

San Joaquin County and Delta Water Quality Coalition

Lead Agency:
San Joaquin County Resource Conservation District

April 1, 2010

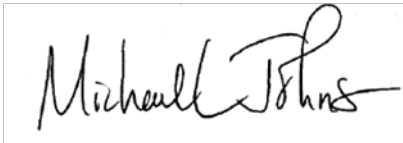
Pamela Creedon
Chris Jimmerson
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon,

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC) is submitting the Management Plan Update Report which updates the SJCDWQC Management Plan approved on January 23, 2009. The report includes information on activities conducted during 2009. The Management Plan update is being submitted to inform the Regional Board of progress made on the management of exceedances within the Coalition region. Included in the report is a status update of constituents and subwatersheds requiring a management plan, an evaluation of the current Management Plan strategy including any updates, a status update of high priority subwatershed performance goals, an evaluation of management practice effectiveness and a status review of TMDL constituents and Basin Plan requirements.

The SJCDWQC will submit an addendum to the Management Plan Update Report by May 30, 2010 which will include a summary of newly implemented management practices within 2008—2010 high priority site subwatersheds.

Submitted respectfully,



Michael L. Johnson
Technical Program Manager

Management Plan Update Report

San Joaquin County & Delta Water Quality Coalition

Submitted on April 1, 2010

Irrigated Lands Regulatory Program

Central Valley Regional Water Quality Control Board



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List of Acronyms

A	Assessment
AMR	Annual Monitoring Report
APN	Assessor Parcel Number
BMP	Best Management Practice
C	Core
CVRWQCB	Central Valley Regional Water Quality Control Board
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DO	Dissolved Oxygen
EC	Specific Conductance
EPA	Environmental Protection Agency
HCH	Hexachlorocyclohexane
ID	Identification
ILRP	Irrigated Land and Regulatory Program
MLJ-LLC	Michael L. Johnson, LLC
MPM	Management Plan Monitoring
MRP	Monitoring and Reporting Program Order No. R5-2008-0005
MRPP	Monitoring and Reporting Program Plan
NA	Not Applicable
ND	Not Detected
NM	Normal Monitoring
PCA	Pesticide Control Advisor
pH	Power of Hydrogen
PUR	Pesticide Use Report
QC	Quality Control
SC	Specific Conductance
SG	Statistically significantly different from control; Greater than 80% threshold
SJCDWQC	San Joaquin County & Delta Water Quality Coalition
SL	Statistically significantly different from control; Less than 80% threshold
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRS	Township, Range, Section
WQO	Water Quality Objective
WQTL	Water Quality Trigger Limit

List of Units

cfs	cubic feet per second
cm	centimeter
L	Liter
lbs	pounds
mg	milligram
MPN/100mL	most probable number per 100 milliliters
sec	second
µg	microgram
µS	microsiemens

EXECUTIVE SUMMARY

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a Management Plan Update Report on the status and methods used to identify agriculture sources, track implemented management practices, and progress toward meeting its performance goals as outlined in the SJCDWQC Management Plan. A Management Plan Update is submitted every April 1 to report on the previous year's activities and update management plan implementation schedules and timelines for reporting to the Central Valley Regional Water Quality Control Board (CVRWQCB or Regional Board). This is the second yearly update to the Coalition's Management Plan.

During 2009, monitoring was conducted as outlined in the Coalition's MRPP. In addition, Management Plan sampling was conducted based on prior exceedances at Coalition monitoring sites. Twenty nine analyses were conducted as Management Plan sampling at the three Management Plan Monitoring (MPM) sites; Duck Creek @ Highway 4, Lone Tree Creek @ Jack Tone Road, and Unnamed Drain to Lone Tree Creek @ Jack Tone Road (also known as Temple Creek). Based on the prioritization of exceedances, MPM was conducted for *Ceriodaphnia dubia* and *Selenastrum capricornutum* toxicity, copper and chlorpyrifos.

As a result of monitoring in 2009, several new site/constituent specific management plans are required including:

- Dissolved Oxygen (DO)
 - Walthall Slough @ Woodward Ave
- Specific Conductance / Total Dissolved Solids (SC/TDS)
 - Walthall Slough @ Woodward Ave
 - South Webb Tract Drain
- *E. coli*
 - Mokelumne River @ Bruella Rd
 - Walthall Slough @ Woodward Ave
- DDT
 - Mokelumne River @ Bruella Rd

The Coalition developed an updated flow chart for its Management Plan Monitoring strategy. The strategy has been updated to include MPM for high priority subwatersheds during Year 0, Year 1, and Year 2. Year 0 refers to the year prior to when the subwatershed will become high priority and allows the Coalition to have recent monitoring data when contacting growers in the subwatershed. When a site becomes a high priority site subwatershed, the Coalition makes contacts to individuals who have the potential for direct drainage and are known to have applied constituents of concern. Contacts occur between January 1 and March 30 of Year 1 in order to schedule meetings between February 1 and September 30. Meetings are used to inform growers of current water quality issues and potential management practices that can be implemented to reduce impairments of water quality due to agricultural inputs. At the

meetings, growers are encouraged to complete surveys and return them to Coalition representatives (either at the meeting or by mail). It is anticipated that all surveys are completed by October 1 of Year 1. Surveys document the current management practices, and they identify additional management practices that the member intends to implement in Year 1 and/or Year 2. The Coalition conducts follow up surveys with growers between September of Year 1 and February of Year 2. Follow up may be extended to Year 3 depending on information obtained from the grower on when they plan to implement practices; in some cases a third year may be necessary for funds to be available for structural improvements. Follow up surveys document the additional practices that the grower planned to implement. The returned surveys document whether or not growers implemented those practices in Year 1 and if not, whether they plan to implement those practices in Year 2. If the grower indicates that they do not intend to implement additional practices despite their previous declaration that they would, they are queried as to why they decided not to implement practices (e.g. they no longer farm, no available funds).

The Coalition submitted Performance Goals on December 23, 2008 in an amendment to the Management Plan. These goals were developed with coordination with Regional Board staff after evaluation of the effectiveness of the Coalition's Management Plan strategy.

The Performance Goals are built on the following actions essential to the Management Plan strategy:

1. Determine number/type of management practices currently in place, based on APN associated with baseline survey responses
2. Grower Group Contacts / Individual Contacts
3. Implementation of new management practices
4. Assess number/type of new management practices implemented
5. Evaluate effectiveness of new management practices

For the current high priority sites, the Coalition has completed Performance Measure 1.1 (Hold at least two meetings for members in the Duck Creek @ Hwy 4 site subwatershed) of Performance Goal 1 (Conduct grower group meetings), and Performance Measure 2.1 (100% of identified growers contacted) and 2.2 (Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed) of Performance Goal 2 (Individually contact members on adjacent properties to waterways where discharges have been identified during winter 2008/09). Performance Measures 3.1 (Obtain current management practice information from 100% of targeted growers) and 3.2 (Document current management practices of the targeted growers) of Performance Goal 3 (Establish current management practices) have been completed in the Duck Creek @ Hwy 4 site subwatershed and are approximately 80% complete in the remaining two site subwatersheds. Performance Measure 3.3 (Document management practices targeted grower was encouraged to implement) is incomplete in all three watersheds and will be completed by the submission on May 30, 2010 of an addendum to the Management Plan Update. Performance Measure 4.1 (By February 2010, document

additional management practices implemented by identified growers) of Performance Goal 4 (Encourage growers to implement additional management practices) is also incomplete and will be completed by the submission on May 30, 2010 of the addendum. Performance Measure 5.1 (Assess water quality results for 90 % completeness, 90% accuracy, and 90% precision from Coalition monitoring location within the priority site subwatershed) of Performance Goal 5 (Evaluate effectiveness of new practices) is complete to April 1, 2010, and Performance Goal 6 (Consult with CVRWQCB at least once during 2008/09) is complete.

Other compliance issues involve TMDL constituents. The SJCDWQC established monitoring and management activities for TMDL constituents as required in the Regional Board's Basin Plan for the Sacramento and San Joaquin River basins.

Chlorpyrifos and Diazinon

The Coalition's Management Plan includes source identification and a means to identify management practices that will need to be implemented in specific areas to achieve expected reductions in chlorpyrifos and diazinon discharges. Improved management practices, including pesticide application practices to address drift, alternative irrigation practices to reduce runoff, and drainage management practices to decrease or reduce the volume of runoff of contaminants have been implemented to meet water quality objectives and load allocations set forth in the Basin Plan. Meetings have been held quarterly with the Regional Water Board to evaluate progress in meeting these reductions, and revisions to the Management Plan will be made if sufficient progress is not being achieved.

To maintain compliance with the Sacramento-San Joaquin Delta Chlorpyrifos and Diazinon TMDL, the Coalition monitors at least one location within each zone (except Zone 6 which is not currently being monitored for any constituent) as representative of the Delta waterways (Appendix 42 in the Basin Plan). Monitoring for chlorpyrifos and diazinon is conducted monthly with the goal of monitoring at least one storm event each year. Representative monitoring provides information on the wide range of discharges and hydrologic conditions likely to occur in the Delta. The Coalition's 2008 MRPP presents the technical approach for an assessment of chlorpyrifos and diazinon applications (MRPP, Pages 17-31).

In 2009, there were a total of 9 exceedances of the chlorpyrifos WQO and no exceedances of the diazinon WQO. Chlorpyrifos exceedances occurred in Zone 2 at Duck Creek @ Hwy 4, French Camp Slough @ Airport Way, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (also known as Temple Creek). There was one exceedance within Zone 5 at Stanislaus River Drain @ South Airport Way however this location was removed from the SJCDWQC MRPP due to the large number of upstream dairies. The location was moved to a downstream sampling point, Walthall Slough @ Woodward Ave where there have been no exceedances of the chlorpyrifos WQO.

Salt and Boron

The Coalition: (1) participates in ongoing Regional Water Board programs for the management of salt and boron, and (2) implements actions required by the Regional Water Board. Coalition representatives attend CV-SALTS meetings and participate in planning and reviewing studies relevant to the development of a Basin Plan amendment for salt and boron.

Dissolved Oxygen

The Coalition is addressing DO exceedances through the Management Prioritization process and is participating in the DO TMDL Technical Working Group meetings. In general, the Coalition will work to comply with the DO Basin Plan load allocations for oxygen demanding substances by December 2011.

Mercury

The Regional Board is in the process of creating a Sacramento River and San Joaquin River Delta mercury control program that includes a methylmercury TMDL. Several meetings have been held over the past year as part of the stakeholder process. Coalition representatives John Herrick and Mike Wackman attend many of the Stakeholder meetings to represent Coalition and Delta interests. The Coalition will attempt to incorporate the outcomes of the mercury control plan into its management plan so that members remain in compliance and continue to implement measures to improve water quality.

INTRODUCTION

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a Management Plan Update Report on the status and methods used to identify agriculture sources, track implemented management practices, and progress toward meeting its performance goals as outlined in the SJCDWQC Management Plan. A Management Plan Update is submitted every April 1 to report on the previous year's activities and update management plan implementation schedules and timelines for reporting to the Central Valley Regional Water Quality Control Board (CVRWQCB or Regional Board). Yearly updates allow the Coalition to assess the need to conduct outreach to growers, evaluate information about pesticide use, and obtain water quality data for both irrigation and dormant seasons.

The Management Plan Update Report includes the following:

1. Status of constituents and subwatersheds requiring a management plan
2. Evaluation of the current Management Plan strategy including any updates
3. Status of high priority subwatershed performance goals
4. Summary of newly implemented management practices
5. Evaluation of management practice effectiveness
6. Status of TMDL constituents and Basin Plan requirements

The Coalition has done a detailed analysis of high priority subwatersheds (2008 – 2010 and 2010 – 2012) including monitoring and exceedance histories, sourcing, outreach and management practice tracking that is supplemental to this report and is attached in Appendix I.

OVERVIEW OF MONITORING AND RESULTS

Table 1. October 2008 – December 2009 Core (C), Assessment (A) and Management Plan (MPM) Monitoring Sites and Locations

Zone	Type	Site Name	Station Code	Latitude	Longitude
1	A	Bear Creek @ North Alpine Rd	531BCANAR	38.07431	-121.2109
1	C	Mokelumne River @ Bruella Rd	531XMRABR	38.1601	-121.2051
2	A*	Duck Creek @ Highway 4	531XDCAHF	37.9491	-121.181
2	C	French Camp Slough @ Airport Way	531SJC504	37.8817	-121.2493
3	A	Drain @ Woodbridge Rd	544DAWRXX	38.15256	-121.50095
3	C	Terminus Tract Drain @ Hwy 12	544XTTHWT	38.1166	-121.4936
4	A	South Webb Tract Drain	544XXSWTD	38.06322	-121.6033
4	C	Roberts Island Drain @ Holt Rd	544RIDAHT	37.9556	-121.4223
5	A	Stanislaus River Drain @ South Airport Way	535SRDSAW	37.70967	-121.23920
5	C	Walthall Slough @ Woodward Ave	544WSAWAV	37.77046	-121.29227
2	MPM*	Duck Creek @ Highway 4	531XDCAHF	37.9491	-121.181
2	MPM	Lone Tree Creek @ Jack Tone Rd	531XLTCJR	37.8376	-121.1438
2	MPM	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	531UDLTAJ	37.8536	-121.1457

A – Assessment Monitoring location

C – Core Monitoring location

MPM – Management Plan Monitoring

*Assessment site also sampled as MPM from October 2008 through March 2009.

2009 Management Plan Sampling

This is the second yearly update to the Coalition’s Management Plan. In this report, previous year’s monitoring data are reviewed and assessed for water quality improvements and exceedances. This update includes an assessment of water quality based on 2009 monitoring results including new exceedances and new site/constituents requiring management plans.

During 2009, monitoring was conducted as outlined in the Coalition’s MRPP. In addition, Management Plan sampling was conducted based on prior exceedances at Coalition monitoring sites. Additional sampling occurred for constituents that had exhibited more than one exceedance of a water quality trigger limit (WQTL) at a site. The Coalition’s Annual Monitoring Report (AMR) submitted on March 1, 2010 lists the locations, dates and type of sampling that was conducted during the irrigation season including Management Plan sampling (MP), Normal monitoring (NM) and sediment sampling. There were a total of 12 sites that were monitored from October 2008 to December 2009 (Table 1). An additional 29 analyses were conducted as Management Plan sampling at three sites in 2009 (Table 2). Based on the prioritization of exceedances, Management Plan Monitoring (MPM) was conducted for *Ceriodaphnia dubia* and *Selenastrum capricornutum* toxicity, copper and chlorpyrifos (Table 2), and results from these samples can be found in Table 3.

Table 2. 2009 Management Plan sampling schedule.

