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Secretary for Environmental Protection

California Regional Water Quality Control Board
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Arnold Schwarzenegger
Governor

14 June 2010

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EAST SAN JOAQUIN WATER QUALITY COALITION ANNUAL MONITORING REPORT REVIEW AND NOTICE OF VIOLATION

Thank you for the submittal of the East San Joaquin Water Quality Coalition (Coalition) Annual Monitoring Report (AMR), which was received on 1 March 2010. Staff has completed a review (enclosed with this letter) of the AMR for compliance with Monitoring and Reporting Program Order No. R5-2008-0005 (MRP Order).

Staff has noted several areas in which the Coalition continues to comply with the MRP Order reporting requirements (see attached memorandum and AMR Checklist). Additionally, the AMR reporting has improved in the following areas:

- Description of how the Coalition monitoring objectives are met
- Discussion of rainfall data to clearly indicate correlation with storm sampling
- Detailed and clear categorization of exceedances by group of analytes, management plan, MRPP, and non contiguous water body type of exceedances.
- Comprehensive comments from the Coalition resulted in conclusions and recommendations helpful to the five program questions described in the MRP Order.

However, the discontinuation of various MRP Order constituents is not in compliance with the MRP Order and the Coalition's approved MRP Plan. The Coalition's MRP Plan was approved by the Executive Officer, thus, if any changes are needed a request for approval needs to be submitted to the Executive Officer. Pursuant to the MRP Order you were required to complete "assessment monitoring on a monthly basis for 12 months during Year 1 at all Assessment and Core monitoring sites" for all constituents described in Table II.D. Therefore, the Coalition's assessment monitoring is incomplete and monitoring of all MRP Plan constituents will need to be resumed at those assessment monitoring sites (Section 6.a, Staff memorandum).

Additionally, the Coalition will need to submit an update of the monitoring schedule for 2010 by **8 July 2010** (Section 6.a, Staff memorandum). The Coalition will need to submit its next AMR in accordance with the MRP by 1 March 2011, and ensure that it complies with the requirements.

If you have any questions regarding this letter and the attached review, or need any further information, please contact Dania Huggins at (916) 464-48439.

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

Joe Karkoski, Chief
Irrigated Lands Regulatory Program

Enclosure: Staff Review of ESJWQC AMR; AMR

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APPROVED
author _____
senior _____

TO: Susan Fregien
Senior Environmental Scientist
Irrigated Lands Regulatory Program

FROM: Dania Huggins
Water Resources Control Engineer
Irrigated Lands Regulatory Program

DATE: 3 June 2010

SIGNATURE: _____

REVIEW OF 1 MARCH 2010 ANNUAL MONITORING REPORT –
EAST SAN JOAQUIN WATER QUALITY COALITION

On 1 March 2010, the East San Joaquin Water Quality Coalition (Coalition) submitted the 1 March 2010 Annual Monitoring Report (AMR) to the Central Valley Regional Water Quality Control Board Staff (Staff). The monitoring results discussed in the AMR cover the period of 1 October 2008 through 31 December 2009. This is the first AMR required pursuant to the Monitoring and Reporting Program Order No. R5-2008-0005 (MRP Order).

Staff comments are pursuant to the MRP Order and the Coalition's Monitoring and Reporting Program Plan (MRPP). The section titles of this review are the same as the titles used in the AMR Checklist (see attached). Staff derived the AMR Checklist directly from the MRP Order and used the AMR Checklist to verify that the content presented in the AMR met the minimum prescribed report requirements. Staff's review has been divided into the 22 AMR Checklist items and its components. More detailed comments for the items below are provided in the AMR Checklist (attachment).

AMR ITEM NAME FROM CHECK LIST

1. **Signed Transmittal Letter**
   All components of the Transmittal Letter were incorporated in the AMR except for a discussion of the exceedances and actions taken, which was included in the Executive Summary to avoid redundancy of the information given.

2. **Title Page**
   All components of the Title Page were incorporated in the AMR. Staff recommends including the monitoring date range covered by the report, which was included in the "Signed Transmittal Letter," in the Title Page in future AMRs.

3. **Table of Contents**
   The Coalition provided a complete and detailed Table of Contents that included a List of Tables and Figures. Additionally, the Coalition added an "AMR Requirements – Section Key" to facilitate the review process.

4. Executive Summary

Staff verified that the Executive Summary included the required components such as a brief summary of activities, monitoring results, and summarized conclusions.

5. Description of the Coalition Group Geographical Area

The total Coalition acres and the total irrigated acres in Table 1 (page 5) are different than the numbers presented in Table 2 (page 8) and in the MRPP (Table 2, page 10). The Coalition provided all reference dates per County in Table 1; thus, information in Table 2 may need to be updated to reflect the most current land use information. Staff also provided comments and recommendations on the maps included in this section (Section A.8, Staff Review Letter).

6. Monitoring Objectives and Design

(a) Monitoring Objectives and Design (Sections 6.1 and 6.2, AMR Checklist)
As stated in the MRP Order "Monthly sampling events shall be scheduled to attempt to capture at least two storm runoff events per year. No more than one complete sample per month is required" (MRP Order, page 10). The Coalition provided the rationale for when samples were not collected (e.g. dry site). For example, in Zone 6, there are two sites: Ash Slough @ Ave 21 (assessment), for which the Coalition was able to collect samples in 1 of the 15 events (05/19/09); and Cottonwood Creek @ Rd 20 (core) where samples were collected in 7 of the 15 events (Table 1).

