

**Central Valley Regional Water Quality Control Board**

25 March 2016

Mr. Parry Klassen  
Executive Director  
East San Joaquin Water Quality Coalition  
1201 L Street  
Modesto, CA 95354

Dr. Michael Johnson  
Technical Program Manager  
East San Joaquin Water Quality Coalition  
1480 Drew Ave. Suite 130  
Davis, CA 95618

**APPROVAL OF MANAGEMENT PLAN COMPLETION – EAST SAN JOAQUIN WATER QUALITY COALITION**

Thank you for submitting the 21 September 2015 request to remove specific constituents from select East San Joaquin Water Quality Coalition (Coalition) site subwatershed management plans. The request proposes to remove 29 site/constituent pairs from active management plan status and from the management plan monitoring schedule.

The Coalition has implemented management plans according to requirements in the Waste Discharge Requirements General Order R5-2012-0116-R3 for Growers within the Eastern San Joaquin River Watershed that are Members of a Third-party Group (Order). The Coalition’s approved Surface Water Management Plan (4 November 2015) has been implemented as a part of the Order. The conditions for requesting completion of a Management Plan outlined in the Order apply (Attachment B, Appendix MRP-1, Section III, pages 8 and 9).

Based on the information provided in the request letter and in the enclosed staff review, I approve the completion of management plans for the following eighteen site/constituent pairs.

Table 1. Summary of site/constituent pairs approved for management plan completion.

Site Subwatershed	Copper	Lead	Chlorpyrifos	Diuron	Ceriodaphnia	Selenastrum	Hyalella	Pimephales	pH	Conductivity
Black Rascal @ Yosemite Rd		✓	✓		✓					
Deadman Creek @ Gurr Rd						✓				
Dry Creek @ Rd 18		✓								
Dry Creek @ Wellsford Rd							✓			
Duck Slough @ Gurr Rd		✓								
Highline Canal @ Hwy 99		✓								
Highline Canal @ Lombardy Rd		✓								
Hilmar Drain @ Central Ave	✓			✓					✓	

Site Subwatershed	Copper	Lead	Chlorpyrifos	Diuron	Ceriodaphnia	Selenastrum	Hyalella	Pimephales	pH	Conductivity
Howard Lateral @ Hwy 140			✓							
Mootz Drain downstream of Langworth Pond			✓							
Miles Creek @ Reilly Rd		✓	✓		✓					
Prairie Flower Drain @ Crows Landing Rd								✓		

Implementation of management plans must continue for pH at Bear Creek @ Kibby Rd, Deadman Creek @ Hwy 59 and Howard Lateral @ Hwy 140 because the monitoring data do not support completion of the management plans. In addition, monitoring for dissolved copper at Miles Creek @ Reilly Rd and pH at Dry Creek @ Wellsford Rd must continue because of additional exceedances reported in 2016. Also, additional analytical results that show no exceedances are required for copper and chlorpyrifos at Berenda Slough @ Ave 18 ½; chlorpyrifos and *Selenastrum capricornutum* at Livingston Drain @ Robin Avenue; chlorpyrifos at Deadman Creek @ Hwy 59; and specific conductivity at Mustang Creek @ East Ave before management plan completion can be approved because three or more years of monitoring data that shows no exceedances have not been obtained. However, if dry monitoring site conditions continue during years of normal rainfall, the Coalition should submit evidence that site conditions have changed unrelated to drought.

If you have any questions or comments regarding this letter, or need further information, please contact Yared Kebede at [yared.kebede@waterboards.ca.gov](mailto:yared.kebede@waterboards.ca.gov) or by phone at 916-464-4828.

Sincerely,

*Original signed by*

Pamela C. Creedon  
Executive Officer

Enclosures: Staff Review of Request to Remove Constituents from Management Plan – East San Joaquin Water Quality Coalition

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## Central Valley Regional Water Quality Control Board

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

**FROM:** Yared Kebede  
Environmental Scientist  
Monitoring and Implementation Unit  
Irrigated Lands Regulatory Program

**DATE:** 21 March 2016

**SUBJECT:** REQUEST TO REMOVE CONSTITUENTS FROM MANAGEMENT PLAN –  
East SAN JOAQUIN WATER QUALITY COALITION

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a request from the East San Joaquin Water Quality Coalition (Coalition) on 21 September 2015 to remove a total of 29 site/constituent pairs in 17 site subwatersheds from the management plan monitoring schedule.

Based on the Waste Discharge Requirements for Growers within the Eastern San Joaquin River Watershed Order R5-2012-0116-R3 (Order) at least three years of compliance with water quality trigger limits during the times of year when previous exceedances occurred, documented education and outreach, and implementation of management practices to address the water quality problems must be demonstrated before a management plan can be petitioned for completion (Section III of the MRP-1).

Staff reviewed the Coalition's request and evaluated whether completion of management plans for petitioned site/constituent pairs is justified. Staff's recommendations fall into one of two categories: (I) there is sufficient information to justify the removal of site/constituent pairs from the management plan or (II) the completion of management plans cannot be recommended because additional monitoring data is required to demonstrate that the water quality problem is no longer occurring.

