. However, since the October through December 2013 monitoring data was previously submitted in accordance with the Waiver, this AMR does not need to resubmit this time period. *Attachment B, Section V.C* of the Order states, *"The report shall cover the monitoring periods from the previous hydrologic water year. A hydrologic water year is defined as 1 October through 30 September."* Since, if the Coalition provided October 2013 through December 2013 in a previous AMR, this should have been clearly discussed.

Item 5.1 General Description of Coalition Area

Attachment A of the Order provides Zone characteristics in the seven Coalition Zone areas. Technically new Zone 7 does not apply during the reporting period because the Monitoring Plan Update was completed after the AMR's reporting period. Zone 7 is briefly referenced on Pages 40 and 41. The description of the Zone 7 geographical area will need to be included in the next AMR.

Item 6.2 Monitoring Design Aligns with MRP Plan

This is the first AMR under the 2014 Order. According to Attachment B, Section III.C.2, the Order allows, *"The third-party shall continue monitoring as described in the Coalition's 25 August 2008 Monitoring and Reporting Program Order (2008 MRP) and approved modifications thereto until the Executive Officer has approved the initial Monitoring Plan Update."* The Monitoring Plan Update (MPU) was approved in January 2015, after the AMR's reporting period. Therefore, staff is aware that the monitoring schedule conducted between October 2013 and September 2014 conforms to the 2008 MRP.

Item 6.2.1 Assessment Monitoring

Page 38 refers to Assessment sites. Using the terms found in the Order, it would be more appropriate, going forward, to refer to these sites as Representative sites with assessment monitoring.

Item 6.2.2 Core Monitoring

Page 37 refers to five Core monitoring locations sampled during the reporting period. In the January 2015 MPU approval, the number of Core sites was modified to six, but seven core sites were known prior to the AMR's submittal date. The AMR content should list all of the Core sites found in the Order clarifying that the reporting period was complete before the MPU approval.

Item 9.2 Exceedance Reconciliation

Staff compared the electronic exceedance reports with Appendix III, Table III-2B of the AMR. The AMR table appears to be missing an Old River at the West End of Clifton Court Rd. chlorpyrifos exceedance from the 20 May 2014 event. All other exceedances reconciled with electronically submitted data.

Item 10.1 Data Discussion to Illustrate Compliance

Staff compared the text on pages seven through 10 to Appendix Table III-2B. The text omits Chlorpyrifos and *Pimephales promelas* exceedances found in the table.

Item 12.0-12.4 Summary of Quality Assurance Evaluation

All QA and QC analyses met acceptance criteria for the reporting period at a level greater than 90% as shown in Table 2 below. If the lab QC results were outside of the acceptability criteria range, sample results were flagged, as indicated in the Coalition's data appendix, and explained in the AMR text. The Coalition met the hold-times 97% of the time for all analytes.

Table 2: Quality Assurance and Quality Control Percent Acceptance

	Field Blank	Field Duplicate	Method Blank	Lab Control Spike	Lab Control Spike Duplicate	Matrix Spike	Matrix Spike Duplicate	Lab Duplicate	Surrogate Recovery
% Acceptance	100.00%	97.78%	99.48%	99.51%	100.00%	94.38%	98.75%	100.00%	93.36%

Item 14.2 Pesticide Use Data

At the time the Coalition submitted the AMR, some 2014 year pesticide use report data was not available from Contra Costa, San Joaquin, and Stanislaus counties. For the PUR data not available during the AMR reporting period, the Coalition indicated that it will complete an addendum when the PUR information becomes available. Unless the PUR information causes the Coalition to modify the sampling routine in this water year, staff recommends submission of the PUR information in the next AMR rather than providing an addendum.

Item 19.1 Summary of Mitigation Monitoring

As part of the AMR, the third-party shall report on the CEQA mitigation measures reported by growers to meet the provisions of the Order and any mitigation measures the Coalition has implemented on behalf of its members. This section (page 204) did not include any mitigation measures for the reporting period. However, staff identified that mitigation monitoring included member education concerning the use of Polyacrylamides (PAMs) for sediment control (Mitigation Measure FISH-MM-2) and grower assistance with sources of financial assistance (Mitigation Measure AG-MM-1) during the reporting period. These are found in other sections of the AMR and should be referenced on page 204 of the AMR.

Item 20 Management Plan Progress Report

The AMR provides status reports on management plan monitoring and TMDL compliance monitoring. The AMR reported one chlorpyrifos exceedance during the reporting period.

When referring to the Coalition's annual management plan, please refer to it as the Management Plan Progress Report instead of Management Plan Update Report.