A discussion of the conditions of Zone 6, and the absence of monitoring at Ash Slough @ Ave 21 (due to dry conditions) occurred on 5 May 2009, during the second quarterly Management Plan meeting. The Coalition explained that the entire Zone 6 is the southernmost zone of the Coalition region and has the second sandiest soils (average of 64%) compared to the other zones. Due to the sandy soils, there is minimum runoff during storm and irrigation seasons and creeks in this area (such as Ash Slough) are often dry. Most orchards and vineyards within this zone are irrigated using drip or microspray which generate little to no runoff. The Coalition has three other sites in this zone: Cottonwood Creek @ Rd 20, Berenda Slough along Avenue 18 ½, and Dry Creek @ Rd 18. Assessment of Zone 6 and the MRPP monitoring objectives 1, 2, and 3 may not be attainable if there is insufficient data available. Therefore, Staff recommends stopping monitoring at Ash Slough @ Ave 21 and rotating the assessment monitoring to one of the other three sites, preferably before irrigation season 2010 starts. The criteria for determination of the appropriate site should be discussed with Staff.

Based on the percent of events with samples collected (Table 1), assessment monitoring in Zones 3 and 4, and potential review of the monitoring strategy needs to occur (Table 1).

Table 1. Summary of assessment and core monitoring for each zone.

Zone	Total No Sample Events	Total No Events with Samples Collected		% Events with Samples Collected	
		Assessment	Core	Assessment	Core
1	15	15	15	100	100
2	15	9	15	60	100
3	16	5	10	33	67
4	15	7	15	47	100
5	15	15	13	100	87
6	15	1	7	7	47

The coalition discontinued monitoring for Group A Pesticides, Organochlorines, TKN, Ortophosphate as P, glyphosate, paraquat, lead, molybdenum, cadmium, and arsenic in May 2009. The rationale for dropping these constituents was provided in an amendment to the MRP Plan on 14 May 2009. However, without a discussion among Staff and the Coalition regarding these amendments to the MRP Plan, and a formal approval to discontinue monitoring of these constituents, the Coalition will need to resume normal MRP Plan monitoring as approved on 15 September 2008.

As described in the approved MRP Plan, if no detections were found after monitoring for Group A Pesticides during 2008/2009, the Coalition could request the removal of Group A Pesticides from 2010 monitoring. Therefore, if the MRP Plan conditions are met, Staff recommends that the Coalition submit a request to the Executive Officer to discontinue monitoring for Group A Pesticides. Staff will be addressing Organochlorine monitoring and Management Plans through the TIC process. Therefore, Staff will send the necessary announcements when these discussions begin and encourages the Coalition to participate. For the remaining constituents: TKN, Ortophosphate as P, glyphosate, paraquat, lead, molybdenum, cadmium, and arsenic, Staff will discuss a potential revised strategy to monitor for these constituents with the Coalition during the next quarterly Management Plan meeting (3 August 2010).

Since various MRP Plan amendments have occurred since the MRP Plan was approved (15 September 2008), Staff recommends that the Coalition add a summary of all MRP Plan amendments in the AMR (and subsequent AMRs) (see example provided in Attachment 2). In addition, Staff recommends for the Coalition to submit a monitoring schedule for 2010, which should reflect all amendments to the MRP Plan (e.g. tables, schedules, monitoring constituents. See example provided in Attachment 3). This monitoring schedule for 2010 will help Staff determine the Coalition's current monitoring status.

(b) Monitoring parameters and Source Identification Strategies (Sections 6.2.2 and 6.2.7 AMR Check List)
Nutrients, Physical Parameters, and Field Parameters (Page 29, AMR)
The Coalition states that through the "analysis of monitoring data" and, if necessary, "inclusion of special studies" the potential source of these exceedances may be determined and the appropriate management practices be recommended. However, there is no approximate time frame of when the "analysis of monitoring data" will be completed.

E.coli (Pages 29 and 30, AMR)
The Coalition indicated on page 30 of the AMR that "the most prominent source of bacteria being discharged into water bodies is human" (2006, *E.coli* study). This statement does not align with the study design and interpretation of the data and actual results (which was based on bacteroides, not E.coli). Without further evaluation, the source of *E.coli* is not conclusive. This statement and potential source information should be revised for the 2011 AMR (For more information refer to 2008 Fact Sheet for Pathogen Source Identification Study).

7. Sampling Site Descriptions and Rainfall Records

(a) Sampling Site Descriptions (Section 7.1, AMR Check List)
Complete site descriptions are provided by the Coalition (e.g. site name, station code, GPS coordinates, and so forth). The number of irrigated acres have been updated since the submission of the last SAMR (1 March 2009). However, the reference (source and date) for the information given is not provided in this section. The sum of the irrigated acres of all sites in the "Site Subwatersheds Descriptions" section (pages 34 through 36) totals 390,384 acres (Table 2). The approximate number of irrigated acres in the Coalition is 919,730 acres (page 5, AMR). Therefore, it is not clear if there is a percent of irrigated area that is not being represented during the current monitoring.