### **I. Management plan no longer required**

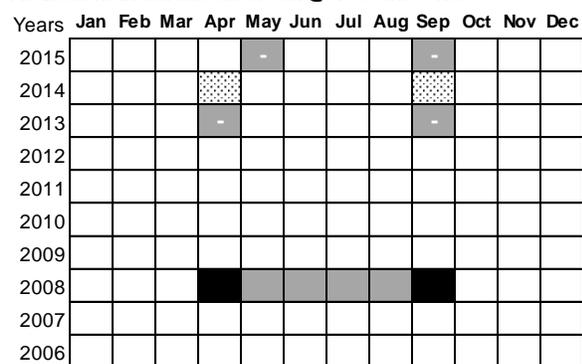
Staff recommends that management plans are no longer required for eighteen site/constituent pairs since there has been sufficient monitoring to demonstrate that water quality problems are no longer occurring. Since the most recent exceedance, education and outreach, implemented management practices in each subwatershed, and demonstration of the effectiveness of the management practices justify the completion of management plans at these sites.

Further details about each category of site/constituent pairs petitioned for the completion of management plans are provided below:

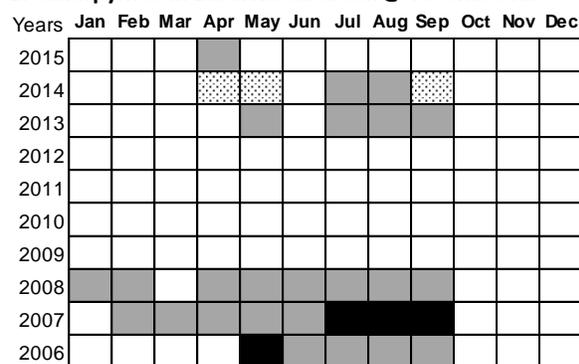
KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | [www.waterboards.ca.gov/centralvalley](http://www.waterboards.ca.gov/centralvalley)

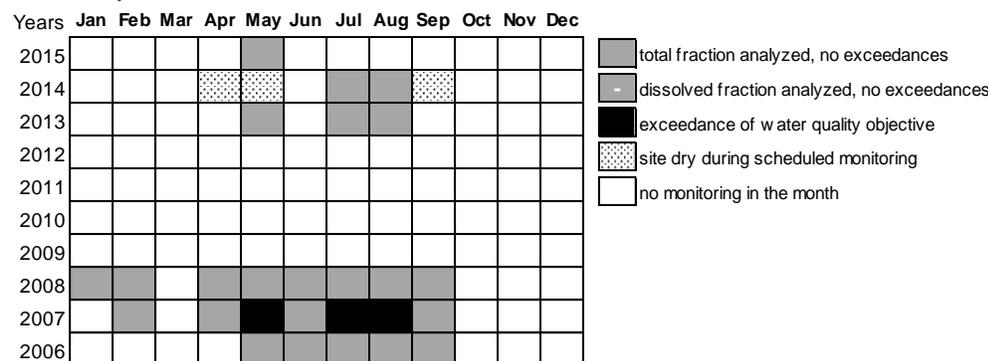
**A. Lead in Black Rascal Creek @ Yosemite Rd**



**B. Chlorpyrifos in Black Rascal Creek @ Yosemite Rd**



**C. Ceriodaphnia dubia in Black Rascal Creek @ Yosemite Rd**



The lead management plan in Black Rascal @ Yosemite Rd was due to two exceedances of the hardness based WQTL for total lead in April and September 2008. Since the Coalition started analyzing for dissolved lead, which is representative of the bioavailable fraction, there have been no lead exceedances. Dissolved lead concentrations provide a better representation of whether the beneficial uses of the waterbody are protected. This new information demonstrates that the bioavailable fraction of lead does not exceed criteria in Black Rascal @ Yosemite Rd. Because of this, staff recommends completion of the lead management plan.

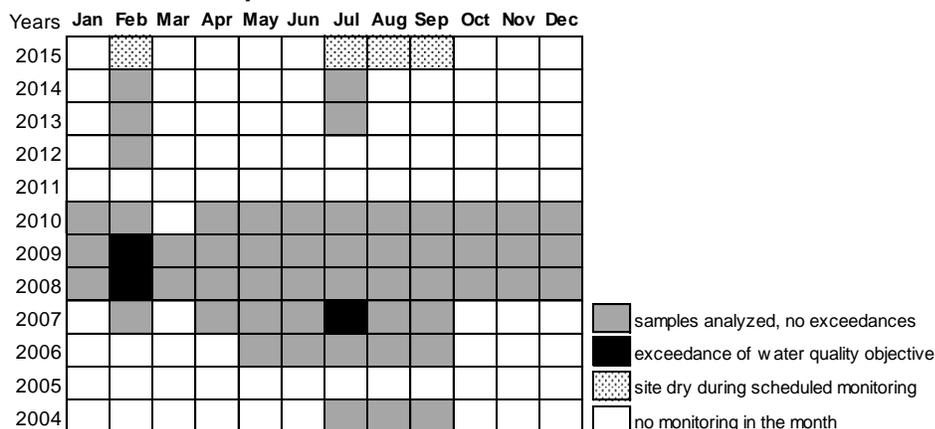
There were four chlorpyrifos exceedances in Black Rascal @ Yosemite Rd in May 2006 and 2007 (July, August and September). Since the last exceedance in September 2007, the Coalition has completed three years of monitoring with no exceedances. In addition, chlorpyrifos has not been applied in the site subwatershed since 2012.

There were five instances of *C. dubia* exceedances in 2007 (once in May, twice in July, and twice in August) in the Black Rascal @ Yosemite Rd subwatershed. The TIE results indicated pyrethroids were the likely cause of the May toxicity (20% survival). The July and August toxicity resulted in complete mortality of *C. dubia*; TIE results implicated organophosphate pesticides. In fact, chlorpyrifos exceedances coincided with *C. dubia* toxicity during both monitoring events.

