

January 6, 2012

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

Dear Ms. Creedon,

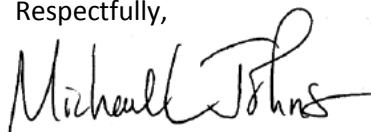
The San Joaquin County and Delta Water Quality Coalition (Coalition) is submitting a request to remove monitoring requirements for specific constituents from selected site subwatershed management plans and therefore from the site's Management Plan Monitoring (MPM) schedule. The Coalition's Management Plan process outline in the Coalition's original Management Plan (approved January 23, 2009, Figure 2) and updated in the Management Plan Update Report for 2010 (Figure 1, page 13) includes two or more years of Management Plan Monitoring after which there is the potential to petition the Regional Board for removal of analytes from the subwatersheds management plan and MPM schedule.

A management plan must be developed for a specific site if 1) a constituent exceeds the Water Quality Trigger Limit (WQTL) once when that constituent has an implemented Total Maximum Daily Load (TMDL) Basin Plan Amendment, or 2) if there is more than one exceedance of the WQTL for a constituent without a TMDL. The Coalition initiates several actions once a constituent is added to the Management Plan including additional MPM during months of past exceedances, identification of potential sources, and focused outreach to address the source of the constituent and eliminate its discharge to surface waters of the State. If there are two consecutive years of monitoring at a site with no exceedances of the WQTL for the management plan constituent (either during Core Monitoring, Assessment Monitoring, MPM, or a combination of any of the three), that constituent may be removed from active management plan.

The basis for the request is the completion of two consecutive years of monitoring at a site subwatershed with no exceedances of the specific constituent indicating improved water quality due to implemented management practices by growers in the subwatershed. If approved, the Coalition will remove requested constituents from site subwatershed management plans. However, the Coalition will monitor these locations for the specific constituents when the site rotates into Assessment Monitoring. The request is included on the following pages.

If necessary, we can schedule a meeting to discuss this request at your earliest convenience.

Respectfully,



Michael L. Johnson
Technical Program Manager

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INTRODUCTION

When a constituent becomes the focus of the SJCDWQC Management Plan, the Coalition initiates actions to address the exceedances including additional Management Plan Monitoring (MPM) during months of past exceedances and focused outreach. The SJCDWQC Management Plan includes a flow chart which describes the process by which the Coalition conducts monitoring, source identification, and outreach and evaluation of implemented management practices. The goal is that after focused outreach and growers will implement additional management practices and there will be an improvement of water quality. The Coalition began its general outreach in 2007 and initial focused outreach in 2008 and has collected sufficient water quality data for a subset of subwatersheds and constituents to document improved water quality. The Coalition believes that there is adequate supporting evidence to request the removal of the site subwatershed constituents listed in Table 1.

Table 1. SJCDWQC site subwatersheds, Assessment Monitoring history and constituents to remove from active management plan and Management Plan Monitoring schedule.

SITE SUBWATERSHED	MOST RECENT ASSESSMENT MONITORING	FUTURE ASSESSMENT MONITORING	DISSOLVED OXYGEN (DO)*	pH*	SPECIFIC CONDUCTANCE (SC)*	COPPER (TOTAL & DISSOLVED)	LEAD TOTAL & DISSOLVED)	DIAZINON	DIELDRIN	DIURON	SIMAZINE	CERIODAPHNIA DUBIA TOXICITY	PIMEPHALES PROMELAS TOXICITY	SELENASTRUM CAPRICORNUTUM TOXICITY	HYALELLA AZTECA TOXICITY
Duck Creek @ Hwy 4	2008 [†]	2012		X				X						X	
French Camp Slough @ Airport Way	2011	2014							X						
Grant Line Canal @ Clifton Court Rd	2008 [†]	After 2031				X	X								
Lone Tree Creek @ Jack Tone Rd	2008 [†]	2026			X	X		X		X				X	X
Mokelumne River @ Bruella Rd	2011	2014	X			X									
Terminus Tract Drain @ Hwy 12	2010	2013											X	X	
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	2008 [†]	2030								X	X	X		X	

*Field parameters will continue to be monitored during Assessment and Core Monitoring events.

[†]Site was monitored for Assessment Monitoring constituents under the 2006 MRPP where monitoring was not defined as Core or Assessment Monitoring.

The Coalition takes several factors into consideration to determine if a constituent can be removed from a site subwatershed's management plan and MPM schedule:

1. No exceedances of the specific constituent(s) occurred during at least two consecutive years of monitoring in months of past exceedances.
2. Documentation of current and newly implemented management practices.

To support the Coalition's request, data are provided for each constituent documenting improvement in water quality and successful outreach. For each site subwatershed, the Coalition provides the following:

- 1.) Constituent overview, monitoring history, summary of monitoring data relevant to specific constituents, potential sources of exceedances and review of PUR data when available/applicable,
- 2.) Summary of outreach and management practices implemented,
- 3.) Schedule for future monitoring, and
- 4.) Justification for request to remove the constituent(s) and review of how the Coalition has met the requirements for removal as outlined in the Coalition's Management Plan Monitoring Strategy and Management Practice Evaluation flowchart (SJCDWQC Management Plan originally approved on January 23, 2009, Figure 2, page 22 and updated in the SJCDWQC Management Plan Update Report for 2010, Figure 1, page 13)

SUPPORTING DOCUMENTATION TO REMOVE SPECIFIC CONSTITUENTS FROM SITE SUBWATERSHED MANAGEMENT PLANS

Duck Creek @ Hwy 4

Constituents Requested to Remove from Management Plan:

- Diazinon
- pH
- *Selenastrum capricornutum* water column toxicity

Subwatershed Overview and Monitoring History

Under the SJCDWQC 2008 Monitoring and Reporting Program Plan (MRPP), originally submitted on August 25, 2008 and approved on September 15, 2008, the Duck Creek @ Hwy 4 site subwatershed is a rotating Assessment Monitoring location within the French Camp Slough @ Airport Way Zone (Zone 2). Monitoring was initiated at Duck Creek @ Hwy 4 during the irrigation season of 2004. Duck Creek @ Hwy 4 was not sampled during 2005, but sampling resumed during the irrigation season of 2006 and continued through the irrigation season of 2011. Management Plan Monitoring occurred at upstream location Duck Creek @ Drais Rd in the irrigation season of 2007 (May, July and September) and continued in 2008 (May, July and September). Upstream monitoring at Duck Creek @ Drais Rd was initiated in an effort to identify the sources of exceedances and ended after the 2008 monitoring events. Management Plan Monitoring continued at Duck Creek @ Hwy 4 through 2011.

The Duck Creek @ Hwy 4 site subwatershed is one of the Coalition's first set of high priority management plan subwatersheds (focused outreach 2008-2010). The Duck Creek @ Hwy 4 site subwatershed management plan was established in 2007 and MPM for high priority management plan constituents occurred from 2007 through 2011 during months of past exceedances. In addition, the Coalition established a list of growers with the greatest likelihood of contributing to the water quality impairments (growers farming parcels with the potential for direct drainage to the creek and growers applying high priority constituents within the last two years). The Coalition contacted these targeted growers in 2008 and 2009 to document currently implemented management practices and encourage the implementation of additional management practices designed to address water quality problems in Duck Creek. The Coalition followed up with targeted growers in 2009, 2010 and 2011 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Diazinon

The Regional Board established a TMDL for diazinon for the drainage area of the SJCDWQC region (Sacramento and San Joaquin Delta Chlorpyrifos and Diazinon TMDL); consequently, diazinon is considered one of the highest priority constituents under the Coalition's Management Plan. Diazinon exceeded the WQTL at the Duck Creek @ Hwy 4 site subwatershed in February 2007 during a storm event.