Table 2. Number of Irrigated Acres per Site Subwatershed

Site Number	Site Subwatershed	Irrig Acres
1	Ash Slough @ Avenue 21	29,613
2	Cottonwood Creek @ Road 20	37,360
3	Deadman Creek @ Gurr Rd	39,789
4	Deadman Creek @ Highway 59	36,543
5	Dry Creek @ Oakdale Ave	13,564
6	Dry Creek @ Waterford Rd	15,175
7	Dry Creek @ Wellsford Road	23,331
8	Duck Slough @ Gurr Road	21,082
9	Duck Slough @ Hwy 99	10,695
10	Highline Canal @ Highway 99	35,220
11	Highline Canal @ Lombardy Road	30,154
12	Hilmar Drain @ Central Ave	1,898
13	Howard Lateral @ Hwy 140	3,876

Site Number	Site Subwatershed	Irrig Acres
14	Lateral 2 1/2 near Keyes Rd	32,740
15	Merced River @ Santa Fe Drive	33,421
16	Miles Creek @ Reilly Rd.	9,840
17	Mootz Drain downstream of Langworth Pond	2,829
18	Mustang Creek @ East Ave	9,643
19	Prairie Flower Drain @ Crows Landing Road	3,611
Total Irrigated acres (sum 1 thru 19)		**390,384**
Total Irrigated acres in the Coalition (pg 5)		**919,730**
Percent of area represented by the above sites		42.5

(b) Rainfall Records (Section 7.2, AMR Check List)
Detailed description of rainfall records (text and graphs) is provided by the Coalition. All information is associated with the corresponding sampling.

8. Location Maps(s) of sampling sites, crops, and land uses
The source and date of all the data layers is identified on Table 1 (page 5, AMR) but not in maps or legend figures. Since land use information changes continuously, it is a requirement of the MRP Order to provide the source and date of the data (e.g. land use data). Therefore, this information should clearly be identified on the maps. The 2011 AMR must reference the source and date on the maps.

9. Tabulated Results
The Coalition provided the necessary information for all components of this element.
Instantaneous Loads (page 46, AMR)
Even though instantaneous loads are not a requirement of the MRP Order, the Coalition has provided Staff with loads for any detectable analyte with corresponding site flow. This information has been provided to Staff to provide a context for the concentrations of various constituents at the time that samples were collected. Using the instantaneous load formula described in the AMR (page 46) is appropriate for describing AMR monitoring results from MRPP monitoring sites. However, "More rigorous load calculations might be required for TMDL or other programs needs (page 14, QAPP, MRP Order)." Therefore, the Coalition should use the appropriate equations for TMDL requirements in other MRP Plan related documents such as the Annual Management Plan Update Report (e.g. Section 6, page IV-36.02, Water Quality Control Plan for the Sacramento River and San Joaquin River Basins [Basin Plan]).

10. Discussion to Illustrate Compliance
Precision, Accuracy, and Completeness (page 65 through 97, AMR)
For chemistry analysis, the Coalition obtained 100% completeness for all the environmental samples. The correct number of duplicates and field blanks were collected above the minimum 5% rate. All quality assurance (QA) and quality control (QC) analyses met acceptance criteria for the reporting period at a level greater than 90% (Table 3). If the laboratory QCs were outside of acceptability criteria range, these sample results were flagged, as indicated in the Coalition's data appendix, and

thoroughly explained in the AMR text. The Coalition met all of the hold-times for all analytes.

Table 3. Summary of Percent Acceptable Samples

Quality Control Criteria	Percent Acceptable Samples
Field Blank	99.4
Equipment Blank[1] and Travel Blanks[2]	100
Field Duplicate	94.0
Method Blank	99.9
Lab Control Spike	99.1
Lab Control Spike Duplicate	94.3
Matrix Spike	96.1
Matrix Spike Duplicate	96.7
Lab Duplicate	98.6
Surrogate Recovery	98.2

1 Equipment Blank = Dissolved metals

2 Travel Blanks = Total metals

Overall, 90% or greater of the QC measurements met the requirements. The Coalition thoroughly explained the QA/QC results for each constituent group in the AMR. All field and analytical methods met the conditions of the MRP Order. TIEs were performed for all samples when survival or growth was 50 percent or less compared to the control and when the DO and ammonia levels were stable.

11. Items 11 through 21

The Coalition provided the necessary information for all components of items 11 through 21. Staff comments for the corresponding items are found in the AMR Checklist (Attachment 1).

22. Conclusions and Recommendations

The Coalition has improved this section from the previous AMR. The Coalition conclusions and recommendations are provided through answers given to the five program questions described in the MRP Order. Rationale is given for each of the answers when the information is not currently available, such is the case for:

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?

Although a detailed response is provided by the Coalition based on whether the aquatic beneficial uses (BUs) are met, in some instances the answer might trigger more questions. For example, in Table 43 (page 152), Highline Canal @ Hwy 99, the BUs were met during 2004-2007, but not in 2008 and 2009. Another example is the high priority area Prairie Flower @ Crows Landing Rd., for which BUs have not been met for any of the above reporting periods. However, knowing that Prairie Flower @ Crows Landing Rd is an area heavily influenced by dairy operations might explain some of the sources contributing to the exceedances found in the area. Therefore, the answer whether BUs are being met might not be strictly dependent on the Coalition's efforts.

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 information?

The Coalition provided a breakdown of exceedances by Zone (Tables 4 and 5). However, a discussion of how the chlorpyrifos and diuron exceedances found in Zone 1 are related to irrigated agriculture activities in this Zone is missing.

Table 4. Percent of exceedances per zone

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Coalition wide
5.9%	12.8%	7.7%	1.9%	5.0%	3.5 %	5.9%

Table 5. Percent of exceedances by analyte group

Analyte Group	**Percent Exceedance**
Physical Parameters	16.7%
E. coli	40.7%
Carbamates	0.0%
Organochlorines	0.6%
Organophosphates	0.9%
Group A Pesticides	1.1%
Herbicides	0.3%
Metals	1.5%
Nutrients	12.2%
Water Column Toxicity	5.9%
Sediment Toxicity	10.0%

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 boundaries?