Site Name	Year	Month	<i>C. dubia</i>	<i>S. capricornutum</i>	Copper	Chlorpyrifos
Duck Creek @ Hwy 4	2009	April	X	X		X
Lone Tree Creek @ Jack Tone Rd	2009	April		X		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	April			X	
Duck Creek @ Hwy 4	2009	May		X		X
Lone Tree Creek @ Jack Tone Rd	2009	May		X		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	May		X	X	X
Duck Creek @ Hwy 4	2009	June				X
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	June				X
Duck Creek @ Hwy 4	2009	July	X			X
Lone Tree Creek @ Jack Tone Rd	2009	July			X	X
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	July			X	X
Duck Creek @ Hwy 4	2009	August				X
Lone Tree Creek @ Jack Tone Rd	2009	August			X	X
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	August			X	
Duck Creek @ Hwy 4	2009	September	X			X
Lone Tree Creek @ Jack Tone Rd	2009	September			X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2009	September	X		X	X

Table 3. 2009 Management Plan Monitoring results.

Sample Site	Sample Date	<i>C. dubia</i> (%survival compared to control)	<i>S. capricornutum</i> (% growth compared to the control)	Copper (µg/L)	Chlorpyrifos (µg/L)
Duck Creek @ Hwy 4	4/14/2009	No toxicity	No toxicity		No exceedance
Lone Tree Creek @ Jack Tone Rd	4/14/2009		No toxicity		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	4/14/2009			No exceedance	
Duck Creek @ Hwy 4	5/12/2009		No toxicity		No exceedance
Lone Tree Creek @ Jack Tone Rd	5/12/2009		No toxicity		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	5/12/2009		No toxicity	No exceedance	0.032
Duck Creek @ Hwy 4	6/9/2009				0.07
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	6/9/2009				No exceedance
Duck Creek @ Hwy 4	7/14/2009	0%			0.15
Lone Tree Creek @ Jack Tone Rd	7/14/2009			No exceedance	No exceedance
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	7/14/2009			No exceedance	0.66
Duck Creek @ Hwy 4	8/11/2009				0.031
Lone Tree Creek @ Jack Tone Rd	8/11/2009			No exceedance	0.1
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	8/11/2009			No exceedance	
Duck Creek @ Hwy 4	9/15/2009	No toxicity			No exceedance
Lone Tree Creek @ Jack Tone Rd	9/15/2009	NA		No exceedance	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	9/15/2009	30%		No exceedance	0.086

NA – Not Applicable; no MPM conducted.

2004 - 2009 Exceedances

An important aspect of the SJCDWQC Management Plan is to provide yearly updates of exceedances based on the most recent water quality trigger limits (WQTLs). Table 4 provides a tally of exceedances for sites monitored from 2004 through 2009. Sites not included in this tally, as described in the SJCDWQC Management Plan include Marsh Creek and Potato Slough. In addition, Stanislaus River Drain @ South Airport Way is not included in Table 4 (sampled from October – December 2008) since it was removed from the SJCDWQC MRPP due to the large number of dairies upstream which are covered under the dairy program. The Coalition began monitoring at a downstream location on Walthall Slough in January 2009. Kellogg Creek @ Hwy 4 was removed from Table 4 since it was replaced by Kellogg Creek along Hoffman Lane due to the large amount of urban growth in that area.

Sites monitored as upstream MPM sites in 2008 that experienced exceedances are not included in Table 4 or 5. These sites and associated exceedances were included in the Management Plan Update Report submitted on April 1, 2009 and are referenced in the site subwatershed section of this Management Plan.

Table 5 includes a tally of exceedances experienced since the last update (April 1, 2009) and includes monitoring results from 2009. In both tables, cells with blue highlights indicate exceedances that are under the SJCDWQC Management Plan. In Table 5, green highlights indicate sites/constituents that are included in the SJCDWQC Management Plan due to exceedances experienced in 2009.

Table 4. SJCDWQC exceedance tally based on all results through December 2009.

Sites are listed alphabetically by station name and constituents are listed alphabetically within each of the following groups: field parameters, inorganics, bacteria, metals, pesticides and toxicity. Constituents under a management plan are highlighted.

Station Name	Oxygen, Dissolved, mg/L	pH, none	Specific Conductivity, µS/cm	Total Dissolved Solids, mg/L	Ammonia, mg/L	Nitrate as N, mg/L	E. coli, MPN/100 mL	Arsenic, µg/L	Boron, µg/L	Cadmium, µg/L	Copper Total, µg/L	Lead, µg/L	Molybdenum, µg/L	Nickel, µg/L	Azinphos methyl, µg/L	Carbofuran	Chlorpyrifos, µg/L	Cypermethrin, total, µg/L	DDD (p,p'), µg/L	DDE (p,p'), µg/L	DDT (p,p'), µg/L	Diazinon, µg/L	Dieldrin, µg/L	Dimethoate, µg/L	Disulfoton, µg/L	Diuron, µg/L	Endrin1, µg/L	HCH, delta, µg/L	Linuron, µg/L	Malathion, µg/L	Metidathion	Methomyl, µg/L	Methyl parathion, µg/L	Paraquat dichloride, µg/L	Thiobencarb, µg/L	Simazine, µg/L	C. dubia, Survival (%)	P. promelas, Survival (%)	S. capricornutum, Total Cell	H. azteca, Survival (%)				
Bear Creek @ North Alpine Rd Drain @ Woodbridge Rd	4		5	5			1	5																																				
Duck Creek @ Hwy 4	22	3					6										13				1								1									6		3				
French Camp Slough @ Airport Way	13	3					21			12	2				1	1	9				2	4	1		2						1							2	2	2	3			
Grant Line Canal @ Clifton Court Rd	23	7	19	16	1		20	10		12	6	8		1		1	5			2	1			1														1		2	2			
Grant Line Canal near Calpack Rd	35		42	25	1		19	4		7		1		2			4			1				1	1				1	1								3		10	6			
Kellogg Creek along Hoffman Ln	8	4	3	3		1	4			3										3	2																	2		4	4			
Littlejohns Creek @ Jack Tone Rd	13	1		1			6			5						1	7					1																	1	5	2*			
Lone Tree Creek @ Jack Tone Rd	17	3		1	4		26		3	7	1						7	1		1	1	2			3													2	1	1	2	7	2	
Mokelumne River @ Bruella Rd	5	5					2			3											2																		5		10			
Mormon Slough @ Jack Tone Rd	11	4					1										7																						1	2	4	1		
Roberts Island Drain @ Holt Rd	28		37	26			6										2			3					2														1		5	2		
Roberts Island Drain along House Rd	23	3	22	14			7	1									2	1		2	1																		2*		4	4		
Sand Creek @ Hwy 4 Bypass	25		36	19			17										2	1	5	3	2	7		3		1														3	1	3	10	
South Webb Tract Drain	17	1	5	5	1		5	12	1				1																											1				
Terminus Tract Drain @ Hwy 12	29	1	26	18			9	5									2			1										1										1		4		
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	5	1	2	1			10			5	2				1		13			1					3						1									3	2	5	5	4
Walthall Slough @ Woodward Ave	11		3	3	1		2																					3														1	1	
Grand Total	293	36	200	137	8	1	163	37	1	22	41	15	1	4	1	4	73	2	1	18	11	8	11	2	4	11	1	3	1	3	2	1	1	1	1	7	4	34	5	69	41			

All data were evaluated including field QCs. If a field QC has an exceedance, and the associated environmental sample does NOT have an exceedance, that field QC exceedance is included in the tally.

*Not prioritized for Management Plan Monitoring; both toxic samples were from the same sampling event (sample and resample to test for persistence).

Table 5. SJCDWQC exceedance tally based 2009 storm, irrigation, and fall sampling events.

Sites are listed alphabetically by station name and constituents are listed alphabetically within each of the following groups: field parameters, inorganics, bacteria, metals, pesticides and toxicity. Green highlighted cells refer to sites/constituents that require a management plan due to 2009 irrigation exceedances; blue highlights refer to sites/constituents already in management plans.

Station Name	Oxygen, Dissolved, mg/L	pH, none	Specific Conductivity, µS/cm	Total Dissolved Solids, mg/L	Ammonia, mg/L	E. coli, MPN/100 mL	Arsenic, µg/L	Chlorpyrifos, µg/L	DDT (p,p'), µg/L	HCH, delta, µg/L	Paraquat dichloride, µg/L	C. dubia, Survival (%)	P. promelas, Survival (%)	S. capricornutum, Total Cell Count	H. azteca, Survival (%)
Bear Creek @ North Alpine Rd	1														
Drain @ Woodbridge Rd	2		3	3			3								
Duck Creek @ Hwy 4	6							3				1			
French Camp Slough @ Airport Way	2					1		1							
Lone Tree Creek @ Jack Tone Rd	2							1							
Mokelumne River @ Bruella Rd	1	2				1			1						
Roberts Island Drain @ Holt Rd	4		10	10		1									
South Webb Tract Drain	13	1	5	4	1	3	9				1	1			
Terminus Tract Drain @ Hwy 12	6	1	6	5		1									
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	1							3				1			
Walthall Slough @ Woodward Ave	11		3	3	1	2				3				1	1

All data were evaluated including field QCs. If a field QC has an exceedance, and the associated environmental sample does NOT have an exceedance, that field QC exceedance is included in the tally.

2009 New Site/Constituents Requiring Management Plans

As a result of 2009 monitoring, several new site/constituent specific Management Plans are required (see green highlights in Table 5). Below is a list of constituents with 2009 exceedances that have triggered a new site/constituent specific management plan:

- Dissolved Oxygen (DO)
 - Walthall Slough @ Woodward Ave
- Specific Conductance / Total Dissolved Solids (SC/TDS)
 - Walthall Slough @ Woodward Ave
 - South Webb Tract Drain
- *E. coli*
 - Mokelumne River @ Bruella Rd
 - Walthall Slough @ Woodward Ave
- DDT
 - Mokelumne River @ Bruella Rd

MANAGEMENT PLAN PROCESS

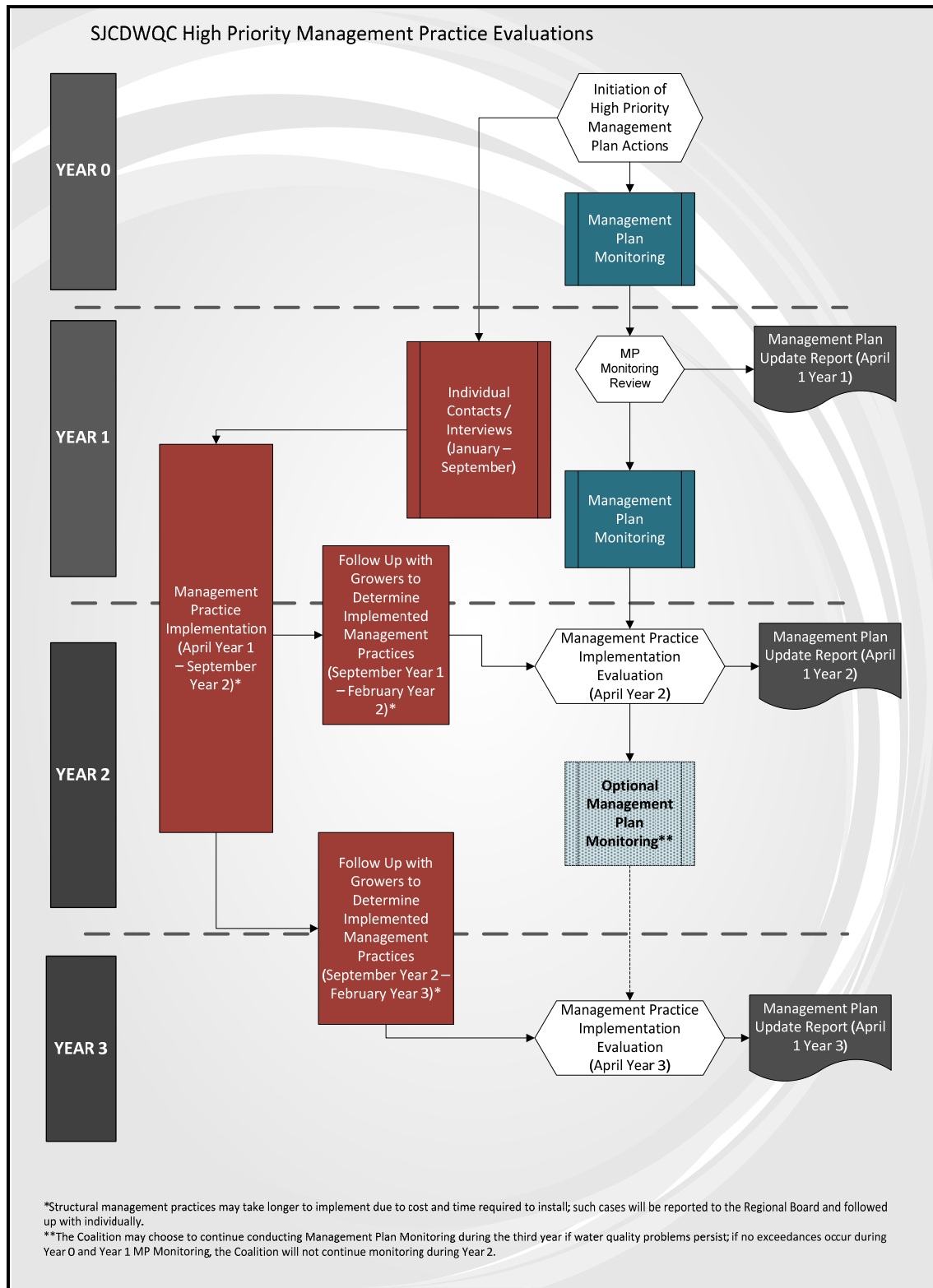
The SJCDWQC Management Plan process was first outlined in the SJCDWQC Management Plan submitted on September 30, 2008. This process was an outline of specific actions that would be taken by the Coalition based on prioritized exceedances. Actions were placed into a framework of years and tiers and the process was diagramed in a flow chart. The Coalition has updated its flow chart of actions based on the monitoring strategy described in the current MRPP which became effective in October 2008. The current monitoring strategy includes a combination of Core and Assessment Monitoring locations with a yearly rotation schedule. Based on this monitoring strategy, the Management Plan flow charts had to be revised since not all sites were monitored for all constituents and many locations would not be monitored until they were rotated into the monitoring schedule (see the SJCDWQC MRPP for details on the monitoring schedule). Flow chart revisions were discussed with Regional Board staff during a pre-quarterly meeting held on October 7, 2009.

Except for South Webb Tract and Walthall Slough, all other subwatersheds under the SJCDWQC Management Plan followed the original Management Plan flow charts requiring additional monitoring in 2007 and upstream monitoring in 2008 during the irrigation season for high priority constituents during months of past exceedances. In 2009, the Coalition was able to utilize source information gained from Management Plan Monitoring during its outreach efforts, especially within high priority site subwatersheds. Due to the extensive amount of monitoring conducted within the Coalition region, the Coalition has focused its efforts on documenting changes in management practices and performing outreach at both an individual and grower group level.