Focused outreach in Black Rascal @ Yosemite Rd occurred from 2012 to 2014. The Coalition contacted a single targeted grower with the potential for direct drainage, representing 16% of the acreage identified as direct drainage to discuss water quality concerns. According to the survey and follow-up results (2013 MPUR, pages 70-73), the grower has implemented several management practices to manage erosion and sediment: grass row centers, vegetated filter

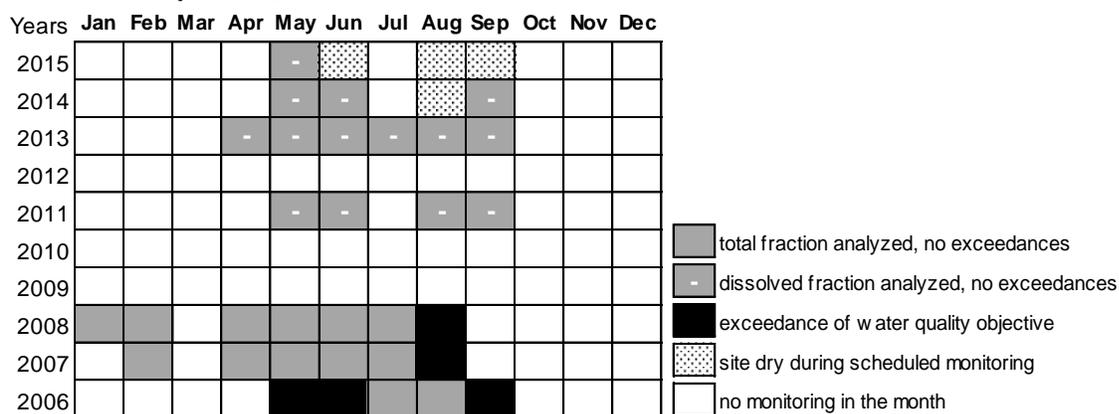
strips around field perimeter, vegetation maintained along ditches; and spray management practices: calibrating prior to each spray application, adjusting spray nozzles to match the canopy profile and shutting outside nozzles. Monitoring results, pesticides use and focused outreach efforts justify chlorpyrifos and *C. dubia* management plan completion.

**D. *Selenastrum capricornutum* in Deadman Creeek @ Gurr Rd**



There were three instances of *S. capricornutum* toxicity in Deadman Creek @ Gurr Rd in July 2007 (47% growth), February 2008 (47% growth) and February 2009 (7% growth). The TIE results were inconclusive in the July 2007 and February 2008 samples, and high level of ammonia (50 mg/L) was detected in the February 2009 sample. Since the last exceedance in 2009, the Coalition has completed more than three years of monitoring with no toxicity to *S. capricornutum*. As part of focused outreach, the Coalition conducted individual meetings with two targeted growers who farm field/row crops, but did not recommend additional management practices since the targeted growers reported no irrigation drainage and had already implemented several management practices. The summary of implemented management practices is documented in the 2013 MPUR (Pages 74-76).

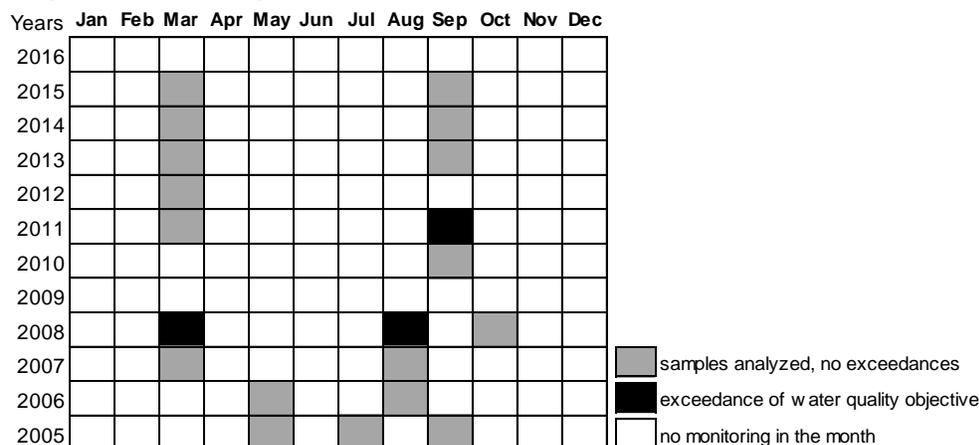
**E. Lead in Dry Creek @ Rd 18**



The lead management plan is based on five exceedances of the hardness based WQTL for lead between 2006 and 2008. As a part of the focused management plan implementation, the Coalition contacted 17 targeted growers in 2011, representing 53% of the acreage identified as direct drainage. The summary of implemented management practices is documented in the 2013 MPUR (Pages 60-62). Monitoring results since the Coalition started analyzing for the

dissolved fraction of lead (bioavailable) indicate more than three years of monitoring with no exceedances.