Some of the analyte groups (Table 6) for which the number of exceedances still remain significant are (Table 6): (1) physical parameters; (2) *E.coli*, and (3) nutrients. The Coalition states that it is difficult to determine the source for parameters that are "non-farm inputs" such as "non-conserved constituents (e.g. dissolved oxygen)". In the case of *E.coli* the Coalition states that "*E. coli* source tracking analysis identified the coliform bacteria in the system as originating predominantly from human sources" this statement needs to be revised (see Staff comments on Section A. 6 (b)). Lastly, in the case of nutrients, the Coalition states that nitrate exceedances "may not be a result of fertilizer runoff into waterways. High nitrate is often a result of dairy operations." Therefore, there is uncertainty on the Coalition's part on how to proceed effectively on sourcing and managing the exceedances on these three groups of analytes.

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?

The Coalition provided information based on the 2007 General Survey and the 2009 Individual Surveys (interviews/contacts). The information based on the 2009 Individual Surveys is more representative of the Coalition's current efforts, since documentation and tracking are key components of this survey. However, results only exist for the first three high priority areas. Thus, this answer is going to be completed as the high priority strategy continues through the remaining site-subwatersheds.

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?

Comparing the number of exceedances from the last SAMR reporting period (1 April 2008 to 30 September 2008), 416, to this AMR number of exceedances (1 October 2008 to 31 December 2009), 219, one might state that water quality conditions have improved based solely on these numbers (Table 6). However, before answering this question fully, there are important factors to consider in this analysis such as:

(1) It is difficult to compare 2009 SAMR with 2010 AMR results, since the time range is different (1 April 2008 to 30 September 2008 vs 1 October 2008 to 31 December 2009).
(2) In 2009 the Coalition was operating under a different MRP Order, which included a different monitoring strategy that changed the number of monitoring locations, frequency, and many other key components that could have had an impact on the number of exceedances.
(3) 2009 was the first year for management plan implementation, when compared to any of the previous years (e.g. 2008). Additionally, there has only been one growing season, and it will likely take an entire growing season and the next to see if there is any effect of management practices implementation.
(4) The high priority management plan strategy has been applied only in three areas in which ESJWQC contacted growers, completed a survey, and recommended management practices.
(5) 2009 was a dry year and therefore the ESJWQC did not collect samples at many of their sites because the sites were dry for many of the monitoring events (Table 9, page 47, AMR).
(6) Sample sites have been exchanged for others because of: (a) TMDL requirements, (b) changes in hydrology, (c) and urban or dairy influence.

Comparing the number of exceedances for the three high priority areas, may provide a better indication of the effectiveness of the Coalition on management plan implementation. The overall number of exceedances have decreased from 100 in 2008 to 62 in 2009 (Table 7). The decrease in exceedances became especially significant when comparing pesticides (5 in 2008 to 1 in 2009) and toxicity (15 in 2008 and 1 in 2009, Table 7). Although the implementation of the recommended management practices has not yet been quantified by the Coalition, one can assume that:

(1) Outreach efforts to inform the applicators of the effect of spray drift, conversations with PCAs, voluntarily discontinued use of chlorpyrifos by growers,
(2) Coalition's news letters, and
(3) Individual contact interviews to complete the management practice surveys

could be having a positive effect, which may be reflected in the decreasing number of exceedances (Table 7).

Table 6. Summary of number exceedances by Zone in 2009 SAMR[1] and 2010 AMR[2]

Analytes	Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Total	Total
	2009 SAMR	2010 AMR	2009 SAMR	2010 AMR	2009 SAMR	2010 AMR	2009 SAMR	2010 AMR	2009 SAMR	2010 AMR	2009 SAMR	2010 AMR	2009	2010
Physical Parameters	8	23	106	38	6	15	31	8	25	20	6	2	182	106
E. coli	6	19	19	10	2	2	9	2	10	15	5	2	51	50
Carbamates		0		0		0		0	1	0		0	1	0
Organochlorines		0	2	0		1		0	1	0		0	3	1
Organophosphates	3	3	4	1	4	1	6	1	5	1		0	22	7
Group A Pesticides		0		1		0		1		0		0	0	2
Herbicides		1	1	0		0		0		0		0	1	1
Metals		0	7	0	2	3	12	1	16	6	20	1	57	11
Nutrients		1	30	21		3	4	1		4		0	34	30
Water Column Toxicity		1	20	2	3	0	9	1	6	6	2	0	40	10
Sediment Toxicity*	1	0	7	1	4	0	5	0	7	0	1	0	25	1
TOTAL	18	48	196	74	21	25	76	15	71	52	34	5	416	219

1 – 2009 SAMR = Monitoring and reporting period from 1 April 2008 to 30 September 2008

2 – 2010 AMR = Monitoring and reporting period from 1 October 2008 to 31 December 2009

TABLE 7. ESJWQC Exceedances 2008 vs 2009 for the high priority areas (1)

CONSTITUENTS	2008	2009
Chlorpyrifos	3	1
Other pesticides	2	0
Toxicity	15	1
Metals	7	0
Nutrients	12	16
Physical parameters	41	34
E.coli	20	10
TOTAL	**100**	**62**

(1) The high priority management strategy was applied in 2009 to: Dry Ck @ Wellsford Rd; Duck Slough @ Hwy 99; Prairie Flower Drain @ Crows Landing Rd.