Management Plan Monitoring Strategy

The Coalition developed an updated flow chart for its Management Plan Monitoring (MPM) strategy (Figure 1). The strategy has been updated to include MPM for high priority subwatersheds during Year 0, Year 1, and Year 2. Year 0 refers to the year prior to when the subwatershed will become high priority and allows the Coalition to have recent monitoring data when contacting growers in the subwatershed. If there are two years with no exceedances of high priority constituents (either in Year 0 and Year 1 or Year 1 and Year 2), that site/constituent will be removed from an active Management Plan and will only be monitored when the site is rotated into assessment monitoring.

Figure 1. SJCDWQC High Priority Subwatershed Management Plan Monitoring Strategy and management practice evaluation.



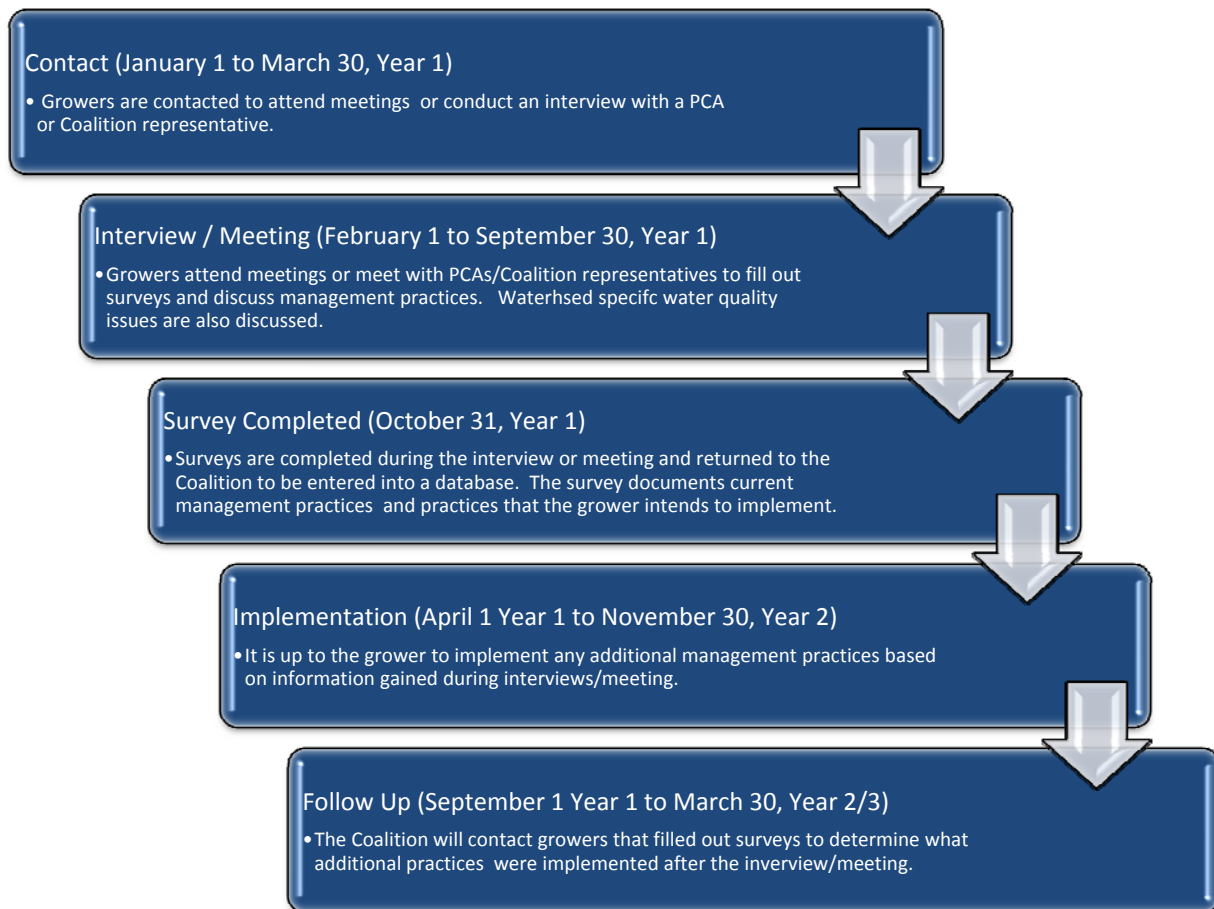
Management Practice Tracking Strategy

The schedule presented in Figure 2 provides a general timeline of actions in Years 1, 2 and 3 of the flow chart in Figure 1. When a site becomes a high priority site subwatershed, the Coalition makes contacts to individuals who have the potential for direct drainage and are known to have applied constituents of concern. Contacts occur between January 1 and March 30 of Year 1 in order to schedule meetings between February 1 and September 30. Meetings are used to inform growers of current water quality issues and potential management practices that can be implemented to reduce impairments of water quality due to agricultural inputs.

At the meetings, growers are encouraged to complete surveys and return them to Coalition representatives (either at the meeting or by mail). It is anticipated that all surveys are completed by October 1 of Year 1. Surveys document the current management practices, and they identify additional management practices that the member intends to implement in Year 1 and/or Year 2. Implementation is anticipated to occur between April of Year 1 and November of year 2 although it is difficult to predict since some practices such as structural management practices may take multiple years to implement.

The Coalition conducts follow up surveys with growers between September of Year 1 and February of Year 2. Follow up may be extended to Year 3 depending on information obtained from the grower on when they plan to implement practices; in some cases a third year may be necessary for funds to be available for structural improvements. Follow up surveys document the additional practices that the grower planned to implement. The returned surveys document whether or not growers implemented those practices in Year 1 and if not, whether they plan to implement those practices in Year 2. If the grower indicates that they do not intend to implement additional practices despite their previous declaration that they would, they are queried as to why they decided not to implement practices (i.e. they no longer farm that parcel, no available funds, etc.).

Figure 2. Schedule for Coalition Management Plan strategy activities to document management practices for high priority subwatersheds.



PRIORITIZATION OF EXCEEDANCES

The SJCDWQC developed a prioritization process which allows the Coalition to focus on constituents of the greatest concern. These constituents are included in the Management Plan process outlined in Figure 3. The prioritization process was developed in collaboration with the Regional Board and allows the Coalition to focus on constituents where sourcing is possible (i.e. pesticide use reports) and for which management practices are available. Following the flow chart in Figure 3, a priority level is assigned to a constituent for a specific site subwatershed. Priority levels determine the level of activity for sourcing, outreach and evaluation. The SJCDWQC Management Plan includes a detailed description of the prioritization process including tiers and actions.

The flow chart in the Management Plan includes a tiered system with specific actions depending on the priority level of the exceedance and the tier in which it is located. Due to changes in the MPM strategies for non-high priority and priority subwatersheds, the actions

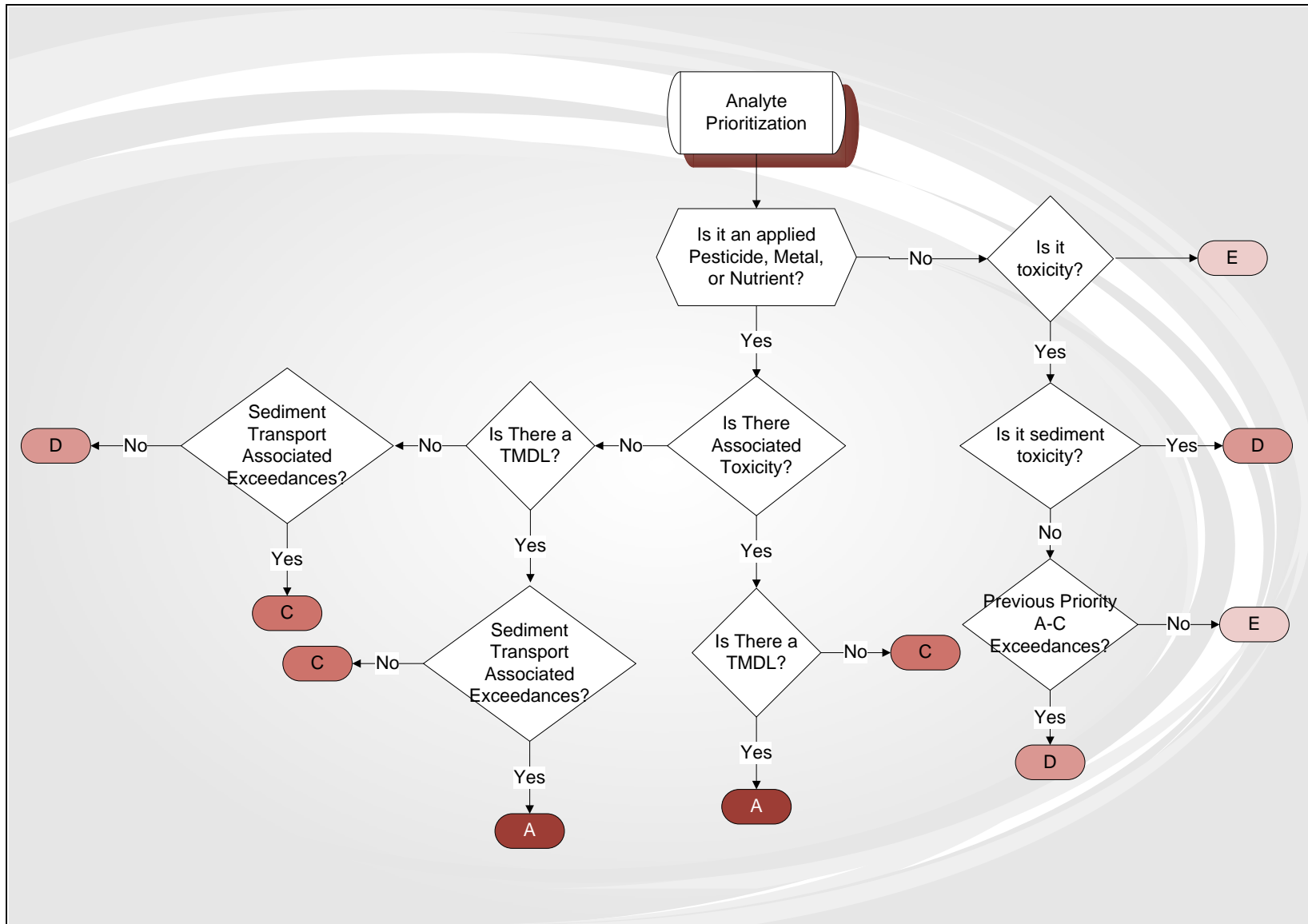
associated with tiers are omitted from this flow chart. The MPM and management practice evaluation strategies are documented in Figures 1-3 above.

Sourcing is still conducted by utilizing pesticide use reports (PUR) and any associated MPM data (may include upstream and/or increased frequency monitoring from previous years). Monitoring is conducted for priority constituents A through D; priority E constituents do not have MPM except for field parameters which are collected each time monitoring occurs.

Outreach occurs for exceedances of all constituents however growers using constituents of high priority (i.e. TMDL pesticides such as chlorpyrifos) are targeted for individual contacts. The Coalition continues to conduct annual meetings and site subwatershed meetings as needed.

The Coalition evaluates management practice information obtained from individual survey contacts including follow up surveys which document newly implemented practices. The Coalition expects that as a direct result of individual contacts and newly implemented practices, downstream water quality will improve. However, it is possible that due to non member actions, there may continue to be downstream water quality impairments. Therefore evaluations of management practices will not only assess water quality but also overall changes in practices at a subwatershed level.

Figure 3. SJCDWQC prioritization process.



MANAGEMENT PLAN DEVELOPMENT TIMELINES

The Coalition submitted on June 5, 2009 a request to extend the dates in its prioritization schedule (originally submitted on December 23, 2008) by one year. The schedule is re-evaluated yearly and updated with new monitoring locations and updates in prioritization based on monitoring results and available resources.

Table 6 provides an updated schedule that includes the approved changes to prioritization years. There are currently 14 site subwatersheds included in the SJCDWQC Management Plan that will become high priority sites between 2008 and 2015.

New sites that were monitored in 2009, that will not be addressed with a detailed, focused management plan approach (i.e. priority site subwatershed) include Bear Creek @ North Alpine Rd, Drain @ Woodbridge Rd, South Webb Tract Drain and Walthall Slough @ Woodward Ave because there were no exceedances of Priority A-D constituents at these locations.

Table 6. Proposed schedule for addressing each site subwatershed with a detailed, focused management plan approach.

Site Subwatershed Name	Year for focused approach
Duck Creek @ Highway 4	2008-2010
Lone Tree Creek @ Jack Tone Rd	2008-2010
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2008-2010
Grant Line Canal @ Clifton Court Rd	2010-2012
Grant Line Canal near Calpack Rd	2010-2012
Littlejohns Creek @ Jack Tone Rd	2010-2012
Terminus Tract Drain @ Hwy12	2011-2013
French Camp Slough @ Airport Way	2011-2013
Mokelumne River @ Bruella Rd	2011-2013
Sand Creek @ Hwy 4 Bypass	2012-2014
Kellogg Creek along Hoffman Lane	2012-2014
Mormon Slough @ Jack Tone Road	2012-2014
Roberts Island Drain @ Holt Rd	2013-2015
Roberts Island Drain along House Rd	2013-2015
Re-evaluate All Site Subwatersheds and Revise Schedule	Annually

PRIORITY SITE MANAGEMENT

Management Objectives

The Coalition has prioritized constituents and site subwatersheds to allow for focused investigation of sources, outreach and education. Prioritization of subwatersheds is based on the number, frequency and magnitude of chlorpyrifos and diazinon exceedances. Other factors considered include size of the subwatershed and known management practices that have been implemented in those areas.

The objective of the prioritization process is to decrease agricultural inputs that contribute to downstream impairments. Although the Coalition is focusing on chlorpyrifos and diazinon exceedances, management practices implemented to reduce the runoff of these constituents will reduce the runoff of other pesticides, nutrients, salts and metals.

The Coalition will monitor for Priority A- D constituents when a site is a high priority subwatershed. The purpose of monitoring is to evaluate improvements in water quality and the effectiveness of management practices (Figure 1). Starting in April 2010, the Coalition will also conduct MPM in site subwatersheds that will become high priority subwatersheds the following year. A site subwatershed analysis was conducted for high priority subwatersheds (2008 -2010 and 2010 -2012) and is included in Appendix I.

2010 Management Plan Monitoring (MPM) Schedule

The SJCDWQC will conduct MPM at the following sites; Years 0, 1 and 2 refer to the year that the site is a high priority site (see Figure 1):

Year 2: First Priority (2008 – 2010)

- Duck Creek @ Hwy 4
- Lone Tree Creek @ Jack Tone Rd
- Unnamed Drain to Lone Tree Creek @ Jack Tone Rd

Year 1: Second Priority (2010 – 2012)

- Grant Line Canal near Calpack Rd
- Grant Line Canal @ Clifton Ct
- Littlejohns Creek @ Jack Tone Rd

Year 0: Third Priority (2011 – 2013)

- French Camp Slough @ Airport Way
- Mokelumne River @ Bruella Rd
- Terminous Tract @ Hwy 12

The above sites will be monitored for priority constituents during months in which exceedances have occurred (Table 7).