Since the single diazinon exceedance in 2007, the Duck Creek @ Hwy 4 monitoring location has been sampled for diazinon 30 times; two of those samples were collected during storm events. There have been no exceedances of diazinon in samples collected from Duck Creek @ Hwy 4 during 2008, 2009, 2010 or 2011. There have been no detections of diazinon in samples collected at Duck Creek @ Hwy 4 since January 2009. In addition to MPM during months of past exceedances, this location was sampled monthly during Normal Monitoring in 2008 from April through September and during 2009 January through March. The Coalition conducted MPM for diazinon in 2010 and 2011 (February) and diazinon was also monitored in 2010 (June through December) as part of Department of Pesticide Regulation (DPR) grant monitoring. The PUR data indicate that pounds of diazinon applied in the Duck Creek @ Hwy 4 site subwatershed in 2010 were approximately half of what was applied in 2007. Applications in 2007 (566 lbs AI across 490 acres) compared to applications in 2010 (295 lbs AI across 249 acres) indicate a significant decrease in diazinon use and acres treated in the subwatershed. The end of two consecutive years of monitoring during months of past exceedances was February 2010.

pH

Exceedances of the pH WQTL can be caused by various factors and determining the exact source(s) of exceedances is impossible. The Regional Board has not yet established a TMDL for pH in waterways to which the SJCDWQC region drains; therefore, given the difficulty of sourcing exceedances, pH exceedances are categorized as one of the lowest priority constituents. There have been three pH exceedances at the Duck Creek @ Hwy 4 site and one at the upstream location Duck Creek @ Drais Rd; the most recent pH exceedance occurred in May 2008 (prior exceedances of pH occurred in August 2006, June 2007 and May 2008 at the upstream location).

All field parameters, including pH, are measured at each site during every monitoring event (Core Monitoring, Assessment Monitoring and MPM). Therefore, monitoring for pH has occurred at Duck Creek @ Hwy 4 during each monitoring event and will continue for all sample collection events in the future. Although pH is not considered a high priority constituent and the Coalition does not conduct MPM specifically for pH, MPM occurred for other constituents during the months of May, June, and August in 2009, 2010, and 2011 and pH was measured at that time. There have been no exceedances of pH since May 2008 in 39 events including four times in May, four times in June and five times in August, all months of past exceedances. As of May 2011, there are over two consecutive years of no exceedances of pH.

***Selenastrum capricornutum* water column toxicity**

Water column toxicity to *S. capricornutum* is indicative of herbicides, algaecides and/or fungicides in surface waterways. Because there has never been an exceedance of the WQTL for any herbicide in the Duck Creek @ Hwy 4 subwatershed and there are no herbicides in the site's management plan, the Coalition has categorized toxicity to *S. capricornutum* as one of the lowest priority constituents. Toxicity to *S. capricornutum* occurred three times in the Duck Creek @ Hwy 4 site subwatershed. The first toxic sample was collected in February 2007 with 77% growth compared to the control; a TIE was not initiated because growth was greater than 50% compared to the control. The second and third toxic samples were collected in April and May 2008 (samples collected during both resampling events were not toxic)

and both TIEs were inconclusive due to the lack of toxicity in the samples by the time the TIEs were initiated.

Since the most recent toxicity in May 2008, there have been two consecutive years of monitoring with no *S. capricornutum* toxicity. The Coalition has monitored for toxicity to *S. capricornutum* 20 times from May 2008 through 2011 including monthly sampling that occurred from June 2008 through March 2009 as part of the Coalition's Assessment Monitoring schedule (the Coalition amended its monitoring plan on March 30, 2009). None of the samples collected since the last toxicity in May 2008 were toxic to *S. capricornutum* including three samples collected in February, three samples collected in April and four samples collected in May (months of past exceedances). The end of two consecutive years of monitoring during months of past exceedances was May 2011.

Outreach

The Duck Creek @ Hwy 4 site subwatershed is one of the first high priority site subwatersheds to receive a focused, detailed approach to addressing its management plan constituents. The Coalition's strategy for outreach is to contact growers identified as having the greatest likelihood of contributing to exceedances. The Coalition conducted individual meetings with 35 targeted growers in 2008 and 2009 to review each grower's operation and document currently implemented management practices as well as discuss water quality concerns, including lower priority management plan constituents such as pH and *S. capricornutum* toxicity. The Coalition encourages growers to evaluate their farming operations in order to avoid issues with off-site movement of pesticides. Certain management practices are recommended if Coalition representatives determine that they could be effective in reducing agricultural discharges. During the next year, 19 of the targeted growers were contacted to determine if recommended and/or new practices were implemented. Additional outreach was made in 2011 to 6 growers (members and non-members) based on their use of high priority constituents. The focus of the contacts was to discuss implementing additional management practices that could improve overall water quality in the subwatershed.

Based on survey and follow up results, targeted growers in the Duck Creek subwatershed implemented management practices that have successfully improved water quality as reflected by the absence of exceedances of the WQTLs for diazinon, pH and *S. capricornutum* toxicity by reducing the use of pesticides and reducing runoff.

The Coalition continues to provide outreach to all members within the Duck Creek @ Hwy 4 site subwatershed. Additional outreach is planned for 2012 for members who have applied high priority constituents. Through grower notifications and grower meetings, members continue to be made aware of water quality results, relevant management practices that will address water quality concerns, availability of funding for management practice implementation, results of special studies of management practice efficacy, and tracking implementation of management practices. In addition, this subwatershed remains a high priority subwatershed for other constituents and focused outreach continues with growers who have the greatest likelihood of contributing to those exceedances. Through

continued outreach the Coalition believes it can prevent the reoccurrence of diazinon, pH, and/or *S. capricornutum* toxicity exceedances.

Future Monitoring

Duck Creek @ Hwy 4 is scheduled for Assessment Monitoring in 2012 under the current MRPP. All other priority constituents under the current Management Plan at Duck Creek @ Hwy 4 will continue to be monitored for MPM during months of previous exceedances.

Summary: Justification to Remove Constituents from Duck Creek @ Hwy 4 Management Plan

The Coalition addressed management plan constituents within the Duck Creek @ Hwy 4 subwatershed with a focused, detailed approach for sourcing past exceedances. Source analysis identified growers with the potential to contribute to the exceedance and the Coalition has conducted individual outreach with those targeted growers. The outcome of these efforts has been the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality impairments. The results of MPM indicate two consecutive years of no exceedances of the WQTLs for diazinon, pH and *S. capricornutum* water column toxicity. Therefore, the Coalition requests that diazinon, pH and *S. capricornutum* water column toxicity be removed from the Duck Creek @ Hwy 4 management plan and MPM schedule.

The Coalition believes its outreach within the Duck Creek @ Hwy 4 subwatershed will continue to keep growers aware of the potential for water quality impairments caused by discharges from agriculture. In addition, monthly Assessment Monitoring in 2012 will include diazinon, pH and *S. capricornutum* toxicity and will allow the Coalition to continue evaluating water quality at the Duck Creek @ Hwy 4 subwatershed with respect to these constituents.

French Camp Slough @ Airport Way

Constituents Requested to Remove from Management Plan:

- Dieldrin

Subwatershed Overview and Monitoring History

Under the current MRPP, French Camp Slough @ Airport Way is the Core Monitoring location in Zone 2. Monitoring was initiated at French Camp Slough @ Airport Way during the storm season of 2005 and has occurred continuously through fall 2011. Core constituents were monitored at French Camp beginning in the fall of 2008 through the fall of 2010. Assessment Monitoring was initiated in 2011 and is scheduled to occur every third year thereafter (2014, 2017, 2020). Core Monitoring will resume at this location in 2012.

The Coalition began conducting general outreach and education in the French Camp Slough @ Airport Way subwatershed in 2007. The French Camp Slough @ Airport Way site subwatershed is also one of the Coalition's third set of high priority subwatersheds (focused outreach 2011-2013). Management Plan Monitoring for high priority constituents began in 2007 (June, July and August), resumed in 2010 (Year 0 of focused outreach) and has continued through 2011 (Year 1 of focused outreach) during months of past exceedances. Carbamates, organochlorines and organophosphates were sampled during all 2009 events to provide additional data to evaluate the high priority subwatersheds at upstream locations which drain into French Camp Slough @ Airport Way site subwatershed (Littlejohns Creek @ Jack Tone Rd, Lone Tree Creek @ Jack Tone Rd and Unnamed Drain to Lone Tree Creek @ Jack Tone Rd). During 2011, all constituents were monitored monthly as a part of Assessment Monitoring and high priority MPM constituents were assessed during months of previous exceedances including dieldrin (July). The Coalition also conducted MPM during 2011 at the upstream locations at Littlejohns Creek, Lone Tree Creek and Unnamed Drain to Lone Tree Creek. Additionally, the Coalition established a list of targeted growers in the French Camp Slough @ Airport Way subwatershed for outreach contact. The Coalition contacted these targeted growers in 2011 to document currently implemented management practices and encourage the implementation of additional management practices to address water quality issues in the French Camp Slough @ Airport Way site subwatershed.