Enclosure:

Attachment 1: AMR Checklist
Attachment 2: Example – MRP Plan Modifications Summary
Attachment 3: Example – ESJWQC Monitoring Schedule for 2010

Annual Monitoring Report Review Checklist

Report Name: 1 March 2010 ESJWQC AMR											
Submittal Date: 3/1/2010											
Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
1	Signed Transmittal Letter										
	1.1				Transmittal letter included	X					
	1.2				Penalty of Purjury Statement	X					
	1.3				Signature of Authorized Coalition Representative	X					
	1.4				Dated	X					
	1.5				Submitted by Deadline	X					
	1.6				Discussion of exceedances	X				2	Found in Exec Smry
	1.7				Discussion of actions taken or planned to correct noted exceedances (or reference to prior correspondance)	X				3	Found in Exec Smry
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			Found in Trans Ltr
	2.4				Coalition Group name	X					
3	Table of Contents										
	3.1				List of sections or chapters with page numbers	X					
4	Executive Summary										
	4.1				Brief summary of activities	X				2 - 3	
	4.2				Brief summary of results	X				2 - 4	
	4.3				Brief summary of conclusions and recommendations	X				4	

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
5	**Description of the Coalition Group Geographical Area**										
	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				5	Total acres (5,500,314) and total irrig acres (919,730) sum for zones does not equal total acres (7,224,793.45) and total irrig acres (987,057.74) from pg 8
6	**Monitoring Objectives and Design**										
	6.1				Monitoring Objectives						
		6.1.1			List or brief description of monitoring objectives based on MRP Plan	X				17, 37	States collected 1 storm event - MRP requires attempt to collect 2 per yr, but no more than 1 event/mo.
		6.1.2			Reference to MRP Plan section and page number where detailed monitoring objectives are found			X			MRP cited, but not section or page number
		6.1.3			Reference to QAPP section and page number where detailed monitoring objectives are found			X			QAPP not referenced
	6.2				Monitoring Design						
		6.2.1			Aligns with monitoring design description in MRP Plan	X				22	The MRPP was appr on 15 Sep 2008 (not 18 Aug 2008)
		6.2.2			Monitoring parameters	X				18 - 20	
		6.2.3			Monitoring frequency	X				18 - 20	
		6.2.4			Time period of monitoring covered in the report	X				2, 33,38	
		6.2.5			Brief description of Management Plan monitoring	X				25 - 27	
		6.2.6			Measurement strategies	X				56 - 58	
		6.2.7			Source Identification strategies	X				28 - 30	States Coalition will use monit data to determine if source is background or applied. When?
		6.2.8			Description of any deviation from the MRP Plan or QAPP	X				16 - 17, 33	

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
		6.2.2			Reference to MRP Plan section and page number where detailed monitoring design is found			X			
		6.2.3			Reference to QAPP section and page number where detailed monitoring design is found			X			
7					**Sampling Site Descriptions and Rainfall Records for the time period covered under the AMR**						
	7.1				Sampling Site Descriptions						
		7.1.1			Site Name	X				33	The number of sites sampled from Oct 08 through Dec 09 is not consistent throughout the report (e.g. pg 16 = 20; pg 23 = 21; pg 32 = 18)
		7.1.2			Site Identification Number	X				33	
		7.1.3			GPS Coordinates	X				33	
		7.1.4			Description of site representativeness (ie what geographic area, watershed, crop type does the site represent)	X				33	Missing the source and date (reference) for the information given (e.g. crop type, number of irrig acres)
		7.1.5			Site-specific monitoring type (core, assessment, special project) information	X				8 (Table 2), 33	
		7.1.6			Any other unique information about the site or surrounding area	X				34 - 36	
	7.2				Rainfall Records						
		7.2.1			Graphic or narrative form, in inches of precipitation	X				36 - 45	
8					**Location Maps(s) of sampling sites, crops, and land uses**						
	8.1				Map(s)						
		8.1.1			Sampling Sites with informative level of detail	X				9 -15	
		8.1.2			Crop Types with informative level of detail	X				9 -15	
		8.1.3			Land Uses with informative level of detail	X				9 -15	
		8.1.4			Datum identified on map as either WGS 1984 or NAD 1983			X		9 -15	

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
		8.1.5			Source and date of all data layers identified on map			X		7 - 15	Source and date are not listed on the maps.
	8.2				List or Table of Monitoring Site Information						
		8.2.1			Site name	X					
		8.2.2			Site identification number	X					
		8.2.3			GPS coordinates at latitude and longitude in decimal degrees to at least five decimal places	X					
9					**Tabulated Results**					App II	
	9.1				Data is in tabular form	X				App II	
	9.2				Data is clearly organized (ie readily discernable)	X				App II	
	9.3				Tabulated results agree with the electronic data submittal results	X				App II	Reviewed exceedance Rpts
	9.4				Tabulated results agree with results discussed in the text	X				App II	
	9.5				Previously reported exceedances match exceedances identified in the AMR	X				App II	
	9.6				Water Hardness is reported for every water column sample	X				App II	Apdx II
	9.7				Hardness-based metals criteria are calculated correctly	X				App II	
		9.7.1			Cadmium	X				App II	
		9.7.2			Copper	X				App II	
		9.7.3			Lead	X				App II	
		9.7.4			Nickel	X				App II	
		9.7.5			Zinc	X				App II	
	9.8				All required constituents for each site have reported results	X				App II	
	9.9				All toxic events were re-sampled and results reported				X		
10					**Data Discussion to Illustrate Compliance**						