Starting in September 2010, sediment toxicity will be added to the MPM schedule for high priority subwatersheds to coincide with the post irrigation sediment sampling period for normal monitoring. Sediment sampling was omitted from previous monitoring schedules when the Coalition was monitoring at the same locations from year to year. Due to the new MRPP monitoring design, the Coalition has added in MPM for sediment to assess if there has been improvement in sediment quality due to outreach and implemented management practices.

Table 7. 2010 Management Plan sampling schedule (including storm sampling 2011).

Site Name	Year	Month	<i>H. azteca</i>	<i>C. dubia</i>	<i>S. capricornutum</i>	Copper	Chlorpyrifos	Diazinon	Dieldrin	Diuron	Simazine
Duck Creek @ Hwy 4	2010	February			X			X			
Lone Tree Creek @ Jack Tone Rd	2010	February			X	X	X	X		X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	February		X	X		X			X	X
Lone Tree Creek @ Jack Tone Rd	2010	March			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	March			X						
Duck Creek @ Hwy 4	2010	April		X	X		X				
French Camp Slough @ Airport Way	2010	April			X						
Grant line Canal near Calpack Rd	2010	April			X						
Littlejohns Creek @ Jack Tone Rd	2010	April			X		X				
Lone Tree Creek @ Jack Tone Rd	2010	April			X						
Mokelumne River @ Bruella Rd	2010	April			X						
Terminus Tract Drain @ Hwy 12	2010	April			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	April				X					
Duck Creek @ Hwy 4	2010	May			X		X				
French Camp Slough @ Airport Way	2010	May				X	X				
Grant Line Canal @ Clifton Court Rd	2010	May			X	X					
Grant line Canal near Calpack Rd	2010	May			X		X				
Littlejohns Creek @ Jack Tone Rd	2010	May				X					
Lone Tree Creek @ Jack Tone Rd	2010	May			X						
Mokelumne River @ Bruella Rd	2010	May			X						
Terminus Tract Drain @ Hwy 12	2010	May			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	May			X	X	X				
Duck Creek @ Hwy 4	2010	June					X				
French Camp Slough @ Airport Way	2010	June				X					
Grant Line Canal @ Clifton Court Rd	2010	June				X					
Littlejohns Creek @ Jack Tone Rd	2010	June				X	X				
Mokelumne River @ Bruella Rd	2010	June				X					
Terminus Tract Drain @ Hwy 12	2010	June									
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	June					X				
Duck Creek @ Hwy 4	2010	July		X			X				
French Camp Slough @ Airport Way	2010	July				X	X		X		
Grant Line Canal @ Clifton Court Rd	2010	July				X					

Site Name	Year	Month	<i>H. azteca</i>	<i>C. dubia</i>	<i>S. capricornutum</i>	Copper	Chlorpyrifos	Diazinon	Dieldrin	Diuron	Simazine
Grant line Canal near Calpack Rd	2010	July			X		X				
Littlejohns Creek @ Jack Tone Rd	2010	July			X		X				
Lone Tree Creek @ Jack Tone Rd	2010	July				X	X				
Mokelumne River @ Bruella Rd	2010	July			X	X					
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	July				X	X				
Duck Creek @ Hwy 4	2010	August					X				
French Camp Slough @ Airport Way	2010	August				X	X				
Grant Line Canal @ Clifton Court Rd	2010	August				X					
Grant line Canal near Calpack Rd	2010	August					X				
Littlejohns Creek @ Jack Tone Rd	2010	August			X						
Lone Tree Creek @ Jack Tone Rd	2010	August				X	X				
Mokelumne River @ Bruella Rd	2010	August			X	X					
Terminus Tract Drain @ Hwy 12	2010	August					X				
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	August				X					
Duck Creek @ Hwy 4	2010	September		X			X				
French Camp Slough @ Airport Way	2010	September	X				X				
Grant Line Canal @ Clifton Court Rd	2010	September	X			X	X				
Grant line Canal near Calpack Rd	2010	September	X								
Littlejohns Creek @ Jack Tone Rd	2010	September				X					
Lone Tree Creek @ Jack Tone Rd	2010	September				X					
Terminus Tract Drain @ Hwy 12	2010	September					X				
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2010	September	X	X		X	X				
French Camp Slough @ Airport Way	2010	October					X				
French Camp Slough @ Airport Way	2011	January								X	
Grant Line Canal @ Clifton Court Rd	2011	January			X		X				
Grant line Canal near Calpack Rd	2011	January			X						
Lone Tree Creek @ Jack Tone Rd	2011	January				X	X	X		X	
Terminus Tract Drain @ Hwy 12	2011	January			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2011	January		X			X			X	X
Duck Creek @ Hwy 4	2011	February			X			X			
French Camp Slough @ Airport Way	2011	February			X	X	X			X	
Grant Line Canal @ Clifton Court Rd	2011	February					X				
Grant line Canal near Calpack Rd	2011	February			X						
Littlejohns Creek @ Jack Tone Rd	2011	February				X	X	X			
Lone Tree Creek @ Jack Tone Rd	2011	February			X	X	X	X		X	
Terminus Tract Drain @ Hwy 12	2011	February			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2011	February		X	X		X			X	X
French Camp Slough @ Airport Way	2011	March	X								
Grant Line Canal @ Clifton Court Rd	2011	March	X				X				
Grant line Canal near Calpack Rd	2011	March	X				X				
Littlejohns Creek @ Jack Tone Rd	2011	March			X						
Lone Tree Creek @ Jack Tone Rd	2011	March	X		X						
Mokelumne River @ Bruella Rd	2011	March			X						
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2011	March	X		X						

Performance Goals and Schedules

The Coalition Strategic Plan is outlined in Table 18 of the original Management Plan (submitted on September 30, 2008) to meet the following management goal:

“To continue to monitor and analyze the water and sediment quality of SJCDWQC site subwatersheds and to facilitate the implementation of management practices by providing outreach and support to growers in order to effectively enhance water quality in the Coalition region.”

The Coalition submitted High Priority Site Subwatershed Performance Goals (hereafter referred to as Performance Goals) on December 23, 2008 in an amendment to the Management Plan. These goals were developed with coordination with Regional Board staff after evaluation of the effectiveness of the Coalition’s Management Plan strategy.

The Performance Goals are built on the following actions essential to the Management Plan strategy:

1. Determine number/type of management practices currently in place, based on APN associated with baseline survey responses
2. Grower Group Contacts / Individual Contacts
3. Implementation of new management practices
4. Assess number/type of new management practices implemented
5. Evaluate effectiveness of new management practices

The Coalition completed action one listed above and submitted a General Survey Summary Report to the Regional Board on December 31, 2008. The Coalition uses this information when comparing the baseline management practices to current management practice information obtained during grower group / individual contacts.

First Priority Subwatersheds (2008 – 2010)

The amended Performance Goals for the first priority subwatersheds (details and amendments are discussed in detail in the schedule extension request submitted on August 3, 2009 and approved on January 4, 2010) are presented in Table 8. Below each performance goal is an update on the status of the associated measures and outputs.

Table 8. High Priority Performance Goals status for 2008-2010 high priority sites (revised on August 3, 2009 and approved on January 4, 2010); original performance goals were for Duck Creek @ Hwy 4 and were extended to Lone Tree Creek and Unnamed Drain to Lone Tree Creek.

Performance Goal/Performance Measure	Outputs	Completion Date – Status as of April 1, 2010		
		Duck Creek @ Hwy 4	Lone Tree Creek @ Jack Tone Rd	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd
Performance Goal 1: Conduct grower group meetings.				
Performance Measure 1.1 – Hold at least two meetings for members in the Duck Creek @ Hwy 4 site subwatershed focused on high priority constituents (i.e. chlorpyrifos) during the 2008/2009 winter season.	Report meeting dates, attendance numbers and agendas in Management Plan update (April 2009).	Completed March 5, 2008	Completed March 5, 2009	Completed March 5, 2009
Performance Goal 2: Individually contact members on adjacent properties to waterways where discharges have been identified during winter 2008/2009.				
Performance Measure 2.1 – 100% of identified growers contacted.	Report ratio of individual contacts made versus total growers identified with discharges.	35 of 35 100%	46 of 46 100%	35 of 35 100%
Performance Measure 2.2 – Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed.	Report ratio of acreage represented by individual contacts versus total subwatershed acreage.	5,337 of 10,746	4,591 of 29,390	8,529 of 26,530
Performance Goal 3 Update: Establish current practices (beyond established baseline practices) by September 2009 on adjacent properties to waterways or where discharges are identified.				
Performance Measure 3.1 – Obtain current management practice information from 100% of targeted growers	Completed individual contact checklists recorded in an Access database.			
Performance Measure 3.2 – Document current management practices of the targeted growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record of management practices used that may reduce agricultural impact on water quality.	35 of 35 100%	36 of 46 78%	28 of 35 80%

Performance Goal/Performance Measure	Outputs	Completion Date – Status as of April 1, 2010		
		Duck Creek @ Hwy 4	Lone Tree Creek @ Jack Tone Rd	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd
Performance Measure 3.3 – Document management practices targeted grower was encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update (April 2010).	Incomplete - Addendum to be submitted by May 30, 2010	Incomplete - Addendum to be submitted by May 30, 2010	Incomplete - Addendum to be submitted by May 30, 2010
Performance Goal 4: Encourage growers to implement additional management practices based on water quality results.				
Performance Measure 4.1 –By February 2010, document additional management practices implemented by identified growers.	Summary of management practices implemented as a result of individual contacts.	Incomplete - Addendum to be submitted by May 30, 2010	Incomplete - Addendum to be submitted by May 30, 2010	Incomplete - Addendum to be submitted by May 30, 2010
Performance Goal 5 Update: Evaluate effectiveness of the new management practices implemented during 2009 and 2010.				
Performance Measure 5.1 Update – Assess water quality results for 90 % completeness, 90% accuracy, and 90% precision from Coalition monitoring location within the priority site subwatershed.	Summary of 2009 and 2010 water quality data from site subwatershed (April 2010 and 2011).	Complete for April 1, 2010	Complete for April 1, 2010	Complete for April 1, 2010
Performance Goal 6: Consult with CVRWQCB at least once during 2008/2009 to discuss Management Plan activities and consider if changes need to be made in Management Plan strategy for High Priority waterbodies.				

Table 9. Updated Management Practices survey, outreach, implementation and evaluation tracking schedule based on the table submitted with the SJCDWQC schedule extension request on August 3, 2009.

Priority Subwatershed Evaluation of Management Practices	Duck Creek @ Hwy 4		Lone Tree Creek @ Jack Tone Rd		Unnamed Drain to Lone Tree Creek @ Jack Tone	
	2009 Schedule	Status as of April 1, 2010	2009 Schedule	Status as of April 1, 2010	2009 Schedule	Status as of April 1, 2010
1a) Associate baseline survey responses with member APNs	Completed	Completed	Completed	Completed	Completed	Completed
1b) Determine number/type of management practices currently in place	Completed (December 30, 2008)	Completed	Completed (December 30, 2008)	Completed	Completed (December 30, 2008)	Completed
2a) Group Grower Contacts	Completed (November 24, 2008)	Completed	Completed (March 5, 2009)	Completed	Completed (November 24, 2008 and March 5, 2009)	Completed
2b) Individual Contacts*	November 2008 – September 2009	Completed	March 2009 – September 2009	78% Complete	March 2009 – September 2009	80% Complete
3) Implementation of new management practices	April 2009 – February 2010	April 2009 – February 2010	April 2009 – February 2010	April 2009 – February 2010	April 2009 – February 2010	April 2009 – February 2010
4) Assess number/type of new management practices implemented	October 2009 - February 2010	MPUR Addendum (May 30, 2010) MPUR 2011	October 2009 - February 2011	MPUR Addendum (May 30, 2010) MPUR 2011	October 2009 - February 2011	MPUR Addendum (May 30, 2010) MPUR 2011
5) Evaluate effectiveness of new management practices	April 2009 - February 2011	Complete for 2009	April 2009 - February 2011	Complete for 2009	April 2009 - February 2011	Complete for 2009

*Individual contacts in this table refers to contacts resulting in returned surveys; in all other places in this document contact refers to initial contact by the Coalition with a targeted member to review management practices and fill out/return a survey.
MPUR – Management Plan Update Report

Performance Goal 1: Conduct grower group meetings.

Between the time the Management Plan was approved (January 23, 2009) and the time the Management Plan update was submitted on April 1, 2009, the Coalition established a process for targeting members by identifying pesticide use permittees within the subwatersheds. Permittees were associated with a Coalition member identification number based on TRS and APN. The Coalition determined which members (based on TRS) applied specific pesticides (i.e. chlorpyrifos) and targeted growers based on those applications and their proximity to the water body. The permittees were contacted and requested to attend grower group meetings where they completed surveys regarding management practices they currently employ. Attendees were requested to provide information about their plans to implement any additional management practices based on information presented at the grower meetings.

The SJCDWQC committed in its Management Plan to conduct at least two meetings for members in the Duck Creek @ Hwy 4 subwatershed between October 2008 and February 2009 (Table 8 and 9). Two grower group contact meetings were held November 24, 2008 and March 5, 2009 (see Table 12 for a list of all contact dates).

The Coalition contacted targeted permittees within the Duck Creek subwatershed to attend one of two grower group meetings held on November 24, 2008. One meeting focused on permittees with surface irrigated crops (i.e. row crops) and the other focused on pressurized irrigated crops (i.e. orchards and vineyards). At the meetings, surveys were completed by the attendee documenting their member ID, type of crop farmed, current management practices, and any management practices the permittee thought would be implemented in the next year. During each meeting, Coalition representatives discussed exceedances and applicable management practices for the specific grower group (either surface or pressurized irrigation). Coalition representatives went through the survey questions with the growers explaining how to complete the surveys and the importance of completing the entire survey. Some permittees that attended the Duck Creek meeting also farm parcels within Unnamed Drain to Lone Tree Creek subwatershed for which survey responses were also supplied.

The Coalition anticipated a high percentage of contacts at the Duck Creek November meetings based on permittees who committed by phone to attend. Forty-nine permittees were contacted (whether or not they were members of the Coalition) and there were 37 attendees. Of those 37 attendees, 19 surveys were completed (16 Coalition members, 3 non-members). Based on the results of the meetings, the Coalition narrowed its contact list to those permittees that farm parcels enrolled in the Coalition, potentially have direct drainage to the creek, and have applied a pesticide for which there is a Management Plan.

On March 5, 2009, Mid Valley Agricultural Services (Mid Valley Ag) hosted a meeting in Escalon to discuss the ILRP, water quality exceedances within the high priority subwatershed and various management practices to reduce pesticide runoff. Approximately 50 growers attended (Coalition members and nonmembers). Individual management practice surveys were handed

out during this meeting and the Coalition received 13 surveys from members and 4 surveys from non-members.

Performance Goal 2: Individually contact members on adjacent properties to waterways where discharges have been identified during winter 2008/2009.