Constituent Monitoring Results and Sourcing

Dieldrin

Dieldrin is an organochlorine pesticide that has been banned from agricultural use in the United States since 1985 and is therefore considered a legacy pesticide. Dieldrin has exceeded the WQTL two times at French Camp Slough @ Airport Way, once during July of 2007 and again during July of 2008. Since the two dieldrin exceedances occurred, French Camp Slough @ Airport Way has been sampled for dieldrin 29 times; 3 of those samples were collected during July irrigation monitoring events and no exceedances occurred. Additionally, the upstream locations Littlejohns Creek, Lone Tree Creek, and Unnamed Drain to Lone Tree Creek were monitored for dieldrin in 2008 during the storm and irrigation seasons and no exceedances of dieldrin occurred at any of those locations. Although dieldrin is a priority E constituent and the Coalition is not required to conduct MPM for priority E constituents, the Coalition choose to

perform MPM for dieldrin during July of 2010. In 2011, French Camp Slough began Year 1 of high priority MPM and monthly samples were collected for all constituents as part of Assessment Monitoring. There were no exceedances or detections of dieldrin during any of the 2009, 2010 and 2011 monitoring events at French Camp Slough @ Airport Way.

The Coalition believes the dieldrin exceedances in July of 2007 and 2008 occurred due to the result of irrigation runoff to the slough re-suspending bottom sediment in the water column. The Coalition believes focused outreach concerning irrigation tailwater management at the upstream high priority subwatersheds during 2008-2010 (Lone Tree Creek and Unnamed Drain to Lone Tree Creek) and 2010-2012 (Littlejohns Creek) and at French Camp Slough in 2011 has contributed to the decline of runoff during summer months. The end of two consecutive years of monitoring during months of past exceedances was July 2010.

Outreach

The Coalition initiated general outreach in 2007 and French Camp Slough @ Airport Way site subwatershed is one of the third high priority site subwatersheds to receive a focused, detailed approach to addressing its management plan constituents. The Coalition contacts growers with the greatest likelihood of contributing to exceedances of high priority constituents. In 2011, individual meetings with 12 targeted growers were conducted in the French Camp Slough subwatershed to review each grower's operation, document currently implemented management practices and discuss water quality concerns. The Coalition encouraged growers to evaluate their farming operations in order to avoid issues with off-site movement of pesticides. Certain management practices are recommended if they could be effective in reducing agricultural discharges. Additionally, the subwatersheds upstream of French Camp Slough are currently high priority subwatersheds (Littlejohns Creek in 2010-2012, Lone Tree Creek in 2008-2010 and Unnamed Drain to Lone Tree Creek in 2008-2010) and growers in these subwatersheds have been contacted to review their operations to determine how to more efficiently manage irrigation return flows.

Based on survey results, targeted growers in the French Camp Slough subwatershed have successfully reduced their runoff water volumes using irrigation management practices and the Coalition believes these practices have improved water quality as reflected by the absence of exceedances of the WQTLs for dieldrin.

The Coalition has engaged in grower outreach and education to address the French Camp Slough management plan's highest priority constituents and has done the same at the upstream site subwatersheds. Grower meetings with targeted members in French Camp Slough occurred during the winter of 2011 and follow up with targeted members will occur in the winter of 2012 to determine if additional management practices were implemented in 2011 and if any are planned to be implemented during the 2012 irrigation season. The Coalition continues to provide general outreach to all members within the French Camp Slough @ Airport Way site subwatershed. In addition, this subwatershed remains a high priority subwatershed for other constituents of concern and MPM and focused outreach continues with growers with the greatest likelihood of contributing to those exceedances. Through

general and focused outreach the Coalition will continue to inform growers of water quality impairments and will prevent a reoccurrence of dieldrin exceedances.

Future Monitoring

In 2012, Core Monitoring is scheduled to resume at French Camp Slough @ Airport Way under the current MRPP. Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013 as necessary to assess the effect of outreach on water quality. French Camp Slough @ Airport Way returns to Assessment Monitoring every third year under the 2008 MRPP, the next year being 2014.

Summary: Justification to Remove Constituents from French Camp Slough @ Airport Way Management Plan

The Coalition met with growers in the French Camp Slough @ Airport Way subwatershed and addressed management plan constituents within the subwatershed with a focused, detailed approach for sourcing past exceedances. The outcome of these efforts has been the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality problems. Management Plan Monitoring results indicate two consecutive years of no exceedances of the WQTLs for dieldrin. Therefore, the Coalition requests that dieldrin be removed from the French Camp Slough @ Airport Way management plan and MPM schedule.

Growers within the French Camp Slough @ Airport Way site subwatershed are aware of water quality concerns regarding dieldrin and have taken actions to address these concerns. The French Camp Slough @ Airport Way site subwatershed will begin its second year of focused outreach to address high priority constituents in 2012. Actions will include continued MPM and follow up contacts with targeted growers.

In addition, the Coalition believes its outreach within the French Camp Slough @ Airport Way subwatershed will keep growers aware of water quality problems due to agriculture. Monthly Assessment Monitoring in 2014 will include the monitoring of dieldrin and will allow the Coalition to further evaluate water quality at the French Camp Slough @ Airport Way subwatershed.

Grant Line Canal @ Clifton Court Rd

Constituents Requested to Remove from Management Plan:

- Copper
- Lead

Subwatershed Overview and Monitoring History

Starting in October 2008, Grant Line Canal @ Clifton Court Rd became an Assessment Monitoring location under the current MRPP. Grant Line Canal @ Clifton Court Rd is located in Zone 4 and is scheduled to be monitored for all Assessment Monitoring constituents beginning after 2031. Monitoring at Grant Line Canal @ Clifton Court Rd began in the storm season of 2005 and continued through the storm and irrigation seasons of 2006 and 2008. The Grant Line Canal @ Clifton Court Rd MPM for high priority constituents was established in 2007 and occurred during the irrigation season (April through September). Normal Monitoring for lead occurred during the storm and irrigation seasons of 2007 and 2008. The site was not sampled during 2009; however, MPM for copper resumed at Grant Line Canal @ Clifton Court Rd in 2010 and 2011 during months of past exceedances.

Grant Line Canal @ Clifton Court Rd is one of the Coalition's second set of high priority management plan subwatersheds (focused outreach 2010-2012). The Grant Line Canal @ Clifton Court Rd site subwatershed management plan was established in 2007 and MPM for high priority constituents occurred from 2007 through 2008 and from 2010 through 2011 during months of previous exceedances. The Coalition identified growers with the greatest likelihood of contributing to the water quality problems. The Coalition contacted targeted growers in 2010 to document current management practices and encourage the implementation of additional management practices designed to address water quality problems. The Coalition followed up with targeted growers in 2011 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Copper

Copper is routinely used by agriculture on a number of crops and may be found in surface waters as a result of applications. Copper has exceeded the hardness based WQTL six times in the Grant Line Canal @ Clifton Court Rd subwatershed, in 2006 (June, July and September), 2007 (May and July) and 2008 (August).

Since the six exceedances of copper occurred, Grant Line canal @ Clifton Court Rd subwatershed has been monitored for copper 11 times; all 11 of those samples were collected during months of previous exceedances (May, June, July, August and September). In 2007, Grant Line Canal @ Clifton Court Rd was monitored monthly for copper from April through September, additional monitoring also occurred in June and September. Exceedances of the copper WQTL occurred in samples collected in 2007 (May and July); however, the amount of copper detected in MPM samples of the same months was not above the WQTL. In October 2008, the Coalition began monitoring for both the total and dissolved copper

fractions to better characterize copper contamination and more accurately estimate the bioavailable fraction of the metal in the water column. Normal irrigation monitoring in 2008 at Grant Line Canal @ Clifton Court Rd occurred to evaluate copper and resulted in a single exceedance (August) of the copper WQTL. In 2009, Grant Line Canal @ Clifton Court Rd was not scheduled for MPM, Core or Assessment Monitoring. However, the Coalition conducted MPM in 2010 for copper during months of previous exceedances and no exceedances of the copper WQTL occurred. During 2011, MPM for copper took place (May through September) and again, no exceedances of the copper WQTL occurred. The PUR data indicate a marked decrease in copper applications and acres treated in the Grant Line Canal @ Clifton Court Rd site subwatershed. The amount of copper applied within the subwatershed has decreased from 2006 (616 lbs AI across 308 acres) to 2008 (195 lbs AI across 130 acres) with no applications reported in 2009, 2010 or 2011. As of September 2011, there have been two consecutive years of no exceedances of copper.