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
	10.1				Data discussion to illustrate compliance with the CG Conditional Waiver terms and conditions	X				59	Sediment Toxicity is being analyzed by Nautilus Environmental instead of AQUA-Science. Please review this information accordingly.
		10.1.1			Where compliance not achieved, explanation of why required component not met	X				66	QC lab error, but explained
	10.2				Data discussion to illustrate compliance with water quality standards and trigger limits	X					
		10.2.1			Where compliance not achieved, explanation of missing data and/or reason for non-compliance	X				63 - 76	
11					**Electronic data submitted in a SWAMP comparable format, either Option A or B**						
	11.1				Option A. Electronic submittal data package in spreasheet format						
		11.1.1			Lab data is entered and and submitted within the ILRP SWAMP comparable data spreadsheets				X		
		11.1.2			ILRP SWAMP comparable field sheets in paper copy				X		
	11.2				Option B. Electronic submittal data package in SWAMP database format						
		11.2.1			All field and lab data is uploaded into a SWAMP comparable database	X					
		11.2.2			Electronic data is formatted to the most current *Required Data Submission Format* document	X					
		11.2.3			Field sample results for lab analyses are included (page 21 #2, MRP)	X					
		11.2.4			Field Quality Control Results						
			11.2.4.1		Spikes	X					
			11.2.4.2		Blanks	X					
			11.2.4.3		Surrogates				X		
			11.2.4.4		Duplicates	X					
			11.2.4.5		Replicates				X		

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
		11.2.5			Laboratory Quality Control Results						
			11.2.5.1		Spikes	X					
			11.2.5.2		Blanks	X					
			11.2.5.3		Surrogates	X					
			11.2.5.4		Certified Reference Materials	X					
			11.2.5.5		Duplicates	X					
			11.2.5.6		Replicates	X					
		11.2.6			Toxicity Analyses electronic submittal requirements	X					
			11.2.6.1		Individual sample results	X					
			11.2.6.2		Negative control summary results	X					
			11.2.6.3		Replicate results	X					
			11.2.6.4		Toxicity test water measurements (if daily measurements are taken then min and max of the range must be reported)	X					
				11.2.6.4.1	reported pH measurements in toxicity test waters	X					
				11.2.6.4.2	reported ammonia measurements in toxicity test waters	X					
				11.2.6.4.3	reported temperature measurements in toxicity test waters	X					
				11.2.6.4.4	reported DO measurements in toxicity test waters	X					
		11.2.7			Data not meeting project QA acceptance guidelines is flagged and includes brief notes detailing the problem in the *Comments* field						
12					**Description of sampling and analytical methods used**						
	12.1				Description of sampling methods used	X				56 - 63	See comments in Section 10.1
	12.2				Description of analytical methods used	X				56 - 63	
13					**Copies of chain-of-custody forms and sample receipt documentation**						
	13.1				Copies of all COCs are included	X				Apdx I	
	13.2				COCs are legible	X				Apdx I	

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
	13.3				COCs are completed accurately	X				Apdx I	
14					**Field Data Sheets, Lab Reports, Lab Raw Data**						
	14.1				Field Data Sheets						
		14.1.1			If Coalition chose Option A for electronic data submittal package, field data sheets are the ILRP SWAMP comparable field data sheets (see 11.1) in paper copy	X				Apdx IX	
		14.1.2			Copies of all field data sheets are attached to AMR or provided electronically in attached CD (see 14.1.1)	X				Apdx IX	
		14.1.3			Field sheets are completely filled in	X				Apdx IX	
		14.1.4			Field sheets are legible	X				Apdx IX	
	14.2				Toxicity Lab Reports						
		14.2.1			All toxicity lab reports included as attachments to the AMR OR electronically on a CD	X					Only Oct, Nov, Dec 2009 Lab tox rpts in hard copy, missing Oct 2008 through Dec 2009 in CD. Lab rpts were provided on electronic format (CD) on 1 Apr 2010.
		14.2.2			All toxicity lab report copies submitted are complete	X					
		14.2.3			All toxicity lab reports are signed by authorized lab representative	X					
		14.2.4			Toxicity lab narrative describes all QC failures, analytical problems and anomalous occurrences	X					
		14.2.5			All raw lab data for acceptable toxicity tests is included	X					
		14.2.6			All raw lab data for failed toxicity tests is included	X					
		14.2.7			All original bench sheets showing results of individual replicates, such that all calculations and statistics can be reconstructed	X					
		14.2.8			All QC sample results including field and lab blanks, lab control spikes, matrix spikes, field and lab duplicates, and surrogate recoveries are included	X					
	14.3				Chemistry Lab Reports						