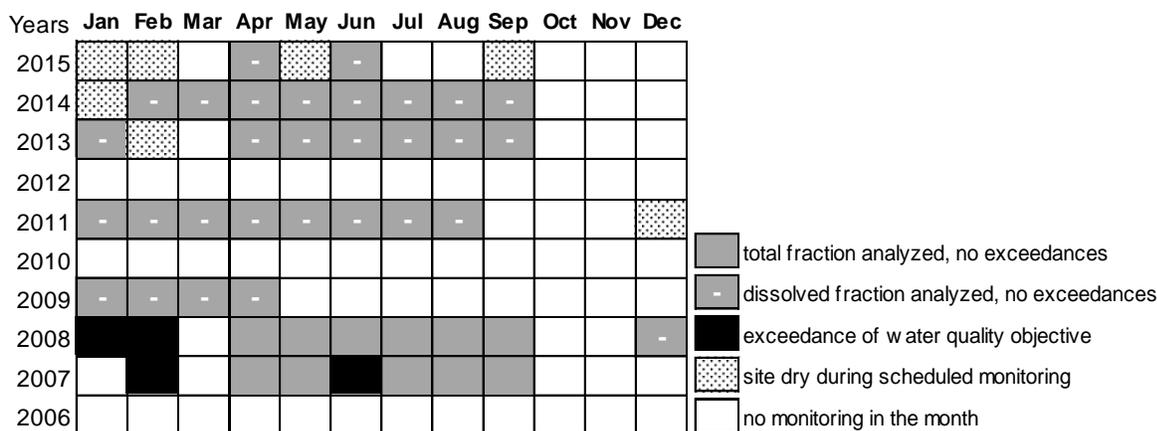
**F. *Hyaella azteca* in Dry Creek @ Wellsford Rd**



There were three exceedances of sediment toxicity in the Dry Creek @ Wellsford Rd subwatershed since the Coalition started monitoring for *H. azteca* in 2005. The PUR data associated with the March exceedance (88% survival) indicated pyrethroids and chlorpyrifos applications in the subwatershed. Dimethoate detection (0.25 µg/L) coincided with the August 2008 exceedance (73% survival). Bifenthrin and chlorpyrifos were detected in sediment samples associated with the September toxicity (76% survival).

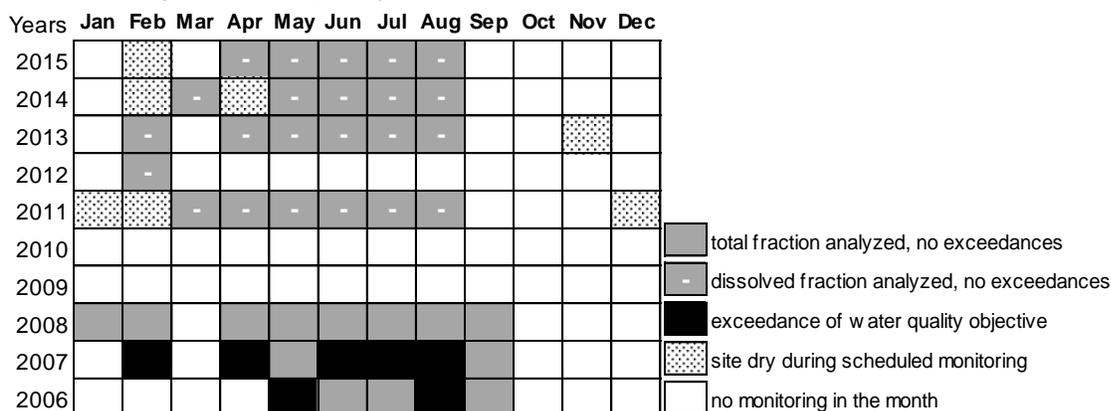
Focused outreach in Dry Creek @ Wellsford Rd occurred from 2008 to 2010. The Coalition contacted 25 targeted growers representing 27% of the total direct drainage acreage within the subwatershed (2011 MPUR, Table 8). According to the survey and follow-up results, targeted growers implemented management practices including shutting off outside nozzles when spraying next to surface water, constructing drainage basins, maintaining filter strips, using tailwater return systems, and using less water during surface irrigation. Targeted growers also implemented management practices that were not specifically recommended by the Coalition. Monitoring results during three consecutive years of monitoring shows the effectiveness of implemented management practices.

**G. Lead in Duck Slough @ Gurr Rd**



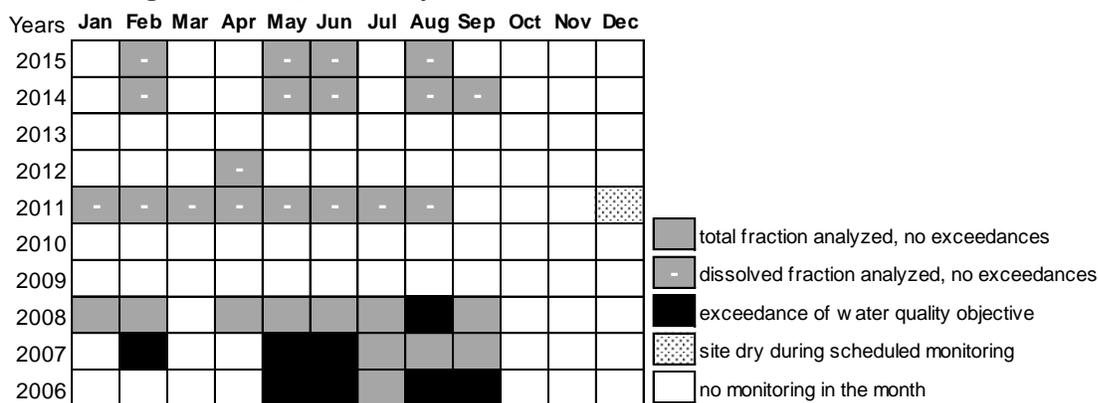
The management plan for lead in Duck Slough @ Gurr Rd is based on four exceedances of the hardness based WQTL for total lead, twice in 2007 (February, June) and in 2008 (January, February). Focused outreach to targeted growers in Duck Slough @ Gurr Rd subwatershed occurred from 2010 to 2012. The Coalition contacted six targeted growers who farm 46% of the total direct drainage area in 2010, and provided information to encourage the retention of water and sediment on the field (tailwater return system and sediment ponds). The summary of implemented management practices is documented in the 2012 MPUR (Pages 92-93). Since the February 2008 exceedance, the Coalition has completed three years of monitoring of the dissolved fraction of lead with no exceedances.