Lead

Lead is a legacy contaminant from various sources, such as old applications of lead arsenate pesticides, deposition from leaded gasoline, and disposal of lead-containing products including paints, electronic components, batteries, etc. Since lead arsenate pesticide use was banned before the PUR system was initiated, no data exists to be used in sourcing agricultural applications of lead. Given the number of potential sources and since lead is no longer applied for agricultural use, the Coalition categorizes lead as a low priority constituent (priority E). Lead exceeded the hardness based WQTL three times at Grant Line Canal @ Clifton Court Rd in 2006 (June, July and September).

Since lead is not applied by agriculture it is a low priority constituent (priority E) and the Coalition is not required to conduct MPM on priority E constituents; however, since the three lead exceedances in 2006, the Grant Line Canal @ Clifton Court Rd subwatershed has been sampled for lead 15 times; 6 of those samples were collected during months of previous exceedances (June, July and September). During 2007 and 2008, Normal Monitoring occurred at Grant Line Canal @ Clifton Court Rd during the storm and irrigation seasons and lead was analyzed monthly at that time. No exceedances of lead occurred in samples collected from Grant Line Canal @ Clifton Court Rd during the 2007 and 2008 monitoring events. The end of two consecutive years of monitoring during months of past exceedances was September 2008.

Outreach

The Grant Line Canal @ Clifton Court Rd site subwatershed is one of the second high priority site subwatersheds (2010-2012) to receive a focused, detailed approach to addressing its management plan constituents. Since the Grant Line Canal @ Clifton Court Rd became high priority in 2010, the Coalition has actively engaged in grower outreach and education to address Grant Line Canal @ Clifton Court Rd highest priority management plan constituents. The Coalition conducted grower meetings to educate growers about management practices and their importance in achieving acceptable water quality. Individual meetings and follow ups with the two targeted members in the subwatershed have focused on current management practices and expected future implementation of additional management practices.

Based on survey results, targeted growers in the Grant Line Canal @ Clifton Court Rd site subwatershed have successfully reduced the amount of runoff water volumes. The Coalition believes implemented management practices are responsible for improved water quality as reflected by the absence of exceedances of the WQTLs for copper and lead.

The Coalition continues to provide outreach to all members within the Grant Line Canal @ Clifton Court Rd site subwatershed. Through grower notifications and grower meetings, members continue to be informed about water quality results, relevant management practices that address water quality concerns, availability of funding for management practice implementation, results of special studies of management practice efficacy, and tracking management practice implementation. Grant Line Canal @ Clifton Court Rd remains a high priority subwatershed for other constituents of concern and focused outreach continues with targeted growers who have the greatest likelihood of contributing to those exceedances. Through continued general and focused outreach the Coalition will keep growers aware of water quality impairments and will prevent a reoccurrence of copper and lead exceedances.

Future Monitoring

Grant Line Canal @ Clifton Court Rd is scheduled for Assessment Monitoring after 2031 under the current MRPP. All other priority constituents in the Grant Line Canal @ Clifton Court Rd management plan will continue to be monitored for MPM during months of past exceedances.

Summary: Justification to Remove Constituents from Grant Line Canal @ Clifton Court Rd Management Plan

Growers within the Grant Line Canal @ Clifton Court Rd are aware of water quality problems involving copper and lead and have taken actions to address these concerns. All management plan constituents within the Grant Line Canal @ Clifton Court Rd subwatershed have been addressed by the Coalition with a focused, detailed approach for sourcing past exceedances and conducting individual outreach with targeted growers. The outcome of these efforts has been the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality problems. Monitoring at Grant Line Canal @ Clifton Court Rd MPM has occurred for two consecutive years with no exceedances of copper or lead, therefore the Coalition requests that both copper and lead be removed from the Grant Line Canal @ Clifton Court Rd management plan and MPM schedule.

The Coalition's focal point in this subwatershed has been on tailwater management and minimizing spray drift. The Coalition believes its continued contact with growers who have the greatest potential to impact water quality will prevent future copper and lead exceedances. The Coalition believes its general and focused outreach within the Grant Line Canal @ Clifton Court Rd subwatershed will continue to keep growers aware of water quality problems due to discharges from agriculture. In addition, MPM in 2012 will continue for other high priority constituents.

Lone Tree Creek @ Jack Tone Rd

Constituents Requested to Remove from Management Plan:

- Copper
- Diazinon
- Diuron
- Specific Conductance (SC)
- *Selenastrum capricornutum* water column toxicity
- *Hyalella azteca* sediment toxicity

Subwatershed Overview and Monitoring History

In the SJCDWQC 2008 MRPP the Lone Tree Creek @ Jack Tone Rd site subwatershed is one of the rotating Assessment Monitoring locations within French Camp Slough @ Airport Way Zone (Zone 2). Monitoring at Lone Tree Creek @ Jack Tone Rd began during the irrigation season of 2004 and has continued through 2011. Upstream monitoring took place at Lone Tree Creek @ Valley Home Rd and Lone Tree Creek @ Brennan Rd during the irrigation season of 2008 only. Management Plan Monitoring at Lone Tree Creek @ Jack Tone Rd began during the irrigation season of 2007 and has continued through 2011.

The Lone Tree Creek @ Jack Tone Rd site subwatershed is one of the Coalition's first set of high priority management plan subwatersheds (focused outreach 2008-2010). The Lone Tree Creek @ Jack Tone Rd site subwatershed management plan was established in 2007 and MPM for high priority management plan constituents occurred from the 2007 irrigation season through 2011 during months of past exceedances. In addition, the Coalition identified growers farming parcels with the potential for direct drainage to the creek and growers applying high priority constituents within the last two years. These targeted growers were contacted in 2008 and 2009 to document current management practices and encourage the implementation of additional management practices designed to address water quality problems in Lone Tree Creek. The Coalition followed up with targeted growers in 2010 and 2011 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Copper

Since monitoring began in 2004, copper has exceeded the hardness based WQTL seven times in the Lone Tree Creek @ Jack Tone Rd site subwatershed and once upstream at Lone Tree Creek @ Valley Home Rd. Exceedances occurred in 2006 (August), 2007 (February, July, August and September) and most recently in 2008 (January and at the upstream location at Valley Home Rd in July).

Since the most recent copper exceedance in 2008, the Lone Tree Creek @ Jack Tone Rd monitoring location has been sampled for copper 15 times, one of those samples was collected during a storm event. Since the most recent exceedance, associated upstream sites have been sampled for copper four times (twice at Brennan Rd and twice at Valley Home Rd) none were collected during a storm event.

There have been no exceedances of copper in samples collected from Lone Tree Creek @ Jack Tone Rd or any associated upstream locations in 2009, 2010 or 2011. In addition to MPM during months of past exceedances, Lone Tree Creek @ Jack Tone Rd was sampled in 2008 during the irrigation season (April through September) as part of Normal Monitoring. Upstream monitoring at Lone Tree Creek @ Valley Home Rd took place from May through September 2008 and monitoring at Lone Tree Creek @ Brennan Rd took place from July through September 2008. Monitoring at both of the upstream locations ended after the 2008 sampling events. The Coalition conducted MPM for copper in 2009 (July-September), 2010 (January, February and July-September), and 2011 (January, February and July-September). The PUR data indicate that since 2004 there has been a decrease by almost 50% in copper applications and acres treated in the Lone Tree Creek @ Jack Tone Rd site subwatershed. The largest amount of copper applied in the past was in 2005 (40,007 lbs AI across 8,446 acres) while the lowest amount applied was in 2010 (20,146 lbs AI across 5,022 acres). The end of two consecutive years of monitoring in months of previous exceedances was July 2011.

Diazinon

Diazinon exceeded the WQTL twice at the Lone Tree Creek @ Jack Tone Rd site subwatershed during the February 2007 and January 2008 storm events. Diazinon is one of the highest priority constituents in the Lone tree Creek @ Jack Tone Rd subwatershed.