Item 20.2.2 New Management Plans

As a result of exceedances observed from January to September 2013, nine new management plans are required. These include: Bacon Island Pump @ Old River (DO, SC, arsenic and *E.coli*), Kellogg Creek along Hoffman Lane (DO), Empire Tract @ 8 Mile Rd (SC), French Camp Slough @ Airport Way (diuron and *Selenastrum capricornutum*) and Mokelumne River @ Bruella Rd (*Selenastrum capricornutum*).

Item 22 Summary and Recommendations

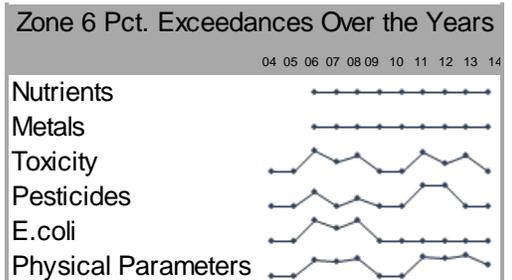
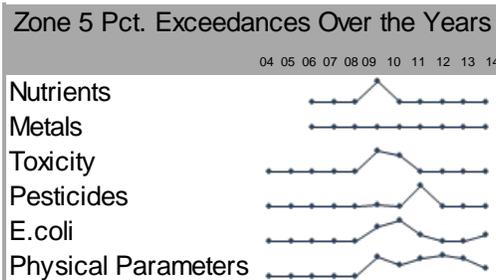
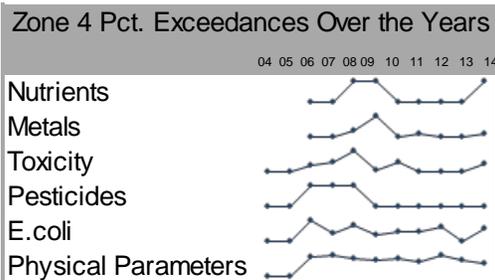
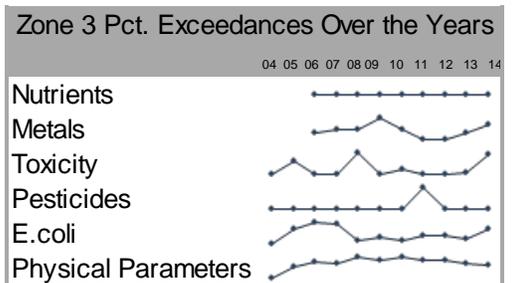
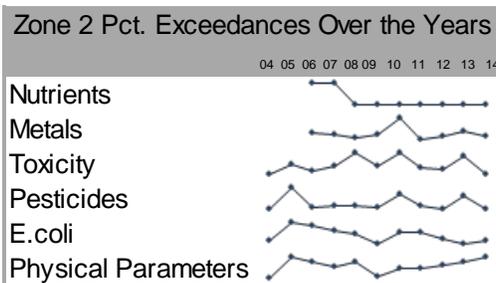
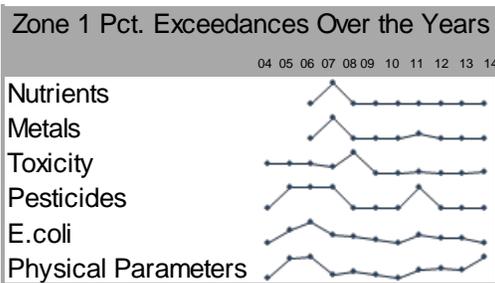
The AMR's Tables 77, 78, and 79, page 214, reports the percent exceedances for only analytes applied by agriculture, thus inadvertently omitting non-ag results which should also be summarized as part of the Order. While the distinction between "applied by agriculture" is informative, the AMR would be more transparent with "all" results in the same table or in an additional table. Staff prepared Table 1 below that is similar to the AMR's Table 77 to include all reported results during the same time period. For summary purposes, staff arranged analytes in groups for physical parameters, nutrients, metals, pesticides, toxicity, and *E.coli*.

Table 1: Percent Exceedances 2008 through 2014.

Group	Pct. Exceedances													
	2008	2009	2010	2011	2012	2013	2014	08	09	10	11	12	13	14
Physical Parameters	17%	14%	15%	14%	16%	16%	16%							
Nutrients	0%	1%	0%	0%	0%	0%	0%							
Metals	3%	3%	4%	1%	6%	2%	3%							
Pesticides	2%	1%	1%	1%	1%	0%	0%							
Toxicity	19%	4%	6%	6%	7%	5%	5%							
<i>E.coli</i>	36%	12%	18%	19%	18%	6%	19%							

Since the Coalition began focused outreach, the proportion of nutrients, metals, pesticides and toxicity exceedances have remained consistent over the years in the Coalition area. According to Table 1, physical parameters and *E.coli* remain a common problem and metals are about the same. These will require source studies since it appears that implemented management practices have not made any significant improvements. The Coalition will prepare source studies by 23 March 2016, according to its approved Surface Water Quality Management Plan.