Using the information gained from conducting its first set of grower group meetings in Duck Creek, the Coalition adopted the following strategy for targeting growers:

1. Identify members with parcels that drain directly to the water body (Duck Creek, Unnamed Drain, and Lone Tree Creek).
2. From this list, determine on which parcels a priority pesticide was applied (specific to each Site Subwatershed Management Plan).
3. Match permittees (those that farm the parcels) with Coalition members using information from the County Agricultural Commissioner.
4. Contact and invite permittees to grower group meetings during which individual permittees complete a survey of current management practices and potential future management practices.
5. Associate permittee surveys with member parcels in the subwatershed.

Member parcels were selected based on possible drainage to the water body (using GIS) and those parcels were then stratified by pesticide use history. The Coalition omits members and their parcels from the target list if it is determined through contact with the permittees or PCA that the parcel does not drain or have the potential to generate spray drift into the water body.

The Coalition anticipated that all contacts would be completed within all three high priority subwatersheds by April 2009 but due to a suspension of the Prop 50 grant funding, the visits were delayed. This delay and the reasons for the revised schedules were discussed at a SJCDWQC quarterly meeting (May 20, 2009) with Regional Board staff and also included in a schedule extension request submitted on August 3, 2009 to the Executive Officer. The schedule extension request was approved on January 4, 2010 to extend individual contacts from January 2009 – March 2009 for Lone Tree Creek and Unnamed Drain to Lone Tree Creek to occur between April 2009 and April 2010 (updated Table 11 in the SJCDWQC Management Plan). The Coalition committed in the letter to have all individual contacts completed by September 30, 2009 (Table 9).

The definition of “contact” has been loosely defined in previous documents. From this point on “contact” will refer to a contact by the Coalition (i.e. mailing, phone call) to a targeted grower and/or their associated permittee (which may be the same). A “contact” does not imply that a meeting to discuss current and recommended management practices occurred, however they

could occur simultaneously. One hundred percent of targeted growers have been contacted within all three priority subwatersheds although 100% of surveys have not been returned.

In order to receive completed surveys from the remaining targeted growers, the Coalition conducted meetings with three major distributors of agricultural supplies: Wilber-Ellis (Manteca), Mid Valley Ag (Escalon) and Mid Valley Ag (Linden). With the aid of the pest control advisors (PCAs) within those companies, surveys were distributed to the rest of the targeted growers. The PCA's met with Coalition representatives to discuss the survey format, water quality exceedances within the priority subwatersheds, and various management practices that can be employed by growers. A majority of the surveys were filled out with the help of PCAs and only 15% of the surveys remain to be returned across all two of the three subwatersheds.

The Coalition is using a variety of actions to obtain all of the surveys including conducting additional grower group meetings, additional follow-up contacts with growers who have not attended meetings, and working through PCAs to get their permittees to complete surveys. The Coalition has employed additional staff to personally contact the remaining permittees who have not returned surveys. In some cases, the survey is completed but not returned to the Coalition. The Coalition anticipates scheduling phone interviews with all outstanding permittees (or their PCA) by April 5 and to have completed all outstanding surveys by April 16, 2010 (18 members associated with 13 permittees). Of the 13 permittees, at least 4 have confirmed that they have completed the survey and those surveys will be returned to the Coalition within the next two weeks (representing 12 members of the 18 left to return surveys).

Performance Goal 3: Establish current practices (beyond established baseline practices) by April 2009 on adjacent properties to waterways or where discharges are identified.

All of the surveys received to date have been entered into the SJCDWQC Management Practice Database (Table 8). As mentioned above, the Coalition will be undertaking additional efforts to obtain outstanding management practice surveys by April 16, 2010. A summary of this information will be included in the Management Plan Update Report addendum to be submitted by May 30, 2010.

Performance Goal 4: Encourage growers to implement additional management practices based on water quality results.

It is the primary focus of both grower group and individual meetings to encourage the adoption of practices that will result in reducing runoff of constituents that have been detected at exceedance levels in the past. Many of the management practices that reduce runoff of chlorpyrifos will also result in the reduction of runoff of other constituents (e.g. converting to drip irrigation, spray nozzle calibrations, increased buffer zones, and spray drift management).

Growers were asked to complete surveys of current management practices and also identify the practices they intended to implement in 2009 and 2010. Although growers are targeted

based on pesticide use that is relevant to pesticide exceedances, all subwatershed water quality issues are discussed.

The Coalition originally anticipated implementation of new management practices between April 2009 and February 2010 based on the completion of individual and grower group contacts by April 2009. However the Coalition has no control over what management practices are implemented by growers; it can only provide information on practices for growers to consider, explain options and identify resources for implementing them and encourage rapid adoption of practices to eliminate the exceedances.

The Coalition has communicated to Regional Board staff that some management practices may not be implemented within months, or even a year, (i.e. construction of a sediment pond, installation of pressurized irrigation systems) due to the monetary resources required. In addition, the Coalition has been anticipating receiving funds from Proposition 84 to aid growers in implementing structural management practices. Due to the current status of grant funds, the Coalition is unable to offer growers this additional resource and therefore can only encourage growers to contact their local NRCS office to obtain information regarding additional funding for installing structural management practices.

The Coalition has recently been awarded a \$175,000 grant through the California Department of Pesticide Regulation (DPR) with a goal of reducing pesticide runoff (up to 10 percent) by 2011 from tomato, alfalfa, walnut, and wine grapes. With the funds, the Coalition is developing crop specific management practice workbooks that will enable individual farmers to easily make management practice decisions specific to their operations. The wine grape workbook was completed in March 2010. Coalition members within the first three high priority subwatersheds (Duck Creek, Unnamed Drain to Lone Tree Creek and Lone Tree Creek) as well as one of the second high priority subwatershed (Littljohns Creek) who grow wine grapes were personally contacted to attend a grower workshop to be held on March 25, 2010. The wine grape grower workshop will focus on the management practices outlined within the workbook including irrigation management practices, spray drift management and low risk pesticide products. The workbooks are designed to inform growers of effective management practices that will reduce pesticide discharge. It is anticipated that these workbooks will lead to the implementation of additional management practices within high priority subwatersheds and result in an overall reduction in the pesticide runoff.

Performance Goal 5: Evaluate effectiveness of the new management practices implemented during 2009 and 2010.

The Coalition updated its schedule for evaluating the effectiveness of new management practices by using water quality monitoring results from 2009 and 2010 (approved on January 4, 2010). This time frame allows the Coalition to obtain two years of water quality monitoring results (in addition to monitoring conducted in 2007 and 2008 in Management Plan subwatersheds) to assess the effectiveness of new practices. The time will also allow the

Coalition to determine which practices were implemented (requiring additional contacts with targeted growers) during 2009 and 2010.

Although a full evaluation will not be completed until April 1, 2011, the Coalition has evaluated the current status of water quality results in the section “Evaluation of Management Practice Effectiveness”.

Performance Goal 6: Consult with CVRWQCB at least once during 2008/2009 to discuss Management Plan activities and consider if changes need to be made in Management Plan for High Priority waterbodies.

The Coalition met several times with Regional Board staff to discuss the Management Plan activities for high priority waterbodies including status of individual contacts, survey completion and extension of time lines for completing Performance Goals (Table 10).

Table 10. 2009 Regional Board Quarterly Meeting dates.

Quarterly Meetings	Meeting Date
First Quarter Meeting	February 10, 2009
Second Quarter Meeting	May 20, 2009
Third Quarter Meeting	August 5, 2009
Fourth Pre-Quarterly Meeting	October 7, 2009
Fourth Quarterly Meeting	November 3, 2009

Second Priority Subwatersheds (2010 – 2012)

In the pre-quarterly meeting with Regional Board staff on October 7, 2009 the Coalition proposed modified Performance Goals for the next high priority site subwatersheds (Grant Line Canal near Calpack, Grant Line Canal @ Clifton Ct and Littlejohns Creek @ Jack Tone Rd). The second priority subwatershed performance goals include the following changes from the first priority subwatershed performance goals:

1. Deleted Performance Goal 1 (Conduct grower group meetings).
2. Updated Performance Measure 2.2 Output (now 1.2) to be specific to the subwatershed acreage with direct drainage.
3. Combined Performance Measure 3.1 and 3.2 (now 2.1 and 2.2); deleted Performance Measure 3.1 (Obtain current management practice from 100% of identified growers / Completed individual contact checklists recorded in an Access database).
4. Updated Performance Goal 5 (now 4) – refers to years that the subwatershed is high priority rather than specifying the exact years of evaluation.
5. Updated Performance Measure 5.1 (now 4.1) and omitted “90% completeness, 90% accuracy and 90% precision”.

Performance goals, measures, outputs and completion dates are included in Table 11. The Coalition anticipates using the following performance goals for future priority subwatersheds as they rotate into priority status.

Table 11. Subwatershed specific performance goals for 2010 - 2012 high priority subwatersheds (Grant Line Canal near Calpack, Grant Line Canal @ Clifton Ct and Littlejohns Creek @ Jack Tone). Completion deadlines are in bold; if applicable, status updates are included below completion deadlines.

Performance Goal/Performance Measure	Outputs	Completion Deadline / Status as of April 1, 2010		
		Grant Line Canal @ Calpack	Grant Line Canal near Clifton Ct	Littlejohns Creek @ Jack Tone
Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.				
Performance Measure 1.1 – 100% of identified growers contacted to fill out surveys.	Report ratio of individual initial contacts made versus total growers identified to contact.	March 30, 2010 2 of 2	March 30, 2010 2 of 2	March 30, 2010 16 of 16
Performance Measure 1.2 – Contact owners/operators representing at least 1,000 acre of membership acreage in the site subwatershed (if subwatershed is greater than 800 acres).	Report ratio of acreage represented by individual contacts versus subwatershed acreage determined to have direct drainage.	Quarterly 686 of 686 acres	Quarterly 259 of 259 acres	Quarterly 2722 of 6919 acres
Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.				
Performance Measure 2.1 – Document current management practices of 100% of identified growers during individual contacts and encourage the adoption of new practices not currently implemented.	Record current management practices used that may reduce agricultural impact on water quality.	Oct. 31, 2010 2 of 2	Oct. 31, 2010 1 of 2	Oct. 31, 2010 12 of 16
Performance Measure 2.2 – Document management practices that the identified grower were encouraged to implement.	Summary of management practice evaluations on a site subwatershed level in the Management Plan update.	April 1, 2011	April 1, 2011	April 1, 2011
Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.				
Performance Measure 3.1 – Document (e.g. assess number/type) new management practices implemented by identified growers.	Record implemented management practices (Access database).	November 30, 2010	November 30, 2011	November 30, 2011
	Summary of management practices implemented as a result of individual contacts.	April 1, 2011	April 1, 2011 April 1, 2012	April 1, 2011 April 1, 2012
Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.				

Performance Goal/Performance Measure	Outputs	Completion Deadline / Status as of April 1, 2010		
		Grant Line Canal @ Calpack	Grant Line Canal near Clifton Ct	Littlejohns Creek @ Jack Tone
Performance Measure 4.1 Update – Assess water quality results from Coalition monitoring location within the priority site subwatershed.	Summary of water quality data from management plan monitoring.	April 1, 2011 April 1, 2012	April 1, 2011 April 1, 2012	April 1, 2011 April 1, 2012
<i>Performance Goal 5: Consult with CVRWQCB at least once to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.</i>				

Performance Goal 1: Individually contact members on adjacent properties to waterways where discharges have been identified to fill out surveys.

The Coalition contacted 100% of members within the Grant Line Canal @ Calpack, Grant Line Canal near Clifton Ct and Littlejohns Creek @ Jack Tone Rd to attend grower meetings to discuss the Coalition's Management Plan strategy, water quality results and pertinent management practices. Growers were mailed survey packets which included maps of grower parcels, PUR data associated with exceedances and the management practice survey specific to field enrolled in the Coalition that were determined to have direct drainage to the priority waterway. The growers were asked to attend the meeting and bring the survey with them to fill out at the meetings held on January 25 and 28, 2010 (Table 12).

Performance Goal 2: Establish current practices (beyond established baseline practices) on adjacent properties to waterways or where discharges are identified.

In response to the two meetings in January, the Coalition has received as of April 1, 2010, 100% of completed management practice surveys in Grant Line Canal @ Calpack, 50% of the surveys in Grant Line Canal near Clifton Ct and 75% of the surveys in the Littlejohns Creek @ Jack Tone Rd subwatershed.

Performance Goal 3: Encourage growers to implement additional management practices based on water quality results.

At the two January meetings held in 2010, University of California Extension Specialists discussed management practice trial and efficacy for specific crops pertinent to the specific waterways. The Coalition is still reviewing the responses in the surveys regarding management practices that growers intend to implement in 2010 and 2011.

Performance Goal 4: Evaluate effectiveness of the new management practices implemented during years that site is high priority.

The Coalition will evaluate effectiveness of new management practices implemented in 2010 and 2011 with water quality data obtained from MPM. An interim evaluation will be included in the 2011 Management Plan Update Report and a final evaluation will be included in the 2012 Management Plan Update Report. If the Coalition is aware of structural management practices that will take longer than two years to implement, this information will be included in the annual updates and may result in an extension to the final evaluation of management practice effectiveness.

Performance Goal 5: Consult with the CVRWQCB at least to discuss Management Plan activities and consider if changes need to be made in the Management Plan strategy for high priority waterbodies.

The Coalition will meet with the Regional Board quarterly to discuss Coalition activities in relation to the first high priority subwatersheds and the second high priority subwatersheds. The Coalition has already met with Regional Board staff on February 10, 2010 for its first quarterly meeting. Future meetings will occur in May, August and November.

Table 12. Priority subwatershed contacts including grower notifications and outreach/education meetings to track management practices.