Since the most recent (January 2008) diazinon exceedance, the Lone Tree Creek @ Jack Tone Rd monitoring location has been sampled for diazinon 17 times, one of those samples was collected during a storm event. In addition to MPM during months of past exceedances; this location was sampled monthly during the irrigation season of 2008 for Normal Monitoring from April through September. Department of Pesticide Regulation (DPR) grant monitoring for diazinon occurred at Lone Tree Creek @ Jack Tone Rd in 2010 (June through December) and in 2011 (January and February). The Coalition conducted MPM for diazinon in January and February of 2010 and 2011. There were no exceedances of diazinon in 2009, 2010 or 2011. The PUR data indicate that since 2006 there has been a substantial decrease in diazinon applications and acres treated in the Lone Tree Creek @ Jack Tone Rd site subwatershed. The largest amount of diazinon applied in the past was in 2006 (1,948 lbs AI across 1318 acres) while the lowest amount applied was in 2007 (267 lbs AI across 161 acres). Applications in 2010 continued to be low (340 lbs AI across 170 acres). The end of two consecutive years of monitoring in months of past exceedances was February 2011.

Diuron

Diuron is a soluble herbicide applied throughout the year and is considered to be a high priority constituent under the Coalition's management plan. Diuron exceeded the WQTL three times at the Lone Tree Creek @ Jack Tone Rd site subwatershed, all three exceedances occurred during storm events (twice in February 2007 and once in January 2008).

Since the most recent diuron exceedance in 2008, the Lone Tree Creek @ Jack Tone Rd monitoring location has been sampled for diuron 10 times; one of those samples was collected during a storm event. In addition to MPM during months of past exceedances, this location was sampled monthly

during normal irrigation monitoring in 2008 (April through September). The Coalition conducted MPM for diuron in January and February of 2010 and 2011. There have been no exceedances of diuron in 2009, 2010 or 2011. The PUR data indicate that since 2004 there has been a substantial decrease in diuron applications and acres treated in the Lone Tree Creek @ Jack Tone Rd site subwatershed. The largest amount of diuron applied in the past was in 2004 (866 lbs AI across 905 acres); however, when compared to 2004, diuron applications declined by more than 60 percent in 2010 (269 lbs AI across 378 acres). The end of two consecutive years of monitoring in months of past exceedances was February 2011.

Specific Conductance (SC)

Exceedances of the SC WQTL can be caused by various factors, including tidal flux and determining the exact source(s) of exceedances is impossible. The Regional Board has established a TMDL for SC in waterways to which SJCDWQC drains. Given the difficulty of sourcing exceedances, SC exceedances are categorized as one of the lowest priority constituents. There has been only one exceedance of SC at an upstream site to Lone Tree Creek @ Jack Tone Rd in February 2006 at Lone Tree Creek @ Brennan Rd.

All field parameters, including SC, are measured during every monitoring event (Core Monitoring, Assessment Monitoring and MPM). Therefore, monitoring for SC has occurred at Lone Tree Creek @ Jack Tone Rd during each monitoring event and will continue for all sample collection events in the future. Since February 2006, no exceedances of SC have occurred during the eight sampling events at Lone Tree Creek @ Brennan Rd (six normal sampling events, one resample and one bacteria source study event). There have been no exceedances of SC in 57 events at Lone Tree Creek @ Jack Tone Rd. As of February 2011, there have been two consecutive years of no exceedances.

***Selenastrum capricornutum* water column toxicity**

Water column toxicity to *S. capricornutum* is indicative of herbicides, algaecides and/or fungicides in surface waterways. Since there have been exceedances of the WQTL for herbicides, algaecides and/or fungicides in Lone Tree Creek, *S. capricornutum* is categorized as a high level priority constituent. Toxicity to *S. capricornutum* has occurred six times in the Lone Tree Creek @ Jack Tone Rd site subwatershed and three times at the upstream location Lone Tree Creek @ Brennan Rd. A TIE was only initiated if algal growth was less than 50% compared to the control. At Lone Tree Creek @ Jack Tone Rd, four of the six toxic samples did not require TIEs and only one of the resampling events tested toxic, toxicity was not persistent to all other resamples collected between the first toxicity in 2005 (February) to the last toxicity in 2008 (May). The two toxic sampling events at Lone Tree Creek @ Jack Tone Rd that required the initiation of TIEs were the February 2007 (31% growth compared to the control) and the May 2008 (7% growth compared to the control) events. The TIE for the February 2007 event concluded that non-polar organics/metals were the source of toxicity; toxicity was not persistent from the resampling event that took place in March 2007. The TIE for the May 2008 event was inconclusive because the sample lost all toxicity by the time the TIE was initiated. Upstream samples collected from Lone Tree Creek @ Brennan Rd tested toxic to *S. capricornutum* in 2006 (February and March) with 74% and 56% growth compared to the control, respectively; and therefore a TIE was not required.

Resamples collected during the 2006 February event were not toxic but the samples collected during the 2006 March resampling event were still toxic.

Since the most recent toxicity in May 2008, there have been two consecutive years of monitoring with no toxicity to *S. capricornutum*. The Coalition has monitored for *S. capricornutum* 16 times at Lone Tree Creek @ Jack Tone Rd since the May 2008 toxicity, including monthly sampling that occurred in 2008 (June through September) as part of normal irrigation Monitoring. None of the samples were toxic to *S. capricornutum*, including 12 samples collected in months of past exceedances (two collected in January, two in February, two in March, three in April and three in May). The end of two consecutive years of monitoring during months of past exceedances was March 2011.

***Hyalella azteca* sediment toxicity**

H. azteca is classified as a high priority constituent. Toxicity to *H. azteca* has occurred twice at Lone Tree Creek @ Jack Tone Rd. The first toxic sample was collected in May 2005 and had 94% growth compared to the control. The second toxic sample was collected in April 2006, with 80% growth compared to the control. Both samples were not considered ecologically significant as their percent survival compared to the control was more than 80%.

Starting in 2007, monitoring for sediment toxicity took place twice a year, once during a storm season (between March 1 and April 30) and once during the irrigation season (between August 15 and October 15). Since the April 2006 toxicity, the Coalition has monitored for *H. azteca* eight times and none of the samples were toxic to *H. azteca* (three samples collected in March, three in August and two in September). Since the most recent toxicity in April 2006, there have been two consecutive years of monitoring with no *H. azteca* toxicity and the end of two consecutive years of monitoring during months of past exceedances was August 2008.

Outreach

The Lone Tree Creek @ Jack Tone Rd subwatershed is one of the first priority sites to receive a focused, detailed approach to addressing its management plan constituents. The Coalition's strategy for the Lone Tree Creek subwatershed has been to target a large portion of the growers who are applying products containing or related to the priority constituents. Focused outreach has been completed in this subwatershed. The Coalition conducted individual meetings with 43 members with the greatest likelihood of contributing to exceedances of high priority constituents within the Lone Tree Creek @ Jack Tone Rd site subwatershed. The focus of the meetings were providing information about implementing management practices that would improve the water quality in Lone Tree Creek and discuss other water quality concerns including copper, diazinon, diuron, and toxicity to *S. capricornutum* and *H. azteca*.

Results of surveys completed at outreach meetings in 2008 and 2009 as well as follow ups conducted in 2010 and 2011 indicate that roughly one third of irrigated acres owned by targeted members have fewer applications of pesticides of concern and have also taken measures to reduce runoff to surface waters. This is reflected in the improved water quality results for copper, diazinon, diuron and the lack of toxicity to *S. capricornutum* and *H. azteca*.

The Coalition continues to provide outreach to all members within the Lone Tree Creek @ Jack Tone Rd site subwatershed. Through grower notifications and meetings, members continue to be informed of water quality results and management practice tracking and implementation actions. In addition, this subwatershed remains a high priority subwatershed for other constituents of concern. Through continued outreach the Coalition will keep growers informed about the status of water quality, outreach efforts are anticipated to help prevent the reoccurrence of copper, diazinon, diuron, SC, *S. capricornutum* and *H. azteca* toxicity exceedances.

Future Monitoring

Lone Tree Creek @ Jack Tone Rd is scheduled for Assessment Monitoring in 2026 under the current MRPP. However, MPM for all other high priority constituents under current management plan at Lone Tree Creek @ Jack Tone Rd will continue to be monitored during months of previous exceedances.