**H. Lead in Highline Canal @ Hwy 99**



Exceedances of the hardness based WQTL for lead occurred at Highline Canal @ Hwy 99 seven times in 2006 and 2007. The Coalition conducted individual meetings with 10 growers representing 33% of the direct drainage in 2009 and 2010. A summary of implemented and recommended management practices is provided in the 2012 MPUR (Pages 95-97). Since the August 2007 exceedances, the Coalition has conducted monitoring for total lead and dissolved lead with no exceedances.

**I. Lead in Highline Canal @ Lombardy Rd**



There have been eight exceedances of the hardness based WQTL for total lead in Highline Canal @ Lombardy Rd. As part of the focused management implementation, the Coalition contacted 20 growers in 2013 representing 46% of the direct drainage within the subwatershed. The summary of implemented management practices is documented in the 2015 Annual Report

(Pages 155-157). Since the August 2008 exceedance, the Coalition has completed more than three years of monitoring for dissolved lead (bioavailable) with no exceedances.

**J. pH in Hilmar Drain @ Central Avenue**

Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015												
2014												
2013												
2012												
2011												
2010												
2009												
2008												
2007												
2006												
2005												

**K. Copper in Hilmar Drain @ Central Avenue**

Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015												
2014												
2013												
2012												
2011												
2010												
2009												
2008												
2007												
2006												
2005												

**L. Diuron in Hilmar Drain @ Central Avenue**

Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015												
2014												
2013												
2012												
2011												
2010												
2009												
2008												
2007												
2006												

-  total fraction analyzed, no exceedances
-  dissolved fraction analyzed, no exceedances
-  exceedance of water quality objective
-  site dry during scheduled monitoring
-  no monitoring in the month

The management plan for pH in Hilmar Drain @ Central Ave is based on exceedances of the upper WQTL for pH in 2006 and 2007. Field parameters in management plan, including pH are only measured during scheduled monitoring events and thus the monitoring events might not always coincide with months when past pH exceedances had occurred. Therefore, staff considered pH measurements in Hilmar Drain @ Central Avenue within the same season and similar field conditions when monitoring was not scheduled during months of past exceedances.

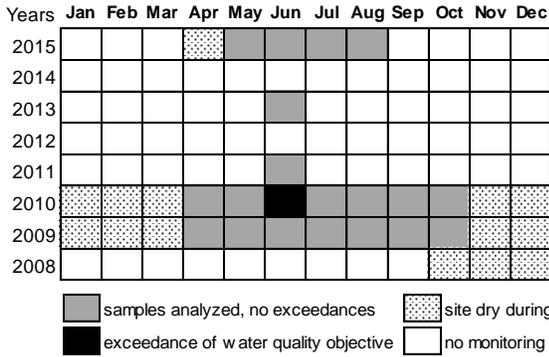
There were two exceedances of the hardness based WQTL for copper in the Hilmar Drain @ Central Ave subwatershed in July 2006 and February 2007; the July exceedance coincided with *S. capricornutum* toxicity. The PUR data associated with the February 2007 exceedance indicated the use of copper in almonds.

There were three exceedances of diuron in Hilmar Drain @ Central Ave in 2007 (April, June) and 2008 (April). According to the request, the April 2007 (3.3 µg/L) and 2008 exceedances (3.43 µg/L) coincided with *S. capricornutum* toxicity. The PUR data indicated the use of diuron that could have caused these exceedances.

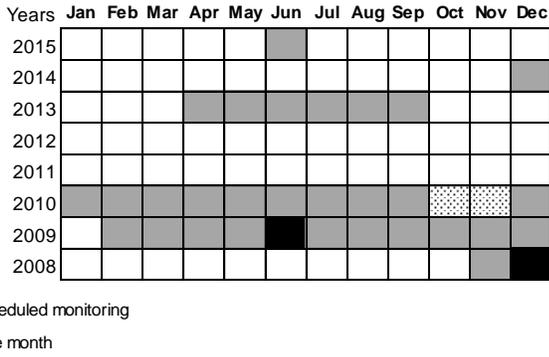
As part of focused management plan implementation from 2012 to 2014, the Coalition contacted three members with the potential for direct drainage, representing 39% of the total direct drainage acreage within the subwatershed. Two of the targeted growers implemented all of the

management practices recommended by the Coalition: using tailwater return systems, improved berms between fields and waterways and installed a device to control timing of pump/drain into waterway. In addition, both growers took additional actions to manage spray drift. The summary of management practices implemented is documented in the 2014 Annual Report (Pages 169-170). Monitoring data, pesticide use and focused outreach efforts justify management plan completion.