The AMR provides a detailed analysis of trends in overall water quality conditions in the Coalition area and for each Zone. To summarize the trends in water quality, staff prepared the charts below presenting the percent exceedance trends over time. Based on the charts, some improvement has been made (e.g. *E.coli* in Zone 1 and pesticides in Zone 4). Zone 3 appears to have continued problems with metals, toxicity, and *E.coli*. Zone 4 is trending with an upward nutrient trend.



Annual Monitoring Report Review Checklist

Report Name: San Joaquin County and Delta Water Coalition Annual Monitoring Report								
Submittal Date: 1 May 2015, Reporting period Jan - Sep 2014, WDR Mar 2014								
Item No.			AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
1	Signed Transmittal Letter							
	1.1		Penalty of Perjury Statement	X				
	1.2		Signature of Authorized Coalition Representative	X				
	1.3		Dated	X				
	1.4		Submitted on time	X				
2	Title Page							
	2.1		Report title	X				
	2.2		Date of the report	X				
	2.3		Monitoring date range covered by the report	X				AMR range is Jan - Dec 2014. Date range modified due to Oct - Dec previously submitted in prior AMR. Next AMR should be Oct - Sept.
	2.4		Coalition Group name	X				
3	Table of Contents							
	3.1		List of sections/chapters, tables, figures, appendices/attachments with page numbers	X				
4	Executive Summary							
	4.1		Summary of key results and activities		X		7-10	Chlorpyrifos and pimephales exceedances in text omitted in last paragraph page 8.
	4.2		Brief summary of conclusions and recommendations	X			12	Monitoring data from Oct - Dec 2013 not included because it was already submitted. The next AMR requires the full WY to be reported in the AMR. See memo.
5	Description of the Coalition Group Geographical Area							

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
5.1		General description of relevant geographic features of the Coalition area, such as location and extent of area, major landforms, land uses, vegetation types, crop types, climate patterns, key waterways, and cities	X			13-14	Zone 7 will need to be included in the next AMR. See memo
6	Monitoring Objectives and Design						
6.1		Brief description of monitoring objectives (references to section and page numbers in MRP or QAPP, as appropriate)	X			37	Monitoring objectives found on pages 37-39.
6.2		Monitoring design aligns with MRP Plan, any deviations from MRP Plan or QAPP are described (references to section and page number in MRP Plan or QAPP, as appropriate)	X			37	The AMR says the Monitoring schedule and frequency are under Conditions of the Waiver, until the Executive Officer approves Monitoring Plan Update. The MPU was approved January 2015 after the AMR's reporting period.
	6.2.1	Assessment Monitoring: sites, parameters, schedule	X			38	AMR refers to Assessment sites. As per the Order it should refer to Representative sites in future reports.
	6.2.2	Core Monitoring: sites, parameters, schedule	X			37-38	There are six core sites approved in the Jan 2015 MPU.
	6.2.3	Special monitoring (Management Plan, TMDL, source identification): sites, parameters, schedule	X			38	Source identification workplans to be developed by 23 March. TMDL monitoring reported one chlorpyrifos exceedance and zero diazinon exceedances. DO, salt, boron, methylmercury TMDL monitoring conducted as per Order.
7	Sampling Site Descriptions and Rainfall Records for the time period covered under the AMR						
7.1		Electronic copies of photos clearly labeled with CEDEN comparable station code and date	X				Quarterly surface water monitoring data submittal includes electronic copies of site photos with CEDEN comparable station codes and dates.
7.2		Sampling site name and description (e.g. geographic area, watershed, crop type and drainages that the site represents), or unique information about the site or surrounding area	X			23-31	Zone 7 will need to be included in the next AMR. See memo
7.3		Rainfall records in graphic or narrative form (in inches of precipitation)	X			32-36	The Coalition conducted two storm monitoring events.
8	Location Maps(s) of sampling sites, crops, and land uses						