Summary: Justification to Remove Constituents from Lone Tree Creek @ Jack Tone Rd Management Plan

The Coalition addressed the management plan constituents within the Lone Tree Creek @ Jack Tone Rd subwatershed with a focused, detailed approach for sourcing past exceedances and has conducted individual outreach with targeted growers. The result of these efforts is the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality impairments. The results of MPM demonstrate two consecutive years of no exceedances of the WQTLs for copper, diazinon, diuron, SC, *S. capricornutum* and *H. azteca* toxicity. Therefore the Coalition requests that copper, diazinon, diuron, SC, *S. capricornutum* and *H. azteca* toxicity be removed from the Lone Tree Creek @ Jack Tone Rd management plan and MPM schedule.

The Coalition believes its general and focused outreach within the Lone Tree Creek @ Jack Tone Rd subwatershed will continue to make growers aware of water quality problems due to discharges from agriculture. In addition, monthly Assessment Monitoring in 2026 will include copper, diazinon, diuron, SC, *S. capricornutum* and *H. azteca* toxicity and will allow the Coalition to continue evaluating water quality at the Lone Tree Creek @ Jack Tone Rd subwatershed with respect to these constituents.

Mokelumne River @ Bruella Rd

Constituents Requested to Remove from Management Plan:

- Copper
- Dissolved Oxygen (DO)

Subwatershed Overview and Monitoring History

The site is the Core Monitoring location in Zone 1 under the current MRPP. Monitoring at Mokelumne River @ Bruella Rd began in August 2004 during the first season of Coalition monitoring and has occurred continuously through 2011. Core Monitoring was initiated in the fall of 2008 and continued through 2010. In 2011, Assessment Monitoring took place and is scheduled to occur every third year (2014, 2017, 2020). To establish the contribution of sources from upstream of the Mokelumne River fish hatchery, an upstream sampling location (Mokelumne River @ Fish Hatchery) was monitored for one event in September 2005.

The Coalition began conducting general outreach and education in the Mokelumne River @ Bruella Rd site subwatershed in 2007. Mokelumne River @ Bruella Rd site subwatershed is one of the Coalition's third set of high priority subwatersheds (focused outreach 2011-2013). Management Plan Monitoring for high priority constituents at Mokelumne River took place in 2007, 2008, 2010 (Year 0) and 2011 (Year 1) during months of past exceedances. In 2011, all constituents were monitored monthly as a part of Assessment Monitoring and high priority constituents were monitored as MPM including copper (June, July and August). Additionally, the Coalition established a list of targeted growers for outreach. The Coalition contacted these growers in 2011 to document current management practices and encourage the implementation of additional management practices to address water quality issues in the Mokelumne River subwatershed.

Constituent Monitoring Results and Sourcing

Copper

Copper is the highest priority constituent in the Mokelumne River subwatershed management plan. Copper exceeded the hardness based WQTL three times during 2007 (June, July and August) and was subsequently added to the Mokelumne River management plan. In the Basin Plan, the 303d list includes Mokelumne River for copper and resource extraction is listed as the potential source for copper.

Since the most recent copper exceedance in 2007, the Mokelumne River @ Bruella Rd monitoring location has been sampled for copper 24 times; two of those samples were collected during storm events. Normal irrigation monitoring and MPM occurred for copper during 2008 (June through August). Copper is not a Core Monitoring constituent and was not sampled in 2009 during the Core Monitoring events at the site; however, copper was monitored as a part of Year 0 MPM at Mokelumne River @ Bruella Rd during 2010 (June through August). Copper was sampled monthly in 2011 as part of Assessment Monitoring at Mokelumne River. There were no exceedances of copper in any of the samples collected from Mokelumne River @ Bruella Rd in 2008, 2010 or 2011 (results through October

2011 monitoring events). The PUR data indicate that between 2005 and 2010 there was a general decreasing trend in copper applications and acres treated in the Mokelumne River @ Bruella Rd site subwatershed. The largest amount of copper applied in the past was in 2005 (15,920 lbs AI across 4,193 acres) while the lowest amount applied was in 2009 (1970 lbs AI across 907 acres), with copper applications in 2010 still below 2007 applications (6655 lbs AI across 2593 acres). The end of two consecutive years of monitoring during months of past exceedances was August 2011.

Dissolved Oxygen (DO)

Exceedances of the DO WQTL can be caused by various factors (low flow, high levels of biological oxygen demand and/or water temperatures), and determining the exact source(s) of exceedances is impossible. The Regional Board has established a TMDL for DO in waterways to which SJCDWQC drains. However, given the difficulty of sourcing exceedances, DO exceedances are categorized as one of the lowest priority constituents. There have been five exceedances of the WQTL for DO in the Mokelumne River @ Bruella Rd subwatershed and one exceedance of DO at the upstream location of Mokelumne River @ Fish Hatchery.

Dissolved oxygen is measured as a field parameter at each site during every monitoring event (Core Monitoring, Assessment Monitoring and MPM). Therefore, monitoring for DO has occurred at Mokelumne River @ Bruella Rd during each monitoring event and will continue for all sample collection events in the future. There have been no exceedances of DO since September 2009 in a total of 29 events (including three resampling events and two storm events). As of September 2011, there have been two consecutive years of no exceedances.

Outreach

The Coalition initiated general outreach in 2007 and Mokelumne River @ Bruella Rd site subwatershed is one of the third high priority site subwatersheds to receive a focused, detailed approach to addressing its management plan constituents. The Coalition contacts growers with the greatest likelihood of contributing to exceedances of high priority constituents. In 2011, individual meetings with 9 targeted growers were conducted in the Mokelumne River subwatershed to review each grower's operation, document currently implemented management practices and discuss water quality concerns as well as discuss water quality concerns, including copper and DO. The Coalition encourages growers to evaluate their farming operations to avoid issues with off-site movement of pesticides and certain management practices are recommended if they could be effective in reducing agricultural discharges.

Based on survey results, targeted growers in the Mokelumne River subwatershed have implemented practices to reduce the use of copper and the amount of runoff water volume. The Coalition believes these implemented management practices have improved water quality as reflected by the absence of exceedances of the WQTLs for copper.

The Coalition engaged in grower outreach and education to address the Mokelumne River management plan's highest priority constituents. Grower meetings with targeted members occurred during the winter of 2011 and follow up will occur during the winter of 2012 to determine if additional

management practices were implemented in 2011 and if any are planned to be implemented in the 2012 irrigation season. The Coalition continues to provide general outreach to all members within the Mokelumne River @ Bruella Rd site subwatershed. In addition, this subwatershed remains a high priority subwatershed for other constituents of concern. Management Plan Monitoring and focused outreach will continue with growers who have the greatest likelihood of contributing to exceedances. Through continual general and focused outreach the Coalition will continue to inform growers of water quality impairments and will prevent a reoccurrence of copper exceedances.

Future Monitoring

In 2012, Mokelumne River @ Bruella Rd is scheduled for Core Monitoring and MPM for copper and water column toxicity to *C. dubia* and *S. capricornutum* during months of past exceedances. Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013 to assess the effect of outreach on water quality. Mokelumne River @ Bruella Rd returns to Assessment Monitoring every third year under the 2008 MRPP, the next year being 2014.

Summary: Justification to Remove Constituents from Mokelumne River @ Bruella Rd Management Plan

The Coalition met with growers in the Mokelumne River subwatershed and addressed management plan constituents within the subwatershed with a focused, detailed approach for sourcing past exceedances. The outcome of these efforts has been education of growers and the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality problems. The results of MPM indicate two consecutive years of no exceedances of the WQTLs for copper and DO. Therefore, the Coalition requests that copper and DO be removed from the Mokelumne River @ Bruella Rd management plan and MPM schedule. Dissolved oxygen will continue to be monitored at all future monitoring events.