**M. Chlorpyrifos in Howard Lateral @ Hwy 140**

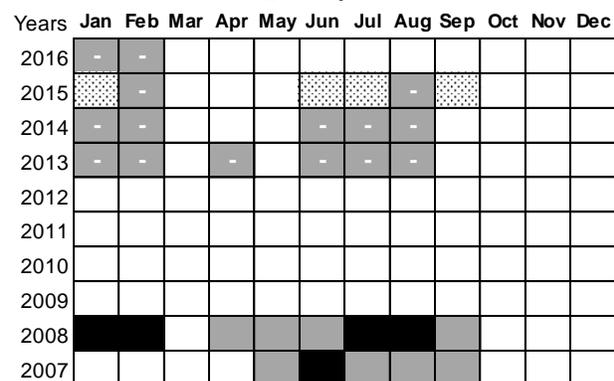


**N. Chlorpyrifos in Mootz Drain downstream of Langworth Pond**

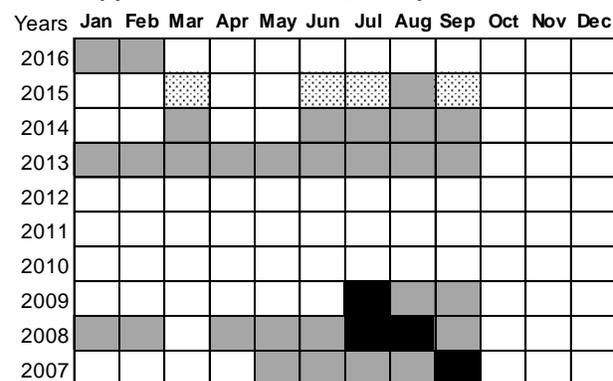


The June 2010 exceedance in Howard Lateral @ Hwy 140 and the December 2008 exceedance in Mootz Drain downstream of Langworth Pond triggered chlorpyrifos management plans in the respective subwatersheds. The Coalition conducted focused outreach in Howard Lateral and Mootz Drain in 2015, and has contacted targeted growers to discuss water quality concerns in the subwatersheds. The Coalition has been conducting general education and outreach in the subwatersheds since 2007, and monitoring results are indicative of the effectiveness of implemented management practices in eliminating chlorpyrifos exceedances. The Coalition submitted supplemental information of currently implemented management practices by targeted growers in Howard Lateral @ Hwy 140 and Mootz Drain downstream of Langworth Pond. The results from the 2014 Farm Evaluation survey indicate that the targeted growers implemented several cultural practices to manage sediment and erosion: berms constructed at low ends of fields to capture runoff and trap sediment, vegetative filter strips and buffers to capture flows, hedgerows/trees used to stabilize soils and trap sediment movement; and spray management practices: avoid surface water when spraying, calibrating prior to each spray application, adjusting spray nozzles to match the canopy profile, shutting off outside nozzles and monitor rain forecasts and wind conditions before spraying. Monitoring results during three consecutive years of monitoring shows the effectiveness of implemented management practices. The Coalition has completed three years of monitoring with no chlorpyrifos exceedances. Therefore, staff recommends completion of both management plans for chlorpyrifos.

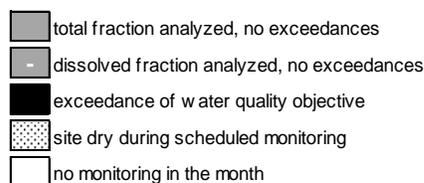
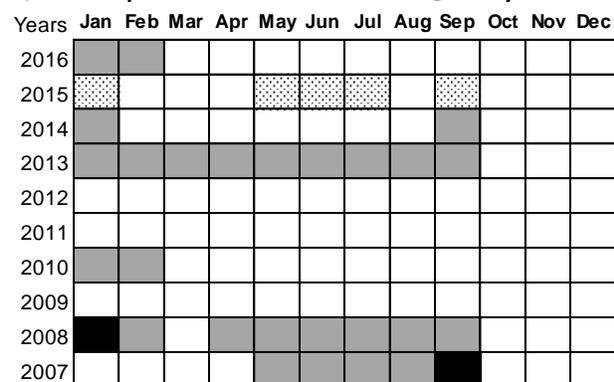
**O. Lead in Miles Creek @ Reilly Rd**



**P. Chlorpyrifos in Miles Creek @ Reilly Rd**



**Q. Ceriodaphnia dubia in Miles Creek @ Reilly Rd**



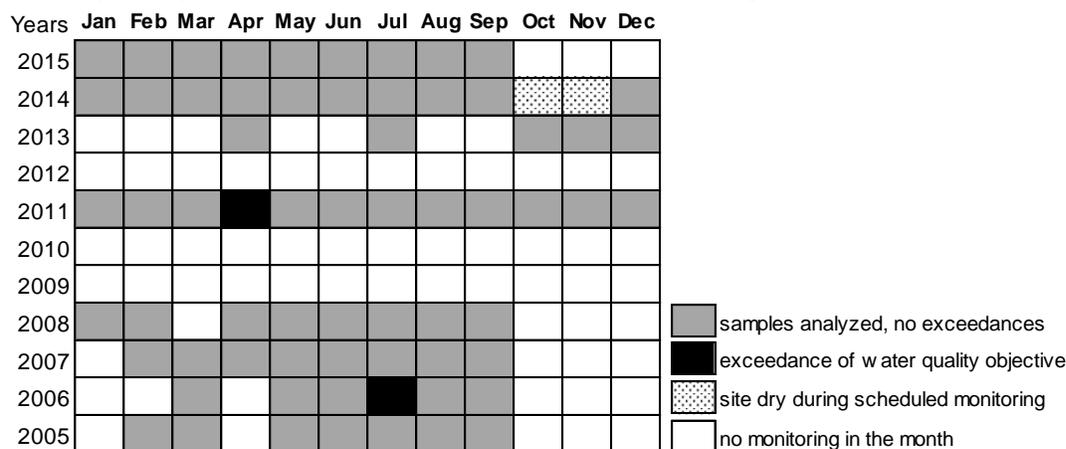
Miles Creek @ Reilly Rd is a fifth priority site subwatershed where focused outreach to targeted growers occurred from 2013 through 2015. The lead management plan is based on five exceedances of the hardness based WQTL for total lead in 2007 (June) and 2008 (January, February, July, and August). Total lead results do not account for the bioavailable fraction (dissolved lead is considered to be the fraction that can affect aquatic life). Since the Coalition started analyzing for dissolved lead which is representative of the bioavailable fraction, there have been no exceedances. This is a better representation of whether the water body is achieving water quality criteria. This new information demonstrates that the bioavailable fraction of lead does not exceed criteria in Miles Creek @ Reilly Rd. Therefore, staff recommends completion of the lead management plan.