Priority Site Subwatershed	Date	Category	Details	Constituents Addressed	Who
Lone Tree Creek	21-Nov-08	BMP Outreach and Education / Management Practice Tracking	Individual grower meetings to discuss chlorpyrifos exceedances linked with individual grower use. Meetings included a visit to growers' fields to view runoff conditions and suggest/discuss potential management practices.	Chlorpyrifos	Rachelle Antinetti, Terry Prichard, and Joe Gasper (PCA)
Duck Creek	24-Nov-08	BMP Outreach and Education / Management Practice Tracking	Grower meeting to address measured water quality standard exceedances and to discuss BMPs and pesticide product options. 19 BMP surveys were completed.	All Constituents	Mike Wackman, Terry Prichard
Duck Creek	10-Dec-08	Grower Notification	Mailing to announce Duck Creek subwatershed grower meeting in Farmington; followed up with reminder postcard sent seven days after initial mailing.	All Constituents	Terry Prichard
Lone Tree Creek Unnamed Drain to Lone Tree Creek Duck Creek	18-Feb-09	Grower Notification	Mailing to announce Mid Valley Ag Services is hosting a grower meeting at Escalon Sportsman Club (sent to all members Mid Valley Ag); followed up with phone call after initial mailing.	All Constituents	Terry Prichard
Lone Tree Creek Unnamed Drain to Lone Tree Creek Duck Creek	5-Mar-09	BMP Outreach and Education / Management Practice Tracking	Grower Meeting hosted by Mid Valley Agricultural Services at Escalon Sportsman Club. Invited all Mid Valley Ag's PCAs to discuss the program and distribute surveys. Approximately 50 growers attended, including some growers not in Coalition (Prichard continues to work with other groups/pesticide sellers).	All Constituents	Terry Prichard, Mike Wackman
Unnamed Drain to Lone Tree Creek	30-Nov-09	Grower Notification / Management Practice Tracking	Growers with outstanding surveys contacted and surveys mailed to all growers.	All Constituents	Terry Prichard
Littlejohns Creek	6-Jan-10	Grower Notification / Management Practice Tracking	Littlejohns Creek Orchard Grower meeting announcement send to 15 members. Mailing included meeting agenda and individual contact survey to be filled out before and during meeting.	All	MLJ

Priority Site Subwatershed	Date	Category	Details	Constituents Addressed	Who
Grant Line Canal, Littlejohns Creek	8-Jan-10	Grower Notification / Management Practice Tracking	Grant Line Canal and Littlejohns Creek Row Crop Grower meeting announcement send to 6 members. Mailing included meeting agenda and individual contact survey to be filled out before and during meeting.	All	MLJ
Littlejohns Creek	25-Jan-10	BMP Outreach and Education / Management Practice Tracking	Littlejohns Creek Orchard Grower Meeting: of the 15 members invited, 10 members were represented; a total of 21 people attended. Discussion topics included Coalition's purpose, current water issues, ILRP status, and relevant BMPs; members filled out surveys.	All (focus chlorpyrifos, diazinon, copper)	Mike Wackman, Terry Prichard, Mick Canevari
Grant Line Canal, Littlejohns Creek	28-Jan-10	BMP Outreach and Education / Management Practice Tracking	Grant Line Canal and Littlejohns Creek Row Crop Grower Meeting: of the 6 members invited, 4 members were in attendance. Discussion topics included Coalition's purpose, current water issues, ILRP status, and relevant BMPs; members filled out surveys.	All (focus chlorpyrifos, diazinon, copper and algae toxicity)	Mike Wackman, Terry Prichard, Mick Canevari
Duck Creek, Unnamed Drain to Lone Tree Creek, Lone Tree Creek, Littlejohns Creek	22-Mar-10	Grower Notification	Growers within Duck Creek, Unnamed Drain to Lone Tree Creek, Lone Tree Creek and Littlejohns Creek were mailed workbook packets and information regarding Wine grape Workshop.	All	Mike Wackman, Terry Prichard
Duck Creek, Unnamed Drain to Lone Tree Creek, Lone Tree Creek, Littlejohns Creek	25-Mar-10	BMP Outreach and Education	Wine grape Workshop was held as part of the CDPR grant. Wine grape workbooks were reviewed with growers which included management practice decision trees for specific grower situations.	All	Mike Wackman, Terry Prichard

SUMMARY OF IMPLEMENTED MANAGEMENT PRACTICES

The Coalition identified four general classifications of management practices that would be effective at reducing negative impacts of agricultural discharges on water quality including:

1. Reduction in application rates (including switching to low risk products),
2. Sprinkler or microspray irrigation,
3. Retention pond/holding basin, and
4. Grass waterways or grass filter strips.

The Coalition's Management Plan submitted on September 30, 2008 anticipated that due to Coalition outreach, reduction in application rates would occur from April to September in 2009 and structural improvements such as the construction of sprinkler or microspray irrigation systems would occur the following year by December 2010 (Table 13).

Table 13. Management Practices implementation schedule.

Sample Site Subwatershed	Management Practice	Constituents of Concern	Anticipated Implementation Date	Anticipated Evaluation Date
Lone Tree Creek @ Jack Tone Rd	Reduction in application rates	Chlorpyrifos	April - September 2009	April 2010
	Sprinkler or microspray irrigation	Chlorpyrifos	December 2010	April 2011
	Retention pond/holding basin	Chlorpyrifos, Copper, Diuron, <i>Selenastrum</i> toxicity, Sediment toxicity	December 2010	April 2011
Duck Creek @ Hwy 4	Reduction in application rates	Chlorpyrifos	April - September 2009	April 2010
	Sprinkler or microspray irrigation	Chlorpyrifos	December 2010	April 2011
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Reduction in application rates	Chlorpyrifos	April - September 2009	April 2010
	Sprinkler or microspray irrigation	Chlorpyrifos	December 2010	April 2011
	Retention pond/holding basin	Chlorpyrifos	December 2010	April 2011
	Center grass rows, grass waterways, or grass filter strips	Chlorpyrifos, Diuron, <i>Selenastrum</i> toxicity	December 2010	April 2011

The Coalition is receiving management practice surveys from a few last growers. Additional staff has been hired by the Coalition to conduct phone interviews with growers that have not responded to previous survey and meeting mailings and it is anticipated that in the next two weeks all surveys will be completed and readied for entry into the Access database.

Therefore the Coalition will submit an addendum to this Management Plan Update Report which will include all survey information and an evaluation of current management practices for high priority subwatersheds (2008 – 2010). In addition, the evaluation will include information obtained from follow up surveys regarding implementation of management practices. This addendum will be an interim report with a final evaluation occurring in April 2011 that will assess implementation of management practices from 2008 through 2010 as well as evaluate the effectiveness of management practices. The addendum will be submitted by May 30, 2010.

EVALUATION OF MANAGEMENT PRACTICE EFFECTIVENESS

The Coalition conducted MPM at Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone from April to September in 2009. Chlorpyrifos exceedances continued to occur in all three priority subwatersheds despite increased outreach and grower commitments to implement additional management practices. In addition, water flea toxicity occurred twice between the three subwatersheds and both times were associated with chlorpyrifos exceedances. Chlorpyrifos remains a high priority for these three subwatersheds and the Coalition will continue to do follow up contacts and obtain 100% of surveys for members within this subwatershed. The Coalition will continue to monitor for chlorpyrifos and toxicity to *C. dubia* during months of past exceedances, and anticipates that water quality in 2010 will improve compared to 2009.

All copper concentrations from samples collected during 2009 were below exceedance levels. The Coalition will continue to monitor for copper in 2010 during months of past exceedances however it anticipates similar results indicating improved copper management practices.

There was no algae toxicity at any of these three locations during months of MPM (April and May). The Coalition will monitor for algae toxicity in 2010.

Starting in April 2010, the Coalition will begin MPM at Grant Line Canal @ Calpack Rd, Grant Line Canal near Clifton Ct and Littlejohns Creek @ Jack Tone Rd for chlorpyrifos, diazinon, diuron, simazine, dieldrin, copper, water flea toxicity, algae toxicity and sediment toxicity. The Coalition has already conducted successful meetings with targeted growers in all three subwatersheds and have obtained surveys from 75% of growers (15 of 20 surveys returned). The Coalition anticipates that water quality results from 2010 and 2011 will indicate improvements in all priority constituents due to increased implementation of management practices within all three subwatersheds. The Coalition will review management practice implementation information and water quality results in the Management Plan Update Report to be submitted on April 1, 2011 and 2012 (two years of management practice implementation and water quality monitoring).

Starting in April 2010, the Coalition will add an additional level of MPM by monitoring the next set of priority subwatersheds. This monitoring is considered to be conducted during "Year 0" since it is the year before the sites are rotated into high priority status. Year 0 monitoring provides the Coalition with recent water quality information at these sites. The Coalition will begin Year 0 monitoring in 2010 at French Camp Slough @ Airport Way, Terminous Tract Drain @ Hwy 12 and Mokelumne River @ Bruella Rd. French Camp Slough is downstream of Unnamed Drain to Lone Tree Creek, Lone Tree Creek and Littlejohns Creek. It is anticipated that with the additional implementation of management practices in the upstream subwatersheds, there will also be an improvement in water quality at French Camp Slough. Water quality results in 2010 will indicate any water quality improvements. Results from the

third high priority subwatershed MPM will be included in the Management Plan Update Report to be submitted on April 1, 2011. Focused outreach will occur in these subwatersheds in January 2011 and management practice effectiveness will be evaluated in the Management Plan Update Reports to be submitted in 2011 and 2012.

STATUS OF TMDL CONSTITUENTS

The SJCDWQC established monitoring and management activities for TMDL constituents as required in the Regional Board's Basin Plan for the Sacramento and San Joaquin River basins. The Basin Plan establishes Total Maximum Daily Load (or TMDL) requirements for dischargers and requires that dischargers comply with the monitoring and management criteria defined in the Basin Plan. A narrative concerning each TMDL constituent is provided below to document the Coalition's effort to meet its TMDL requirements for Coalition members.

If an exceedance occurs for a TMDL constituent (i.e. chlorpyrifos, diazinon, salt and boron) a management plan is required for that constituent in that site subwatershed regardless of whether there was a second exceedance.

A management plan for a TMDL constituent results in additional focused efforts within subwatersheds. Coalition efforts in all zones include but are not limited to: (1) continued monitoring at periods when peak pesticide use occurs, (2) analysis of Pesticide Use Report (PUR) data, (3) Management Plan Monitoring, (4) holding site subwatershed grower meetings, (5) encouraging and evaluating implementation of management practices, and (6) addressing the seven compliance components described in the Basin Plan in conjunction with dairy operators with irrigated lands and other entities identified as potential sources of discharges. The Coalition addresses toxicity, pesticides, and sediment bound analytes with specific management practices whether or not there is a TMDL.

Intensive outreach and documentation of implemented management practices occur throughout the Coalition, but greater efforts to acquire this information are made at the site subwatersheds that the Coalition has designated as High Priority areas (see Table 6). The Coalition informs growers with irrigated land about water quality and the status of evolving water quality objectives. The Coalition also obtains information on management practices from the growers. Furthermore, the Coalition conducts joint meetings with County Agricultural Commissioners to provide growers with information on management practices that can improve water quality. The Coalition evaluates various management practices and determines their suitability for irrigated land within the Coalition region.

Chlorpyrifos and Diazinon TMDL

The Basin Plan requires that dischargers either individually or as a coalition describe the actions that the discharger will take to reduce chlorpyrifos and diazinon discharges or also meet the

applicable allocations by the required compliance date. The Coalition's Management Plan includes source identification and a means to identify management practices that will need to be implemented in specific areas to achieve expected reductions in chlorpyrifos and diazinon discharges. Improved management practices, including pesticide application practices to address drift, alternative irrigation practices to reduce runoff, and drainage management practices to decrease or reduce the volume of runoff of contaminants have been implemented to meet water quality objectives and load allocations set forth in the Basin Plan. Meetings have been held quarterly with the Regional Water Board (Table 10) in order to evaluate progress in meeting these reductions, and revisions to the Management Plan will be made if sufficient progress is not being achieved.

The Coalition is following the development and continued assessment of chlorpyrifos and diazinon TMDLs in the Sacramento San Joaquin Delta and the San Joaquin River. The Sacramento-San Joaquin Delta Basin Plan Amendment Final Staff Report was submitted in June 2006 and the San Joaquin River Diazinon and Chlorpyrifos Basin Plan Amendment Staff Report was completed in October 2005. Since then, the Regional Water Quality Control Board has been working to develop new amendments to the Basin Plan for the control of discharges of pesticides into selected surface waters in the Sacramento and San Joaquin Valleys, including the Delta. On July 23, 2009, a meeting was held to discuss and update the public on the status of creating a new method to evaluate setting criteria for organophosphate pesticides. The Central Valley Pesticide BPA and TMDL Stakeholder Meeting was held on November 16, 2009 to provide participants with an opportunity to discuss the overall status and schedule of the project, the waterbodies for potential inclusion in the geographic scope of the project, and potential provisions of the Basin Plan Amendment. A similar meeting was held on January 7, 2010, the Central Valley Pesticide TMDL and Basin Plan Amendment Meeting. The Coalition will continue to pay close attention to State and regional action to ensure incorporation of new policies and mandates to meet water quality objectives.

SJCDWQC participated in a TMDL meeting with representatives from the Westside Water Quality Coalition, the East San Joaquin Water Quality Coalition, and Regional Board Irrigated Lands Regulatory Program staff and TMDL unit staff. Based on the boundary of the Coalition, the San Joaquin River @ Vernalis compliance point lies within the Coalition's region. However, since there are no inputs from Coalition members that would affect the water quality at Vernalis, the East San Joaquin Water Quality Coalition agreed to monitor this location for compliance with the San Joaquin River Chlorpyrifos and Diazinon TMDL.

To maintain compliance with the Sacramento-San Joaquin Delta Chlorpyrifos and Diazinon TMDL, the Coalition monitors at least one location within each zone (except Zone 6 which is not currently being monitored for any constituent) as representative of the Delta waterways (Appendix 42 in the Basin Plan). Monitoring for chlorpyrifos and diazinon is conducted monthly with the goal of monitoring at least one storm event each year. Representative monitoring provides information on the wide range of discharges and hydrologic conditions likely to occur

in the Delta. The Coalition's 2008 MRPP presents the technical approach for an assessment of chlorpyrifos and diazinon applications (MRPP, Pages 17-31).

Below are the seven Basin Plan monitoring requirements to indicate compliance with the chlorpyrifos and diazinon TMDL.

1. Determine compliance with established water quality objectives and the loading capacity applicable to diazinon and chlorpyrifos in the San Joaquin River.
2. Determine compliance with established load allocations for diazinon and chlorpyrifos
3. Determine the degree of implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos
5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable

To demonstrate compliance with the Basin Plan water quality objectives and the loading capacity, several agriculturally-influenced tributaries to the San Joaquin River and within the Delta are routinely monitored, as described in the SJCDWQC MRPP.

Compliance with chlorpyrifos and diazinon WQO

Table 4 earlier in this document lists all site subwatersheds within the Coalition region that have experienced an exceedance of the chlorpyrifos water quality objective (WQO) of 0.015 µg/L and of the diazinon water quality objective of 0.1 µg/L. From 2004 through 2009, there have been 73 exceedances of the chlorpyrifos WQO across 12 subwatersheds and 8 exceedances of the diazinon WQO across five subwatersheds (Table 4). In 2009, there were a total of 8 exceedances of the chlorpyrifos WQO and no exceedances of the diazinon WQO (Table 14). Chlorpyrifos exceedances occurred in Zone 4 at Duck Creek @ Hwy 4, French Camp Slough @ Airport Way, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (also known at Temple Creek) (Table 14).

Table 14. 2009 chlorpyrifos WQTL exceedances within the SJCDWQC.