Terminous Tract Drain @ Hwy 12

Constituents Requested to Remove from Management Plan:

- *Pimephales promelas* toxicity
- *Selenastrum capricornutum* toxicity

Subwatershed Overview and Monitoring History

The Terminous Tract Drain @ Hwy 12 site subwatershed is the Core Monitoring location in Zone 3. Monitoring was initiated at the Terminous Tract Drain @ Hwy 12 site subwatershed in the storm season of 2005 and has occurred continuously through 2011. Two additional sites within the Terminous Tract Drain subwatershed (Delta Drain-Terminous Tract off Glasscock Rd and Delta Drain-Terminous Tract off Guard Rd) were sampled during the storm and irrigation events of 2005 through 2006, beginning in February 2005 and continuing through April of 2006. The Coalition determined in 2006 that the downstream monitoring location at Terminous Tract Drain @ Hwy 12 was representative of all of the irrigation drainage on Terminous Tract; consequently, monitoring at the two upstream locations was no longer necessary. As specified in the current 2008 MRPP, Core Monitoring at Terminous Tract Drain @ Hwy 12 took place in the fall of 2008 and continued through 2009 (January through December) as well as 2011 (January through December). Assessment Monitoring occurred at Terminous Tract Drain @ Hwy 12 during 2010.

The Coalition began conducting outreach and education in the Terminous Tract Drain @ Hwy 12 subwatershed in 2007. In addition, the Terminous Tract Drain @ Hwy 12 site subwatershed is one of the Coalition's third set of high priority management plan subwatersheds (focused outreach 2011-2013). The Coalition established a list of growers with the greatest likelihood of contributing to the water quality impairments and contacted these growers in the winter of 2011 to document current management practices and encourage the implementation of additional management practices. The Coalition plans to follow up with targeted growers in early 2012 to determine which additional management practices were implemented. Also, MPM was scheduled for Terminous Tract @ Hwy 12 when the site entered Year 0 of high priority management plan in 2010; however, Assessment Monitoring was scheduled for the site in 2010 therefore all constituents were monitored monthly at that time. Management Plan Monitoring for high priority constituents occurred in 2011 during months of past exceedances and will continue through 2013.

Constituent Monitoring Results and Sourcing

***Pimephales promelas* water column toxicity**

The Coalition has categorized toxicity to *P. promelas* as one of the lowest priority constituents. Toxicity to *P. promelas* has occurred twice in the Terminous Tract Drain subwatershed. Samples collected in September 2005 from both Terminous Tract Drain @ Hwy 12 (88% compared to the control) and Delta Drain-Terminous Tract off Glasscock Rd (90% compared to the control) were both determined to be toxic to *P. promelas*. However, although both samples were statistically different from the control, there was less than a 20% reduction in survival compared to the control and therefore not considered

ecologically significant. In addition, the resamples a week later did not indicate persistent toxicity in the waterway.

Since the toxicities in September 2005, there has been more than two consecutive years of monitoring with no *P. promelas* toxicity. The Coalition monitored for *P. promelas* at Terminous Tract Drain @ Hwy 12 during 34 events since September 2005, including irrigation and storm monitoring under the 2006 MRPP in 2006 through 2008 and Assessment Monitoring under the current 2008 MRPP in 2010. The month of September has been sampled four times for *P. promelas* toxicity with no instances of toxicity. The end of two consecutive years of monitoring in months of past exceedances was September 2007.

***Selenastrum capricornutum* water column toxicity**

The Coalition has categorized toxicity to *S. capricornutum* as one of the lowest priority problems. Toxicity to *S. capricornutum* has occurred four times in the Terminous Tract Drain @ Hwy 12 site subwatershed 2005 (February) and 2008 (January, April and May) and once in the Delta Drain-Terminous Tract off Guard Rd site subwatershed in 2006 (February). Of the samples that required TIEs, the February 2005 (19% growth compared to the control), February 2006 (14% growth compared to the control), and May 2008 (50% growth compared to the control) samples indicated cationic chemical(s) and/or non-polar organic(s) were the cause of toxicity. The January 2008 (8% growth compared to the control) sample lost all toxicity in the TIE. A TIE was not required on the April 2008 sample. None of the toxicities were persistent in their respective resamples.

Since the most recent toxicity in May 2008, there has been two consecutive years of monitoring with no *S. capricornutum* water column toxicity. The Coalition has monitored for *S. capricornutum* at Terminous Tract Drain @ Hwy 12 during 20 events since May 2008, including irrigation monitoring under the 2006 MRPP, Assessment Monitoring under the 2008 current MRPP, as well as MPM during months of past exceedances. Since May 2008 during the months of past toxicity, *S. capricornutum* water column toxicity samples have been collected a total of 9 times (including one resampling event), twice during the months of January, February, and April and three times during May (including the one resample event). The end of two consecutive years of monitoring in months of past exceedances was May 2011.

Outreach

The Coalition initiated outreach in 2007 and has since taken several actions to address water quality impairments in the Terminous Tract Drain subwatershed, including grower notification, management practice outreach and education, and management practice tracking and implementation. Through Coalition mailings and meetings/workshops, growers have been made aware of downstream water and sediment quality issues as well as the importance of implementing various management practices on their farm operations. The Coalition continues outreach and education in the subwatershed to keep growers informed of emerging water quality concerns and relevant regulations, opportunities for management practice implementation funding, and results of special studies such as management practice.

In addition, Terminous Tract Drain @ Hwy 12 site subwatershed is one of the subwatersheds in the third set of high priority site subwatersheds to receive a focused, detailed approach to addressing its management plan constituents. The Coalition's strategy for outreach is to contact growers with the greatest likelihood of contributing to exceedances of high priority constituents or constituents that could contribute to toxicity. The Coalition conducted individual meetings with four targeted growers in the winter of 2011 to review each grower's operation and document currently implemented management practices as well as discuss water quality concerns, including *P. promelas* and *S. capricornutum* toxicity. The Coalition encourages growers to evaluate their farming operations in order to avoid off-site movement of pesticides. The Coalition also recommends implementation of new management practices when it appears that they could be effective in further reducing off-site movement of agricultural discharges. Follow up during 2012 will take place with the four targeted growers to assess if recommended and/or new practices have been implemented.

The Coalition believes that outreach and education that has occurred in the Terminous Tract Drain @ Hwy 12 site subwatershed since 2007 has led to improved water quality with respect to *P. promelas* and *S. capricornutum* water column toxicity. This is reflected in the water quality results where no exceedances of constituents known to be toxic to either species have ever occurred (e.g. ammonia can be toxic to *P. promelas* and herbicides and/or copper can be toxic to *S. capricornutum*), no toxicity occurred during 2010 Assessment Monitoring and MPM for *S. capricornutum* toxicity during 2011 (January, February, April and May) did not result in toxicity.

The Coalition will continue to provide outreach to all members within the Terminous Tract Drain @ Hwy 12 site subwatershed. In addition, this subwatershed remains a high priority subwatershed through 2013 for other constituents of concern and focused outreach will continue with growers with the greatest likelihood of contributing to exceedances. Through continued outreach the Coalition will keep growers aware of water quality problems and will prevent the reoccurrence of *P. promelas* and/or *S. capricornutum* water column toxicity.

Future Monitoring

In 2012, Core Monitoring is scheduled Terminous Tract Drain @ Hwy 12. Terminous Tract Drain @ Hwy 12 returns to Assessment Monitoring every third year, the next year being 2013. Management Plan Monitoring will continue to take place for high priority constituents during months of past exceedances through 2013.

Summary: Justification to Remove Constituents from Terminous Tract Drain @ Hwy 12 Management Plan

Growers within the Terminous Tract Drain @ Hwy 12 site subwatershed are aware of water quality exceedances regarding *P. promelas* and *S. capricornutum* toxicity and have taken actions to address these problems. Monitoring in Terminous Tract Drain indicated in two consecutive years without *P. promelas* toxicity and no *S. capricornutum* water column toxicity. Therefore the Coalition requests that both *P. promelas* and *S. capricornutum* water column toxicity testing be removed from the Terminous Tract Drain @ Hwy 12 management plan and MPM schedule.

The Terminous Tract Drain subwatershed will begin its second year of focused outreach to address high priority constituents within its management plan in 2012. Actions will include follow up contacts with targeted growers and continued MPM. The Coalition believes its continued contact with growers who have the greatest potential to impact water quality will prevent future toxicities to *P. promelas* and *S. capricornutum*.

In addition, the Coalition believes its outreach within the Terminous Tract Drain subwatershed will continue to keep growers aware of water quality problems due to agriculture. Monthly Assessment Monitoring in 2013 will include *P. promelas* and *S. capricornutum* water column toxicity monitoring and will allow the Coalition to continue evaluating water quality at the Terminous Tract Drain @ Hwy 12 site subwatershed with respect to these constituents.