There were four instances of chlorpyrifos exceedances in Miles Creek @ Reilly Rd in 2007 (September) and 2008 (July and August), and in 2009 (July). The PUR data indicate that chlorpyrifos use in the Miles Creek @ Reilly Rd site subwatershed has steadily declined since the peak use in 2007 (2320 lbs AI); about 8% of chlorpyrifos used in 2007 was applied in 2014. No chlorpyrifos exceedances have occurred during three years of monitoring during irrigation season.

There were three exceedances of *C. dubia* water column toxicity in the Miles Creek @ Reilly Rd subwatershed in 2007 and 2008 (September 2007, twice in January 2008). Although a TIE was not conducted for the September toxicity (60%), a chlorpyrifos exceedance was detected in the water column sample (0.03 µg/L). Toxicity was persistent in the January 2008 sample (0% survival) and the resample (19% survival). TIE conducted on the resample indicated exceedance levels of methidathion (2.3 µg/L) and copper (15 µg/L).

Since focused outreach began in 2013, the Coalition completed contacts with nine targeted growers representing 18% of the acreage identified as potentially having direct drainage. The Coalition recommended spray drift management practices such as calibrating prior to each spray application, adjusting spray nozzles to match the canopy profile, and shutting off outside nozzles to five targeted growers. The Coalition followed-up with the five targeted growers in 2014, and all the targeted growers have implemented the recommended management practices. A summary of all management practices are provided in the 2015 Annual Reports (Pages 161-163). Monitoring results from three years of monitoring since the most recent exceedances demonstrated the effectiveness of the implemented management practices in the subwatershed.

**R. *Pimephales promelas* in Prairie Flower Drain @ Crows Landing Rd**

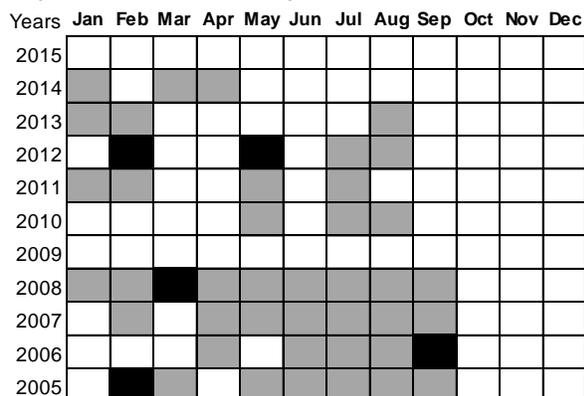


The *P. promelas* management plan at Prairie Flower Drain @ Crows Landing Rd is based on three exceedances in 2006 (twice in July) and 2011 (April). The July 2006 sample resulted in 8% survival (70% survival in the resample). The TIE results indicated high levels of ammonia in the water column (18 mg/L). The April 2011 toxicity resulted in 80% survival and chemistry results indicated high levels of ammonia (12 mg/L) in the water samples. Focused outreach in Prairie Flower Drain @ Crows Landing Rd occurred from 2008 to 2010. The Coalition contacted 11 targeted growers and documented management practices for 24% acreage having potential direct drainage (2011 MPUR, Table 8). The Coalition followed up with targeted growers in 2010 and several growers implemented new management practices recommended by the Coalition, such as reducing the amount of water used in surface irrigation, installing devices to control discharge, use of drainage basins and application of polyacrylamide. Monitoring data, focused outreach and follow-up results justify the *P. promelas* management plan completion.

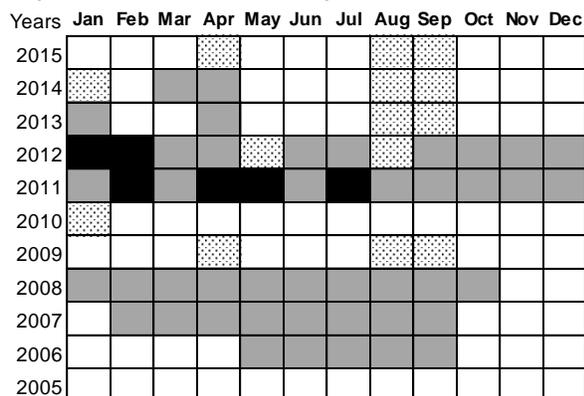
## II. Additional monitoring required

The field parameter, pH, was measured during scheduled monitoring events in Bear Creek @ Kibby Rd, Deadman Creek @ Hwy 59 and Howard Lateral @ Hwy 140. However, the monitoring results have not met at least three years of compliance with receiving water limitations during the times of year when previous exceedances occurred. Staff does not recommend completion of the pH management plans at the three locations at this time. In addition, staff does not recommend completion of the copper management plan at Miles Creek @ Reilly Rd and the pH management plan at Dry Creek @ Wellsford Rd because of additional exceedances (Figures D and E) reported after the Coalition petitioned for completion of the management plans.