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
8.1		Location maps show sampling sites, crops, and land use with informative level of detail	X			various pgs, AppVII	All maps satisfactorily include sufficient level of detail.
	8.1.1	Datum identified on map (<u>must be</u> WGS 1984 or NAD 1983)	X			various pgs, AppVII	
	8.1.2	Source and date of all data layers identified on map	X			various pgs, AppVII	All maps include required layer information.
8.2		Accompanying GIS shapefile or geodatabase of monitoring site and monitoring well information include the CEDEN comparable site code and name (surface water) and GPS coordinates (monitored sites only).	X				Shape files provided in AMR attachment. Site Code found in Table 3.
8.3		A list or table indicates: site name, ID/well number, CEDEN site code (if applicable), and GPS coordinates (latitude and longitude in decimal degrees to at least five decimal places)	X			Table 3	Site name, GPS coordinates found in table.
9	Tabulated Results						
9.1		Data are in tabular form, clearly organized and readily discernible	X			AppIII	
9.2		Previously reported exceedances match exceedances identified in the AMR		X		AppIII	Table III-2B missing Old River at the West End of Clifton Court Rd. chlorpyrifos exceedance from the 20 May 2014 event.
9.3		All required constituents for each site have reported results	X			AppIII	
9.4		All necessary re-sampling completed and results reported	X			AppIII	
10	Data Discussion to Illustrate Compliance						
10.1		Results discussed in text agree with tabulated data		X		42-49	Page 7-10 does not agree with Table III-2B. Chlorpyrifos and Pimephales exceedances don't agree.
10.2		Discussion illustrates compliance, or if a required component was not met an explanation of missing data or a reason for non-compliance is included		X		42-49	Explanation not provided for reporting period not agreeing with Order. See item 4.2 in memo.
10.3		Results are compared to ILRP requirements, water quality standards and trigger limits; toxicity results, TIE's and possible causes of toxicity are discussed	X			42-49, 99 et al	
11	Description of sampling and analytical methods used						

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
11.1		Description of sampling methods used (e.g. type of collection, collection containers, sample preservation, transportation, handling, field measurements), with references to SOP's if appropriate	X			42-44	
11.2		Description of analytical methods used	X			44-46	
12	Summary of Quality Assurance Evaluation results						
12.1		Acceptance criteria for all field and laboratory QA/QC measurements identified and in agreement with ILRP requirements; any adjustments to acceptance criteria documented and discussed	X			53-60	Met acceptance criteria > 90% of the time. See memorandum.
12.2		Summary of accuracy (lab control spike and matrix spike recovery) and precision (RPD for field duplicate, LCS/LCSD and MS/MSD pairs) included for all constituents and tests	X			53-60	See memorandum.
12.3		QA/QC results that did not meet acceptance criteria identified in a table or narrative description that is prepared by the Coalition (not laboratories)	X			62-98	>90% met criteria
	12.3.1	Discussion of how the failed QA/QC results affect the validity of the reported data	X			50	Failures did not affect data usability.
	12.3.2	Corrective actions for QA/QC results that did not meet acceptance criteria are described, laboratory exception reports are included when samples are reanalyzed due to exceedance of the linear range	X			61	
12.4		Both field and laboratory completeness are calculated and reported; overall Project completeness is determined	X			55	Achieved >90%
13	Flow Monitoring Method(s)						
13.1		The method used to obtain flow measurement at each monitoring site during each monitoring event is listed	X			44	
14	Summary of Exceedance Reports submitted during the reporting period and related pesticide use information						
14.1		Summary of all Exceedance Reports submitted during the AMR period is included	X			110-124	Summary included.

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
	14.2	Pesticide use data for all pesticide and toxicity exceedances occurring during the AMR time period (unless under a Management Plan): all chemicals applied within the monitoring site subwatershed during the four weeks prior to the measured exceedance	X			AppV	The PUR data not available for the reporting period can be submitted in the next AMR - See memorandum.
15	Actions Taken to Address Water Quality Exceedances						
	15.1	Discussion of actions taken to address water quality exceedances during the time frame of the AMR is included	X			125-128, 136	Provided management practice and exceedance information via newsletter and 5 outreach meetings.
	15.2	Updates or additional management practices implemented	X			137, 163	Tables 56 and 57 document newly implemented management practices.
16	Evaluation of Monitoring Data						
	16.1	Identification of spatial trends and patterns in surface and groundwater quality	X			216-235	Spatial frequency of pesticide detections and exceedances overlaid with pesticide use are provided in heat maps.
		16.1.1 Incorporation of pesticide use information, as needed, to assist in data evaluation.	X			216-235	Spatial pesticide use provided in heat maps and charts.
	16.2	Analyze monitoring data to determine if additional sampling locations are needed. Propose schedule for additional monitoring or source studies	X				Source study schedule addressed in 2015 SQMP.
17	Summary of Nitrogen Management Plan information						
	17.1	Aggregate information from Nitrogen Management Plan Summary Reports to characterize the input, uptake, and loss of nitrogen fertilizer application by specific crops.				NA	The nitrogen summary is required in the next AMR. This AMR came due before the June summary due date. NMP must be summarized by township, as per Order.
		17.1.1 Include comparison of farms with same crops, similar soil conditions and similar practices.				NA	
		17.1.2 Submittal of aggregate data in an electronic format, compatible with ArcGIS, identified to at least the township level.				NA	
	17.2	Statistical summary of nitrogen consumption ratios by crop or other equivalent reporting units				NA	
		17.2.1 Estimated crop nitrogen needs for different crop types and soil conditions in percentiles (10th, 25th, 50th, 75th and 90th) and any outliers.				NA	