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
		14.3.1			All chemistry lab reports included as attachments to the AMR OR electronically on a CD	X					Only Oct, Nov, Dec 2009 Lab rpts in hard copy, missing Oct 2008 through Dec 2009 in CD. Lab rpts were provided on electronic format (CD) on 1 Apr 2010.
		14.3.2			All chemistry lab report copies submitted are complete	X					
		14.3.3			All chemistry lab reports are signed by authorized lab representative	X					
		14.3.4			Chemistry lab narratives describe all QC failures, analytical problems and anomalous occurrences	X					
		14.3.5			All sample results for contract and subcontract labs including units, RLs and MDLs are included	X					
		14.3.6			Sample preparation, extraction, and analysis dates are included	X					
		14.3.7			All QC sample results including field and lab blanks, lab control spikes, matrix spikes, field and lab duplicates, and surrogate recoveries are included	X					
15					**Associated laboratory and field quality control samples results**						
					These requirements covered under section 14	X					
16					**Summary of Quality Assurance Evaluation results**						
	16.1				Quality Assurance Evaluation for LAB Data						
		16.1.1			Acceptance criteria for all measurements of precision and accuracy are listed and coincide with ILRP requirements in MRP Attachment C, Appendix B	X					
		16.1.2			QA/QC results that did not meet acceptance criteria are identified in a table or narrative description that is prepared by the Coalition (not lab)	X					
		16.1.3			Discussion of how the failed QA/QC results affect the validity of the reported data	X					
		16.1.4			Discussion of corrective actions for QA/QC results that did not meet acceptance criteria is included	X					

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
		16.1.5			Calculation of completeness (percentage of QC data that met acceptance criteria and a determination of project completeness based on this)	X					
		16.1.6			Document and discuss any adjustments made to acceptance criteria	X					
		16.1.7			Laboratory exception reports are included when samples are reanalyzed due to exceedance of the linear range	X					
	16.2				Quality Assurance Evaluation for FIELD Data						
		16.2.1			Acceptance criteria for all measurements of precision and accuracy are listed and coincide with ILRP requirements in MRP Attachment C, Appendix B	X					
		16.2.2			QA/QC results that did not meet acceptance criteria are identified in a table or narrative description that is prepared by the Coalition (not lab)	X					
		16.2.3			Discussion of how the failed QA/QC results affect the validity of the reported data	X					
		16.2.4			Discussion of corrective actions for QA/QC results that did not meet acceptance criteria	X					
		16.2.5			Calculation of completeness (percentage of QC data that met acceptance criteria and a determination of project completeness based on this)	X					
		16.2.6			Document and discuss any adjustments made to acceptance criteria				X		
17					**Flow Monitoring Method(s)**						
	17.1				The method used to obtain flow measurement at each monitoring site during each montoring event is listed	X				58	
18					**Monitoring Site Photos**						

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
	18.1				Photos are included for each monitoring site for every monitoring event, either electronically or in hard copy			X		Apdx VIII	Photos were missing in the original 1 March 2010 AMR. However, photos were provided on 1 April 2010 for all events. Additionally, photos were previously provided with exceedance rpts.
	18.2				Each photo is clearly labeled with site ID and date	X				Apdx VIII	
	18.3				Photos are descriptive and useful	X				Apdx VIII	
19					**Summary of Exceedance Reports submitted during the reporting period and related pesticide use information**						
	19.1				Summary of Exceedance Reports submitted during the AMR period	X				Apdx V	
		19.1.1			Summary includes all needed exceedance reports	X				Apdx V	
	19.2				Pesticide Use Data						
		19.2.1			Pesticide use data is included for all pesticide and toxicity exceedances occurring during the AMR time period (except those that fall under a Mgt Plan)	X				Apdx IV	
		19.2.2			Pesticide use data is directly relevant to the monitoring sites where exceedances occurred	X				115 -129	
		19.2.3			Pesticide use data includes all pesticides applied within the monitoring site drainage area during the four weeks prior to the measured exceedance	X				115 -129	Any outstanding PUR data will be provided in 6/30/10 addendum.
20					**Actions Taken to Address Water Quality Exceedances**						
	20.1				Discussion of actions taken to address water quality exceedances during the time frame of the AMR is included	X				135 -140	
	20.2				Actions taken to address the exceedances are adequate	X				135 -140	
21					**Status update on preparation and implementation of all management plans and other special projects**						
22					**Conclusions and Recommendations**						

Annual Monitoring Report Review Checklist

Item No.					AMR Component Name	A Acceptable	U/I Unacceptable/Incomplete	NI Not Included	NA Not Applicable	Page # (Section #)	Comments
	22.1				Conclusions are supported by the data presented in the AMR	X				151-159	
	22.2				Discussion is adequately detailed	X				151-159	
	22.3				Recommendations are appropriate and adequately detailed	X				159	

Attachment 2: Example – MRP Plan Amendments Summary

Item No.	Amendments Description	MRP Plan Page No	Approved
ESJWQC MRP Plan			15 September 2008
1	Request to stop monitoring at South Slough @ Quinley Rd	Table 4, pg 33 Table 5, pg 39 Table 7, pg 51 Table 10, pg 55	XX June 2010
2	Request to exchange sites: Mootz Drain at Langworth Road for Mootz Drain Downstream of Langworth Pond	Table 4, pg 37 Table 5, pg 39 Table 7, pg 50 Table 10, pg 54 Table 11, pg 57 Table 13, pg 63	18 November 2009
3	Request to submit quarterly monitoring results in electronic format	Table 16, pg 75 (1)	17 May 2010

Note:
(1) Add a foot note that describes that all of these deliverables are submitted electronically