Zone	Station Name	Season	Sample Date	Chlorpyrifos, µg/L
Zone 4	Duck Creek @ Hwy 4	Irrigation3, MPM	6/9/2009	0.070
Zone 4	Duck Creek @ Hwy 4	Irrigation4, MPM	7/14/2009	0.150
Zone 4	Duck Creek @ Hwy 4	Irrigation5, MPM	8/11/2009	0.031
Zone 4	French Camp Slough @ Airport Way	Fall1	10/6/2009	0.029
Zone 4	Lone Tree Creek @ Jack Tone Rd	Irrigation5, MPM	8/11/2009	0.100
Zone 4	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Irrigation2, MPM	5/12/2009	0.032
Zone 4	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Irrigation4, MPM	7/14/2009	0.660
Zone 4	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	Irrigation6, MPM	9/15/2009	0.086
Environmental Exceedances				1
Non Contiguous Water Body Exceedances				0
Management Plan Monitoring Exceedances¹				7
TOTAL Exceedances				8

¹ Refers to Management Plan Monitoring for specific constituents at Assessment, Core, and/or MPM locations.

Compliance with established load allocations for chlorpyrifos and diazinon

Load allocations for nonpoint source discharges, including agricultural discharges, are based on the following equation for discharges to Sacramento-San Joaquin Delta Waterways:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

Where

C_D = diazinon concentration in µg/L

C_C = chlorpyrifos concentration in µg/L

WQO_D = diazinon water quality objective; 0.1 µg/L

WQO_C = chlorpyrifos water quality objective; 0.015 µg/L

The Coalition reviewed all data collected from 2004 through 2009 to determine load allocation compliance based on the above formula (Table 15). Table 16 includes a tally of load compliance for 2004 -2009 and 2009 only.

Table 15. TMDL load calculations for diazinon and chlorpyrifos runoff in the Sacramento-San Joaquin Delta Waterways for nonpoint source discharges.

Zone	Station Name	Sample Date	Grouping	Chlorpyrifos	Diazinon	Load	Load Compliance
1	Bear Creek @ North Alpine Rd	13/Jan/2009	Non Contiguous, Winter1		0.007	0.07	In Compliance
1	Bear Creek @ North Alpine Rd	10/Feb/2009	Winter2	0.0084		0.56	In Compliance
2	Duck Creek @ Drais Rd	13/May/2008	Irrigation2, MPM	0.42		28.00	Out of compliance
2	Duck Creek @ Hwy 4	16/May/2006	Irrigation1	0.029		1.93	Out of compliance
2	Duck Creek @ Hwy 4	18/Jul/2006	Irrigation3	0.011		0.73	In Compliance
2	Duck Creek @ Hwy 4	19/Sep/2006	Irrigation5	0.15		10.00	Out of compliance
2	Duck Creek @ Hwy 4	11/Feb/2007	Storm1		0.055	0.55	In Compliance
2	Duck Creek @ Hwy 4	28/Feb/2007	Storm2		0.11	1.10	Out of compliance
2	Duck Creek @ Hwy 4	10/Jul/2007	Irrigation4	0.024		1.60	Out of compliance
2	Duck Creek @ Hwy 4	04/Sep/2007	Irrigation6	0.025		1.67	Out of compliance
2	Duck Creek @ Hwy 4	25/Sep/2007	Irrigation6, MPM	0.029		1.93	Out of compliance
2	Duck Creek @ Hwy 4	23/Jan/2008	Storm1	0.0081	0.018	0.72	In Compliance
2	Duck Creek @ Hwy 4	15/Apr/2008	Irrigation1	0.057		3.80	Out of compliance
2	Duck Creek @ Hwy 4	10/Jun/2008	Irrigation3	0.11		7.33	Out of compliance
2	Duck Creek @ Hwy 4	15/Jul/2008	Irrigation4	0.066		4.40	Out of compliance
2	Duck Creek @ Hwy 4	12/Aug/2008	Irrigation5	0.017		1.13	Out of compliance
2	Duck Creek @ Hwy 4	16/Sep/2008	Irrigation6	0.027		1.80	Out of compliance
2	Duck Creek @ Hwy 4	13/Jan/2009	Non Contiguous, Winter1	0.005	0.012	0.45	In Compliance
2	Duck Creek @ Hwy 4	10/Feb/2009	Non Contiguous, Winter2	0.0037		0.25	In Compliance
2	Duck Creek @ Hwy 4	12/May/2009	Irrigation2, MPM	0.011		0.73	In Compliance
2	Duck Creek @ Hwy 4	09/Jun/2009	Irrigation3, MPM	0.07		4.67	Out of compliance
2	Duck Creek @ Hwy 4	14/Jul/2009	Irrigation4, MPM	0.15		10.00	Out of compliance
2	Duck Creek @ Hwy 4	11/Aug/2009	Irrigation5, MPM	0.031		2.07	Out of compliance
2	French Camp Slough @ Airport Way	16/Feb/2005	Storm1		0.052	0.52	In Compliance
2	French Camp Slough @ Airport Way	17/May/2005	Irrigation1	0.011		0.73	In Compliance
2	French Camp Slough @ Airport Way	19/Jul/2005	Irrigation3	0.033	0.013	2.33	Out of compliance
2	French Camp Slough @ Airport Way	16/Aug/2005	Irrigation4	0.043		2.87	Out of compliance

Zone	Station Name	Sample Date	Grouping	Chlorpyrifos	Diazinon	Load	Load Compliance
2	French Camp Slough @ Airport Way	27/Feb/2006	Storm1	0.037	0.032	2.79	Out of compliance
2	French Camp Slough @ Airport Way	15/Mar/2006	Storm2	0.005	0.087	1.20	Out of compliance
2	French Camp Slough @ Airport Way	16/May/2006	Irrigation1	0.015		1.00	In Compliance
2	French Camp Slough @ Airport Way	18/Jul/2006	Irrigation3	0.027		1.80	Out of compliance
2	French Camp Slough @ Airport Way	19/Sep/2006	Irrigation5	0.013		0.87	In Compliance
2	French Camp Slough @ Airport Way	11/Feb/2007	Storm1	0.049	0.11	4.37	Out of compliance
2	French Camp Slough @ Airport Way	10/Apr/2007	Irrigation1	0.013		0.87	In Compliance
2	French Camp Slough @ Airport Way	12/Jun/2007	Irrigation3	0.013		0.87	In Compliance
2	French Camp Slough @ Airport Way	10/Jul/2007	Irrigation4	0.014		0.93	In Compliance
2	French Camp Slough @ Airport Way	30/Jul/2007	Irrigation4, MPM	0.011		0.73	In Compliance
2	French Camp Slough @ Airport Way	23/Jan/2008	Storm1	0.008	0.12	1.73	Out of compliance
2	French Camp Slough @ Airport Way	15/Apr/2008	Irrigation1	0.003		0.20	In Compliance
2	French Camp Slough @ Airport Way	13/May/2008	Irrigation2	0.4		26.67	Out of compliance
2	French Camp Slough @ Airport Way	12/Aug/2008	Irrigation5	0.022		1.47	Out of compliance
2	French Camp Slough @ Airport Way	16/Sep/2008	Irrigation6	0.039		2.60	Out of compliance
2	French Camp Slough @ Airport Way	14/Apr/2009	Irrigation1	0.0045		0.30	In Compliance
2	French Camp Slough @ Airport Way	06/Oct/2009	Fall1	0.029		1.93	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	16/Feb/2005	Not Applicable	0.046	0.107	4.14	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	19/Jul/2005	Irrigation3	0.017		1.13	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	27/Feb/2006	Storm1		0.035	0.35	In Compliance
2	Littlejohns Creek @ Jack Tone Rd	15/Mar/2006	Storm2	0.003	0.069	0.89	In Compliance
2	Littlejohns Creek @ Jack Tone Rd	18/Jul/2006	Irrigation3	0.027		1.80	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	11/Feb/2007	Storm1	0.029	0.11	3.03	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	10/Jul/2007	Irrigation4	0.013		0.87	In Compliance
2	Littlejohns Creek @ Jack Tone Rd	30/Jul/2007	Irrigation4, MPM	0.018		1.20	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	23/Jan/2008	Storm1	0.0039	0.017	0.43	In Compliance
2	Littlejohns Creek @ Jack Tone Rd	15/Apr/2008	Irrigation1	0.034		2.27	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	10/Jun/2008	Irrigation3	0.077		5.13	Out of compliance
2	Littlejohns Creek @ Jack Tone Rd	15/Jul/2008	Irrigation4	0.025		1.67	Out of compliance
2	Lone Tree Creek @ Brennan Rd	27/Feb/2006	Storm1	0.018	0.017	1.37	Out of compliance
2	Lone Tree Creek @ Brennan Rd	15/Mar/2006	Storm2		0.031	0.31	In Compliance
2	Lone Tree Creek @ Jack Tone Rd	23/Sep/2004	Not Applicable	0.015		1.00	In Compliance

Zone	Station Name	Sample Date	Grouping	Chlorpyrifos	Diazinon	Load	Load Compliance
2	Lone Tree Creek @ Jack Tone Rd	16/Feb/2005	Storm1	0.014	0.089	1.82	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	19/Jul/2005	Irrigation3	0.036	0.045	2.85	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	16/Aug/2005	Irrigation4	0.019		1.27	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	27/Feb/2006	Storm1	0.014	0.014	1.07	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	15/Mar/2006	Storm2	0.013	0.023	1.10	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	18/Jul/2006	Irrigation3	0.019		1.27	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	11/Feb/2007	Storm1	0.052	0.14	4.87	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	12/Jun/2007	Irrigation3	0.011		0.73	In Compliance
2	Lone Tree Creek @ Jack Tone Rd	10/Jul/2007	Irrigation4	0.035		2.33	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	30/Jul/2007	Irrigation4, MPM	0.01		0.67	In Compliance
2	Lone Tree Creek @ Jack Tone Rd	23/Jan/2008	Storm1	1.7	0.2	115.33	Out of compliance
2	Lone Tree Creek @ Jack Tone Rd	11/Aug/2009	Irrigation5, MPM	0.1		6.67	Out of compliance
2	Mormon Slough @ Jack Tone Rd	16/May/2006	Irrigation1	0.035		2.33	Out of compliance
2	Mormon Slough @ Jack Tone Rd	18/Jul/2006	Irrigation3	0.013		0.87	In Compliance
2	Mormon Slough @ Jack Tone Rd	10/Jul/2007	Irrigation4	0.015		1.00	In Compliance
2	Mormon Slough @ Jack Tone Rd	04/Sep/2007	Irrigation6	0.21		14.00	Out of compliance
2	Mormon Slough @ Jack Tone Rd	23/Jan/2008	Storm1	0.007	0.016	0.63	In Compliance
2	Mormon Slough @ Jack Tone Rd	15/Apr/2008	Irrigation1	0.015		1.00	In Compliance
2	Mormon Slough @ Jack Tone Rd	13/May/2008	Irrigation2	0.066		4.40	Out of compliance
2	Mormon Slough @ Jack Tone Rd	15/Jul/2008	Irrigation4	0.047		3.13	Out of compliance
2	Mormon Slough @ Jack Tone Rd	12/Aug/2008	Irrigation5	0.025		1.67	Out of compliance
2	Mormon Slough @ Jack Tone Rd	09/Sep/2008	Irrigation6, MPM	0.034		2.27	Out of compliance
2	Mormon Slough @ Jack Tone Rd	16/Sep/2008	Irrigation6	0.036		2.40	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	18/Jul/2006	Irrigation3	0.031		2.07	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	15/Aug/2006	Irrigation4	0.011		0.73	In Compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	19/Sep/2006	Irrigation5	0.045		3.00	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	11/Feb/2007	Storm1	0.048	0.072	3.92	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	10/Jul/2007	Irrigation4	0.034		2.27	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	30/Jul/2007	Irrigation4, MPM	0.014		0.93	In Compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	25/Sep/2007	Irrigation6, MPM	0.017		1.13	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	23/Jan/2008	Storm1	0.045	0.027	3.27	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	13/May/2008	Irrigation2	0.41		27.33	Out of compliance

Zone	Station Name	Sample Date	Grouping	Chlorpyrifos	Diazinon	Load	Load Compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	10/Jun/2008	Irrigation3	0.12		8.00	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	15/Jul/2008	Irrigation4	0.028		1.87	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	12/Aug/2008	Irrigation5	0.014		0.93	In Compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	16/Sep/2008	Irrigation6	0.12		8.00	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	12/May/2009	Irrigation2, MPM	0.032		2.13	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	14/Jul/2009	Irrigation4, MPM	0.66		44.00	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	15/Sep/2009	Irrigation6, MPM	0.086		5.73	Out of compliance
2	Unnamed Drain to Lone Tree Creek @ Wagner Rd	16/Sep/2008	Irrigation6, MPM	0.14		9.33	Out of compliance
3	Terminus Tract Drain @ Hwy 12	16/Feb/2005	Storm1		0.025	0.25	In Compliance
3	Terminus Tract Drain @ Hwy 12	21/Mar/2005	Storm2	0.012		0.80	In Compliance
3	Terminus Tract Drain @ Hwy 12	23/Jan/2008	Storm1	0.0047	0.011	0.42	In Compliance
3	Terminus Tract Drain @ Hwy 12	12/Aug/2008	Irrigation5	0.021		1.40	Out of compliance
3	Terminus Tract Drain @ Hwy 12	16/Sep/2008	Irrigation6	0.02		1.33	Out of compliance
4	Grant Line Canal @ Clifton Court Rd	21/Mar/2005	Storm2	0.02		1.33	Out of compliance
4	Grant Line Canal @ Clifton Court Rd	19/Sep/2006	Irrigation5		0.038	0.38	In Compliance
4	Grant Line Canal @ Clifton Court Rd	11/Feb/2007	Storm1	0.08		5.33	Out of compliance
4	Grant Line Canal @ Clifton Court Rd	28/Feb/2007	Storm2	0.018		1.20	Out of compliance
4	Grant Line Canal @ Clifton Court Rd	04/Sep/2007	Irrigation6	0.13		8.67	Out of compliance
4	Grant Line Canal @ Clifton Court Rd	23/Jan/2008	Storm1	0.14		9.33	Out of compliance
4	Grant Line Canal near Calpack Rd	16/Feb/2005	Storm1		0.012	0.12	In Compliance
4	Grant Line Canal near Calpack Rd	21/Mar/2005	Storm2	0.076		5.07	Out of compliance
4	Grant Line Canal near Calpack Rd	19/Jul/2005	Irrigation3	0.053		3.53	Out of compliance
4	Grant Line Canal near Calpack Rd	16/Aug/2005	Irrigation4	0.15		10.00	Out of compliance
4	Grant Line Canal near Calpack Rd	16/May/2006	Irrigation1	0.12		8.00	Out of compliance
4	Grant Line Canal near Calpack Rd	20/Jun/2006	Irrigation2	0.011		0.73	In Compliance
4	Roberts Island Drain @ Holt Rd	19/Sep/2006	Irrigation4, Irrigation5	0.018		1.20	Out of compliance
4	Roberts Island Drain @ Holt Rd	23/Jan/2008	Storm1		0.029	0.29	In Compliance
4	Roberts Island Drain @ Holt Rd	12/Aug/2008	Irrigation5	0.034		2.27	Out of compliance
4	Roberts Island Drain @ Holt Rd	10/Feb/2009	Winter2	0.0057		0.38	In Compliance
4	Roberts Island Drain along House Rd	23/Jan/2008	Storm1		0.022	0.22	In Compliance
4	Roberts Island Drain along House Rd	12/Aug/2008	Irrigation5	0.044		2.93	Out of compliance

Zone	Station Name	Sample Date	Grouping	Chlorpyrifos	Diazinon	Load	Load Compliance
4	Roberts Island Drain along House Rd	16/Sep/2008	Irrigation6	1.7		113.33	Out of compliance
5	Stanislaus River Drain @ South Airport Way	14/Oct/2008	Fall1	0.027		1.80	Out of compliance
6	Sand Creek @ Hwy 4 Bypass	16/May/2006	Irrigation1	0.089		5.93	Out of compliance
6	Sand Creek @ Hwy 4 Bypass	20/Jun/2006	Irrigation2	0.038		2.53	Out of compliance
6	Sand Creek @ Hwy 4 Bypass	18/Jul/2006	Irrigation3		0.45	4.50	Out of compliance
6	Sand Creek @ Hwy 4 Bypass	23/Jan/2008	Storm1		0.11	1.10	Out of compliance

MPM – Management Plan Monitoring

Table 16. SJCDWQC zone load allocation compliance - tally of compliant load calculations for all data collected from 2004 - 2009 and 2009 only.