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
17.3	Quality assessment of collected information by township.			NA		
17.4	Description of corrective actions for deficiencies in quality of data submitted, if identified.			NA		
18	Summary of Management Practice Information					
18.1	Aggregate and summarize information collected from Farm Evaluations.			NA		A summary of management practice information collected from Farm Evaluations is required in the next AMR. AMR came due before the June 2015 summary due date. Data must be summarized by township, as per Order.
	18.1.1 Include quality assessment of the collected information by township (e.g., missing data, potentially incorrect/inaccurate reporting).			NA		
	18.1.2 Description of corrective actions regarding any deficiencies in data quality.			NA		
18.2	Provide individual data records used to develop summary in electronic format, compatible with ArcGIS to at least township level.			NA		
18.3	Changes in patterns of implemented management practices			NA		
19	Summary of Mitigation Monitoring					
19.1	Identify measures implemented by Members or Coalition to mitigate effects of program as identified in CEQA mitigation measures		X		205, 268	The following mitigation measures mentioned elsewhere in the AMR should be reported/referenced in this section: Educate members on use of PAMs, and sources of financial assistance (EQIP) funding allowing members to keep farmland in production.
19.2	Identify potential impact the mitigation measure addressed, the location of the mitigation measure (township range, section), and any steps taken to monitor the success of the measure.		X			
20	Management Plan Progress Report					
20.1	Background	X			155	
	20.1.1 Location map(s) and summary of management plans	X				Maps found in appendices
20.2	Update on exceedances	X			160	

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
	20.2.1 Table tallying all exceedances for management plans	X			160	
	20.2.2 List of new management plans triggered since previous report	X			157	9 new management plans during the reporting period.
	20.2.3 Status update on new management plans	X			159, et seq	Tabulated new management plans.
20.3	Monitoring data collected during reporting period	X			160	Tabulated
	20.3.1 Summary and assessment of management plan monitoring	X			164	
	20.3.2 Summary and assessment of TMDL monitoring	X			174, et seq	
20.4	Outreach, education and collaboration activities	X			125	
	20.4.1 List of outreach activities and information supplied	X			Apdx VI	
	20.4.2 List of collaborative efforts for outreach	X			125,126	Collaboration with County Agricultural Commissioners, Pest Control Advisors and Pesticide Registrants.
20.5	Summary of management practices identified/implemented	X			136, et seq, 261	Summary based on priority site subwatersheds.
	20.5.1 Baseline data	X			136, et seq	Summary based on priority site subwatersheds. Next AMR must be summarized by township.
	20.5.2 Degree of implemented practices	X			136, et seq	Summary based on priority site subwatersheds. Next AMR must be summarized by township.
	20.5.3 Evaluation of management practice effectiveness	X			161	Effectiveness based on grower participation and water quality improvements. No chlorpyrifos exceedances in 1st through 5th priority site subwatersheds.
20.6	Performance Goal and Schedule Evaluation	X			128	Performance goals on track with schedule.
	20.6.1 Progress in meeting performance goals	X			128, et seq	
	20.6.2 Sufficient timeframe to meet scheduled deadlines in Management Plan	X				Time frames are being met
20.7	Recommendations for changes to Management Plan	X				Changes to management plan were requested and reviewed after AMR delivered.
21	Summary of Education & Outreach Activities					

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
21.1	Location, dates, and reason for activities.	X			127	Table 41 summarizes where, when and details of activities.
21.2	Summary of the content at each session.	X			127	Table 41 summarizes where, when and details of activities.
22	Summary and Recommendations					
22.1	Summary of the AMR results and conclusions	X			271 et seq	
22.2	Recommendations are appropriate and adequately detailed	X			271 et seq	Future source studies should be mentioned; 120 days after SQMP approved. Staff notes that source studies to be submitted by 3/23/16 for DO, pH, ammonia, nitrate/nitrite.