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd

Constituents Requested to Remove from Management Plan:

- Diuron
- Simazine
- *Ceriodaphnia dubia* toxicity
- *Selenastrum capricornutum* toxicity

Subwatershed Overview and Monitoring History

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd (also known as Temple Creek) is an Assessment Monitoring location under the current 2008 MRPP (Zone 2). Monitoring began at the site during the irrigation season of 2006 and has continued through 2011. The site is scheduled for Assessment Monitoring in 2017 through 2018; MPM has occurred since the start of the 2008 MRPP. Management Plan Monitoring first began at Unnamed Drain to Lone Tree Creek during the 2007 irrigation season and has continued through 2011. Upstream monitoring took place for chlorpyrifos at Unnamed Drain to Lone Tree Creek @ Wagner Rd in 2008 during the irrigation season (July and September only).

The Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed is one of the Coalition's first set of high priority management plan subwatersheds (focused outreach 2008-2010). The Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed management plan was established in 2007 and MPM in 2007 (July and September) occurred along with Normal monitoring. MPM for high priority constituents occurred every year thereafter through 2011 during months of past exceedances. In addition, the Coalition established a list of growers with the greatest likelihood of contributing to the water quality problems (growers farming parcels with the potential for direct drainage to the creek and growers applying high priority constituents within the last two years). The Coalition contacted these targeted growers in 2008 and 2009 to document current management practices and encourage the implementation of additional management practices designed to address water quality problems. The Coalition followed up with targeted growers in 2009 and 2010 to determine which additional management practices were implemented.

Constituent Monitoring Results and Sourcing

Diuron

Diuron is an herbicide commonly used during the winter months in the San Joaquin Valley. Exceedances of the diuron WQTL have occurred in samples collected from Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed three times, twice during February 2007 in separate storm events and again during a storm event in January 2008.

Since the most recent diuron exceedance in January 2008, Unnamed Drain to Lone Tree Creek has been sampled 10 times for diuron, including two events each in the months of January and February, and there have been no exceedances of the herbicide. Sampling included irrigation monitoring in 2008 and MPM during January and February in 2010 and 2011 (January 2010 was a storm event). The PUR data indicate that since 2007 there has been a marked decrease in diuron applications and acres treated in

the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed. The largest amount of diuron applied in the past was in 2006 (2,183 lbs AI across 2,028 acres) while the lowest amount applied was in 2009 (414 lbs AI across 331 acres) with applications in 2010 still indicating a decreasing trend from 2007 (889 lbs AI across 986 acres). The end of two consecutive years of monitoring in months of past exceedances was February 2011.

Simazine

Simazine is another herbicide that is also used during the dormant season. Two exceedances of simazine have occurred in samples collected from Unnamed Drain to Lone Tree Creek @ Jack Tone Rd; both were from storm events in February 2007 and January 2008

Since the most recent simazine exceedance in 2008, the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd monitoring location has been sampled for simazine 10 times, including two events each in the months of January and February, and there have been no exceedances of the herbicide. Sampling included irrigation monitoring in 2008 and MPM during January and February in 2010 and 2011 (January 2010 was a storm event). The PUR data indicate that pounds of simazine applied in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed in 2010 were at the lowest level since 2005. Applications in 2006 (2,557 lbs AI across 2,549 acres) compared to applications in 2010 (1,782 lbs AI across 2,195 acres) indicate a significant decrease in simazine use and acres treated in the subwatershed. The end of two consecutive years of monitoring in months of past exceedances was February 2011.

***Ceriodaphnia dubia* water column toxicity**

C. dubia toxicity is indicative of organophosphate pesticides, such as chlorpyrifos and diazinon, and there have been four instances of *C. dubia* toxicity in the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed. *C. dubia* toxicity occurred at Unnamed Drain to Lone Tree Creek in 2007 (February, 0% survival compared to the control), 2008 (January and September, 0% compared to the control for both months) and 2009 (September, 30% compared to the control). Unspecified non-polar organics were determined to be the cause of the toxicity in 2007, organophosphate pesticides were the determined cause of both 2008 toxic samples; of the three, only the September 2008 resample resulted in persistent toxicity. The 2009 sample lost all toxicity in the TIE and the cause was unable to be determined.

***Selenastrum capricornutum* water column toxicity**

Water column toxicity to *S. capricornutum* is indicative of herbicides, algaecides and/or fungicides in surface waterways. *S. capricornutum* toxicity has occurred three times at the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed (two separate storm events in February 2007 and an irrigation event in May 2008). Both 2007 February toxicities (53% and 5% growth compared to control) were persistent in their respective resamples; only the latter of the two storm events toxicities required a TIE, and non-polar organics and/or metals were determined to be the cause of toxicity. In addition, simazine exceeded its WQTL in the first of the two storm events while diuron exceeded its WQTL in samples collected from both of the February 2007 storm events. The May 2008 toxicity (34% growth

compared to the control) coincided with a copper exceedance in sample collected from the same event, but the sample lost all toxicity during its TIE and was not persistent in the resample.

There have been more than two years of consecutive monitoring with no *S. capricornutum* toxicity since the most recent instance in May 2008. The Coalition has monitored Unnamed Drain to Lone Tree Creek eleven times for *S. capricornutum* toxicity since the May 2008 toxicity, including May 2009 and February, March and May of 2010 and 2011. The Coalition believes it has eliminated water quality concerns relating to diuron and simazine exceedances (see above), and recent copper exceedances have not coincided with *S. capricornutum* toxicity (copper exceeded the WQTL in samples collected during May 2011, but there was no toxicity to *S. capricornutum*). The end of two consecutive years of monitoring in months of past exceedances was May 2011.

Outreach

The Unnamed Drain to Lone Tree Creek @ Jack Tone Rd site subwatershed is one of the first high priority site subwatersheds to receive a focused, detailed approach to addressing its management plan constituents. The Coalition's strategy for outreach is to contact growers with the greatest likelihood of contributing to exceedances. The Coalition conducted individual meetings with 34 targeted growers in 2008 and 2009 to review each grower's operation and document current management practices as well as discuss water quality problems. The Coalition encourages growers to evaluate their farming operations to avoid off-site movement of pesticides and recommends implementation of new management practices when it appears that they could be effective in further reducing off-site movement of agricultural discharges. Eighteen targeted growers were followed up with the next year to assess if recommended and/or new practices were implemented.

As a result of the Coalition's Management Practice strategy, growers in the Coalition eliminated water quality impairments due to diuron, simazine, *C. dubia* and *S. capricornutum* water column toxicity in the Unnamed Drain to Lone Tree Creek site subwatershed.

The Coalition continues to provide outreach to all members within the Unnamed Drain to Lone Tree Creek site subwatershed. Through notifications and grower meetings, members continue to be made aware of water quality results, relevant management practices that address water quality problems, availability of funding for management practice implementation, results special studies of management practice efficacy, and management practice tracking and implementation actions. In addition, this subwatershed remains a high priority subwatershed for other constituents of concern and focused outreach continues with growers with the greatest likelihood of contributing to those exceedances.

Future Monitoring

Unnamed Drain to Lone Tree Creek @ Jack Tone Rd is scheduled for Assessment Monitoring in 2030 under the 2008 MRPP. However, MPM for other high priority constituents under the current management plan at Unnamed Drain to Lone Tree Creek @ Jack Tone Rd will continue during months of previous exceedances.

Summary: Justification to Remove Constituents from Unnamed Drain to Lone Tree Creek @ Jack Tone Rd Management Plan

The Coalition addressed the management plan constituents within the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd subwatershed with a focused, detailed approach for sourcing past exceedances and conducting individual outreach with targeted growers. The result is the implementation of new management practices as well as increased grower awareness of the role of agriculture in causing water quality problems. The results of MPM indicate two consecutive years of no exceedances of the WQTLs for diuron, simazine, *C. dubia* toxicity and *S. capricornutum* toxicity. Therefore the Coalition requests that diuron, simazine, *C. dubia* toxicity and *S. capricornutum* toxicity be removed from the Unnamed Drain to Lone Tree Creek @ Jack Tone Rd management plan and MPM schedule.

The Coalition believes its general and focused outreach within the Unnamed Drain to Lone Tree Creek subwatershed will continue to keep growers mindful of water quality impairments due to agriculture. In addition, the Coalition will continue MPM at the site for other high priority constituents and is scheduled to conduct monthly Assessment Monitoring for all constituents in 2030.