SJCDWQC Zone	Sample Date Year(s)	In Compliance	Out of Compliance
Zone 1	2004 -2009	2	0
Zone 2	2004 -2009	31	66
Zone 3	2004 -2009	3	2
Zone 4	2004 -2009	6	13
Zone 5	2004 -2009	0	1
Zone 6	2004 -2009	4	0
Zone 1	2009	2	0
Zone 2	2009	4	8
Zone 3	2009	0	0
Zone 4	2009	1	0
Zone 5	2009	0	0
Zone 6	2009	0	0

Implementation of management practices to reduce off-site movement of diazinon and chlorpyrifos

The report "General Survey Summary Report" submitted by the SJCDWQC to the Regional Board on December 30, 2008 assessed management practices utilized by growers within the Coalition region. Based on 2008 membership information, 2483 current members representing 322,146 acres (61% of enrolled irrigated acreage) can be linked to a survey with at least the one question completed.

Survey summaries were provided for the following subwatersheds:

1. Duck Creek @ Highway 4
2. French Camp Slough @ Airport Way
3. Grant Line Canal @ Clifton Court Rd
4. Grant Line Canal near Calpack Rd
5. Kellogg Creek along Hoffman Ln
6. Littlejohns Creek @ Jack Tone Rd
7. Lone Tree Creek @ Jack Tone Rd
8. Marsh Creek @ Concord Ave
9. Mokelumne River @ Bruella Rd
10. Mormon Slough @ Jack Tone Rd
11. Roberts Island Drain @ Holt Rd
12. Roberts Island Drain along House Rd
13. Terminous Tract Drain @ Hwy 12
14. Unnamed Drain to Lone Tree Creek @ Jack Tone Rd

Duck Creek @ Hwy 4, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd are currently high priority subwatersheds. Members within each of these subwatersheds have been asked to attend outreach and education meetings to discuss water quality results and management practices that can be implemented to reduce agricultural drainage. Completed surveys document current management practices and any additional management practices that growers intend to implement. An assessment of current and newly implemented management practices will be submitted as an addendum to this report by May 30, 2010.

Current management practices, newly implemented practices and an evaluation of management practice effectiveness will be conducted within subwatersheds as they become high priority (see Table 6 in this report).

Alternatives to diazinon and chlorpyrifos surface water quality impacts

Alternatives to chlorpyrifos and diazinon depend on the commodity and the registration of alternative products. For many commodities, alternative products include pyrethroid pesticides. These are considered “safe” alternatives because of their low mammalian toxicity. However, recent research has demonstrated that they can be very toxic to aquatic organisms at extremely low concentrations. These products have very high K_{oc} values and tend to bind to sediment and can be moved to surface waters during irrigation or rainfall events. The high K_{oc} values make these products difficult to detect in water as they are seldom found in the dissolved phase. During the early years of the ILRP, the Coalition analyzed for pyrethroids with no detections. The Coalition does monitor for sediment toxicity and if there is a toxic sample that meets the threshold for additional analysis, the Coalition is required to analyze the sediment for pyrethroids and chlorpyrifos. To date, no toxic samples have met the threshold and no analyses have been performed. There may be additional products that qualify as organic (e.g. citrus oils) but the Coalition does not track or recommend their use because their efficacy relative to synthetic pesticides is low.

The Coalition collects information on pesticide use and provides this information to the Regional Board as part of the SJCDWQC Annual Monitoring Report. In addition, the Coalition address toxicity, pesticides, and sediment bound analytes with specific management practices when conducting outreach and education whether or not there is a TMDL. Growers are made aware that switching pesticides may lead to other water quality concerns.

The Coalition has met with pesticide retailers and Pest Control Advisors to assist in providing outreach to growers and applicators in the Coalition area (see Table 12). Also, in anticipation of potential water quality problems caused by agricultural inputs, the Coalition will distribute management practice publications on preventing movement of pesticides in irrigation runoff or drift. The Coalition is currently working on a Department of Pesticide Grant to develop a workbook to address management practices for wine grapes, tomatoes, alfalfa, and walnuts. The workbook first will be distributed to growers within high priority subwatersheds to obtain feedback. A draft winegrape workbook is included in Appendix I. A meeting with wine grape growers in Duck Creek, Unnamed Drain to Lone Tree (also known as Temple Creek), Lone Tree Creek and Littlejohns Creek was conducted on March 25, 2010.

Toxicity impairment due to additive or synergistic effects of multiple pollutants

Loads were calculated to evaluate the additive effect of chlorpyrifos and diazinon concentrations from 2004 through 2009 (Table 15).

The SJCDWQC MRPP discusses additivity and synergistic effects on page 91. Toxicity monitoring will also be conducted at Assessment sample locations which will assist in the evaluation of additive or synergistic effects of multiple pollutants.

In 2009 there were two occurrences of toxicity to *C. dubia* and one occurrence of toxicity to *S. capricornutum* (Table 17). Both *C. dubia* toxicities occurred during MPM in high priority subwatershed and occurred at the same time as exceedances of the chlorpyrifos WQO. It is unclear what caused the reduced cell growth in the single algae toxicity that was experienced at Walthall Slough @ Woodward Ave since the TIE was inconclusive; possible causes include copper and herbicide applications.

Table 17. 2009 water column toxicity results with potential causes attributable to current pesticide applications.

Station Name	Sample Date	Species	Toxicity End Point	Percent Control	Associated Cause
Duck Creek @ Hwy 4	7/14/2009	<i>C. dubia</i>	Survival (%)	0	Organophosphate insecticides
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	9/15/2009	<i>C. dubia</i>	Survival (%)	30	Unknown; no toxicity was detected in the TIE
Walthall Slough @ Woodward Ave	3/10/2009	<i>S. capricornutum</i>	Total Cell Count	38	Unknown; no toxicity was detected in the TIE.

Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable

An evaluation of management practices and their effectiveness will be performed on high priority subwatersheds per the SJCDWQC Management Plan strategy outlined in Figures 1 and 2.

Salt and boron

The Regional Board has at least two programs currently operating to deal with this issue. One is the ongoing project of creating a San Joaquin River at Vernalis Salinity and Boron TMDL Basin Plan Amendment. The other is the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) which was established in July 2008 to facilitate and fund efforts needed for the efficient management of salinity in the Central Valley. The Regional Board and State Water Board have initiated this comprehensive effort to address salinity problems in California's Central Valley and adopt long-term solutions that will lead to improved water quality and economic sustainability.

The Coalition: (1) participates in ongoing Regional Water Board programs for the management of salt and boron, and (2) implements actions required by the Regional Water Board. Coalition representatives attend CV-SALTS meetings and participate in planning and reviewing studies relevant to the development of a Basin Plan amendment for salt and boron (Table 18).

An initial CEQA scoping workshop was held in May 2005 and the San Joaquin River at Vernalis Salinity and Boron Total Maximum Daily Loads (TMDL) Basin Plan Amendment was adopted

with EPA approval in October 2006, but there have been new developments in the project since then including a revised geological scope, an increased cooperation between the State and the Regional Boards, and an effort to coordinate with CV-SALTS. On March 30, 2009, a CEQA Scoping Meeting for the Salt and Boron TMDL in the San Joaquin and Sacramento Rivers was held to discuss the Proposed Basin Plan Amendment to establish new salinity and boron water quality objectives in the Lower San Joaquin River upstream of Vernalis and a TMDL to implement the salinity and boron water quality objectives. Currently, the State and Central Valley Water Boards plan to coordinate with the CV-SALTS Technical Advisory Committee. CV-SALTS and the Central Valley Salinity Coalition continue to provide and educate the public through information and resources available on their website, www.cvsalinity.org, and by hosting meetings open to the public to move forward in the management of salt and boron. These meetings included the CV-SALTS Technical Advisory Committee's series of meetings to discuss the Reclamation Draft Compliance Monitoring and Evaluation Plan, the Basin Plan Training for nearly 70 CV-SALTS participants on September 3, 2009, and the Annual Salinity Leadership Group Meeting (formally the Salinity Policy Group) on September 24, 2009 (Table 18).

Small portions of the Stanislaus River and Northwest Side subareas of the salt/boron TMDL are found within the Coalition boundaries. In compliance with the Basin Plan, the Coalition is communicating with the growers these areas about the Basin Plan requirements, including load allocation for these subareas, to help meet the schedule for compliance for salt and boron.

Table 18. CV-SALTS meetings from 2006 through December 2009. The Coalition began attending meetings in 2009.

Constituent / Organization	Meeting Date	Meeting Title
Boron & Salt / CV-SALTS	30-Nov-06	The Central Valley Salinity Policy Group Meeting
Boron & Salt / CV-SALTS	11-Mar-08	Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	30-Oct-08	The Central Valley Salinity Policy Group Meeting
Boron & Salt / CV-SALTS	13-Jan-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	13-Jan-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	2-Feb-09	Emergency Executive Committee Meeting
Boron & Salt / CV-SALTS	5-Feb-09	Salt Sources Work Plan Subcommittee
Boron & Salt / CV-SALTS	18-Feb-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	18-Feb-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	9-Mar-09	Economic and Technical Advisory Sub-Committee Meeting
Boron & Salt / CV-SALTS	18-Mar-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	18-Mar-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	14-Apr-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	17-Apr-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	4-May-09	Coordinating Committee Meeting
Boron & Salt / CV-SALTS	13-May-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	13-May-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	14-May-09	Technical Workshop - Policy Workshop Lessons from Santa Ana
Boron & Salt / CV-SALTS	28-May-09	Staff Workshop to Discuss Technical Reports
Boron & Salt / CV-SALTS	2-Jun-09	Technical Workshop - Salt Nitrate Pilot Study Selection

Constituent / Organization	Meeting Date	Meeting Title
Boron & Salt / CV-SALTS	17-Jun-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	17-Jun-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	30-Jun-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	14-Jul-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	14-Jul-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	28-Jul-09	Technical Advisory Committee: Reclamation Draft Compliance Monitoring and Evaluation Plan (Meeting 1)
Boron & Salt / CV-SALTS	4-Aug-09	Technical Advisory Committee: Reclamation Draft Compliance Monitoring and Evaluation Plan (Meeting 2)
Boron & Salt / CV-SALTS	17-Aug-09	Technical Advisory Committee: Reclamation Draft Compliance Monitoring and Evaluation Plan (Meeting 3)
Boron & Salt / CV-SALTS	19-Aug-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	19-Aug-09	Executive Committee and Outreach/Education Committee Meeting
Boron & Salt / CV-SALTS	24-Aug-09	Technical Advisory Committee: Reclamation Draft Compliance Monitoring and Evaluation Plan (Meeting 4)
Boron & Salt / CV-SALTS	3-Sep-09	Special Basin Planning Training Meeting
Boron & Salt / CV-SALTS	16-Sep-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	16-Sep-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	24-Sep-09	Salinity Leadership Group Annual Meeting
Boron & Salt / CV-SALTS	28-Sep-09	Workshop - Multi-State Salinity Coalition
Boron & Salt / CV-SALTS	29-Oct-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	29-Oct-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	5-Nov-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	17-Nov-09	Beneficial Use and Objective Scope Meeting
Boron & Salt / CV-SALTS	19-Nov-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	19-Nov-09	Executive Committee Meeting
Boron & Salt / CV-SALTS	7-Dec-09	Draft Salt and Nitrate Source Pilot Report Presentation
Boron & Salt / CV-SALTS	16-Dec-09	Economic and Technical Advisory Committee Meeting
Boron & Salt / CV-SALTS	16-Dec-09	Executive Committee Meeting

Dissolved Oxygen

To demonstrate compliance with the Basin Plan and “The Control Program for Factors Contributing to the Dissolved Oxygen (DO) Impairment in the Stockton Deep Water Ship Channel”, agriculturally-influenced tributaries to the San Joaquin River are routinely monitored, as described in the Coalition’s MRPP and Management Plan. The Coalition is addressing DO exceedances through the Management Prioritization process (SJCDWQC Management Plan submitted August 25, 2008). In addition, the Coalition is participating in the DO TMDL Technical Working Group meetings (<http://www.sjrdotmdl.org/meetings.html>) including two meetings that occurred in 2010. In general, the Coalition will work to comply with the DO Basin Plan load allocations for oxygen demanding substances by December 2011.

The Coalition conducted a special study to determine if Biological Oxygen Demand (BOD) was the cause of low DO in several water bodies. The results of this study were included in: (1)

Appendix VIII of the December 30, 2007 Semi Annual Monitoring Report and (2) Site Subwatershed Management Plans (SJCDWQC Management Plan submitted August 25, 2008 Pages 147-342). Future studies will be conducted as required by the Regional Water Board.

Mercury

The Regional Board is in the process of creating a Sacramento River and San Joaquin River Delta mercury control program that includes a methylmercury TMDL. Several meetings have been held over the past year as part of the stakeholder process. The purpose of this process is to clearly identify issues related to the TMDL, improve understanding between affected stakeholders and regulators, discuss solutions, and make recommendations to the Water Board for the TMDL and Basin Plan amendment. Two types of meetings take place as part of this stakeholder process. Stakeholder Meetings occur monthly and include a large group of stakeholders representing a diversity of interests. In addition, throughout the month smaller topic-specific Workgroup Meetings are held to address key concerns raised at the large stakeholder meetings. Current Workgroups include the Principles Workgroup, Adaptive Framework Workgroup, NPDES Workgroup, and the Nonpoint Source Workgroup. These workgroups then report their research, discussions and recommendations to the larger group.

Coalition representatives John Herrick and Mike Wackman attend many of the Stakeholder meetings to ensure the Coalition is well informed; this will be further discussed in the April 1, 2010 Management Plan Update. The Coalition will strive to incorporate the outcomes of the mercury control plan into its management plan so that members remain in compliance and continue to implement measures to improve water quality.