Attachment 3: Example – ESJWQC Monitoring Schedule for 2010

		Nutrients								Parameters							Metals								
Zone	Site name	Ammonia	E.coli	Fecal Coliform	Nitrate as N	Nitrite as Nitrogen	Orthophosphate, soluble	TKN	Phosporous	DO	EC	pH	Turbidity	TOC	TSS	TDS	Arsenic	Boron	Cadmium	Copper	lead	Molybdenum	Nickel,Total	Selenium	Zinc
Zone 1	Dry Creek @ Wellsford Rd	C	C		C	C	C	C	C	C	C	C	C	C	C	C					C				
	Mootz Drain Downstream of Langworth Pond	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Rodden Creek @ Rodden Rd																								
	Burnett Lateral @ 28 Mile Rd																								
Zone 2	Prairie Flower Drain @ Crows Landing	C	C		C	C	C	C	C	C	C	C	C	C	C	C	C								
	Lateral 2 1/2 near Keyes Rd	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Yori Grove Drain @ East Taylor Rd																								
	Levee Drain @ Carpenter Rd																								
	Lateral 5 1/2 @ South Blaker Rd																								
	Unnamed Drain @ Hogin Rd																								
	Lateral 6 and 7 @ Central Ave																								
	Hilmar Drain @ Central Ave																								
	Lower Stevenson @ Faith Home Rd																								
	Hatch Drain @ Tuolumne Rd																								
	Westport Drain @ Vivian Rd																								
Zone 3	Highline Canal @ Hwy 99	C	C		C	C	C	C	C	C	C	C	C	C	C	C									
	Mustang Creek @ East Ave	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Highline Canal @ Lombardy Ave																								
	Peaslee Creek @ Lake Rd																								
Zone 4	Merced River @ Santa Fe Rd	C	C		C	C	C	C	C	C	C	C	C	C	C	C					C				
	Howard Lateral @ Hwy 140	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	McCoy Lateral @ Hwy 140																								
	Unnamed Drain @ Hwy 140																								
	Unnamed Drain near Deep Slough @ West Bose Rd																								
	Unnamed Drain @ Cemetary Rd																								
	Canal Creek @ West Bellevue Rd																								
	South Slough @ Quinley Rd																								
	Livingston Drain @ Robin Ave																								
	Bear Creek @ Kibby Rd																								
	Black Rascal Creek @ Yosemite Rd																								
	Silva Drain @ Meadow Dr																								
Zone 5	Duck Slough @ Gurr Rd	C	C		C	C	C	C	C	C	C	C	C	C	C	C			C						
	Deadman Creek @ Gurr Rd	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Deadman Creek @ Hwy 59																								
	Duck Slough @ Hwy 99																								
	Miles Creek @ Reilly Rd																								
Zone 6	Cottonwood Creek @ Rd 20	C	C		C	C	C	C	C	C	C	C	C	C	C	C									
	Ash Slough @ Ave 21	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Berenda Slough along Ave 18 1/2																								
	Dry Creek @ Rd 18																								

		Pesticides																																												Toxicity			
Zone	Site name	Aldrin	Aldicarb	Atrazine	Azinphos methyl	Carbaryl	Carbofuran	Chlordane	Chlorpyrifos	Cyanazine	Cypermethrin, total	DDD	DDE(p,p')	DDT(p,p')	Demeton-s	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Disulfoton	Diuron	Endosulfan	Endrin	Glyphosate	Heptachlor	Heptachlor Epoxide	Linuron	Malathion	Methamidophos	Methidathion	Methiocarb	Methomyl	Methoxychlor	Molinate	Oxamyl	Paraquat dichloride	Parathion, methyl	Permethrin	Phorate	Phosmet	simazine	Thiobencarb	Total HCH	Toxaphene	Trifluralin	Ceriodaphnia	Hyalella	Pimephales	Selenastrum
Zone 1	Dry Creek @ Wellsford Rd																																													MP	C		MP
	Mootz Drain Downstream of Langworth Pond	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Rodden Creek @ Rodden Rd																																																
	Burnett Lateral @ 28 Mile Rd																																																
Zone 2	Prairie Flower Drain @ Crows Landing																																																
	Lateral 2 1/2 near Keyes Rd	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Yori Grove Drain @ East Taylor Rd																																																
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Zone 3	Highline Canal @ Hwy 99																																																
	Mustang Creek @ East Ave		A	A	A	A	A		A	A		A	A	A	A	A	A	A	A	A	A			A			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A
	Highline Canal @ Lombardy Ave																																																
	Peaslee Creek @ Lake Rd																																																
Zone 4	Merced River @ Santa Fe Rd	C						C	C													C	C		C	C																	C						C
	Howard Lateral @ Hwy 140		A	A	A	A	A		A	A		A	A	A	A	A	A	A	A	A	A			A			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A
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Zone 5	Duck Slough @ Gurr Rd						C		C																																								
	Deadman Creek @ Gurr Rd		A	A	A	A	A		A	A		A	A	A	A	A	A	A	A	A	A			A			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A
	Deadman Creek @ Hwy 59																																																
	Duck Slough @ Hwy 99																																																
	Miles Creek @ Reilly Rd																																																
Zone 6	Cottonwood Creek @ Rd 20									C						C																									C						C	C	C
	Ash Slough @ Ave 21	A	A	A	A	A	A		A	A		A	A	A	A	A	A	A	A	A	A			A			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A
	Berenda Slough along Ave 18 1/2																																																
	Dry Creek @ Rd 18																																																

Core Monitoring = Required to collect samples monthly for: Nutrients, Physical Parameters, Pathogens, Photos, Parameters of Concern
Assessment Monitoring = Required to collect samples monthly for: 303(d), Water Toxicity, any TIEs, Pesticides, Metals, Nutrients, Physical Parameters, Pathogens, Sed Toxicity (2 per yr), Photo
Storm Monitoring = Attempt to capture at least 2 storm events per year

Shaded = active C/A sites. Sampling conducted monthly.