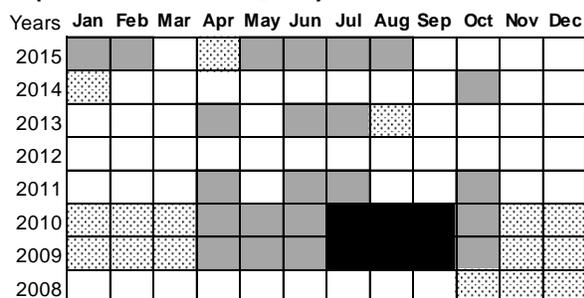
**A. pH in Bear Creek @ Kibby Rd**



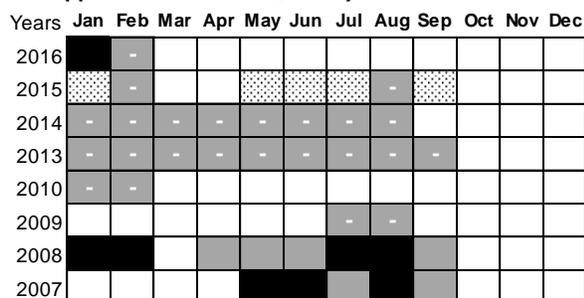
**B. pH in Deadman Creek @ Hwy 59**



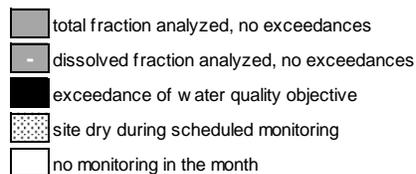
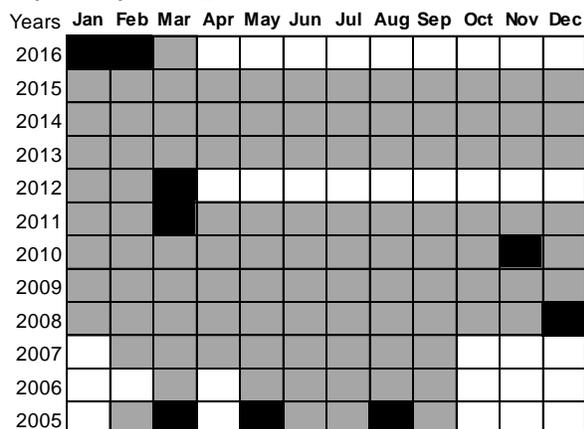
**C. pH in Howard Lateral @ Hwy 140**



**D. Copper in Miles Creek @ Reilly Rd**

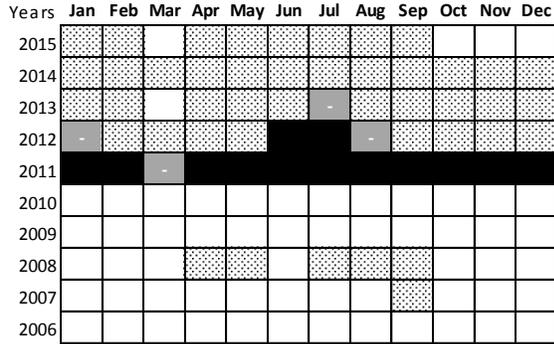


**E. pH in Dry Creek @ Wellsford Rd**

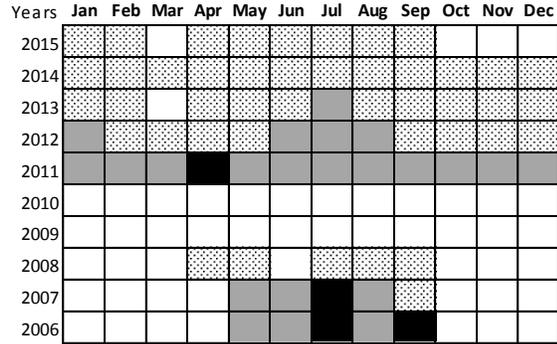


The Coalition has requested management plan completion for the six site/constituent pairs in Figures F-K. However, due to dry conditions, 3 years of data showing no exceedances has not been attained. Staff does not recommend completion of these management plans. If sites continue to be dry even during years of normal rainfall, the Coalition should submit evidence that conditions have changed unrelated to drought.

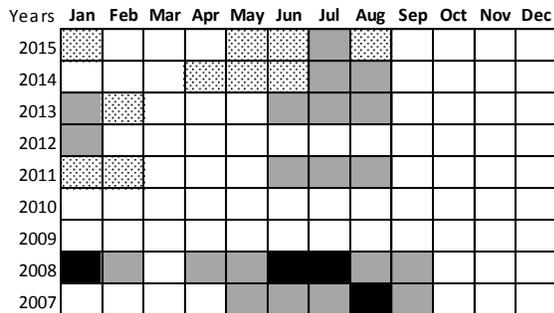
**F. Copper in Berenda Slough @ Ave 18 1/2**



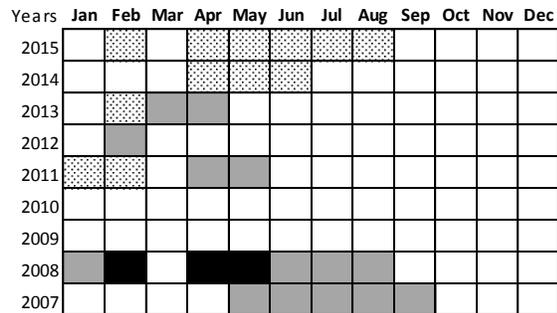
**G. Chlorpyrifos in Berenda Slough @ Ave 18 1/2**



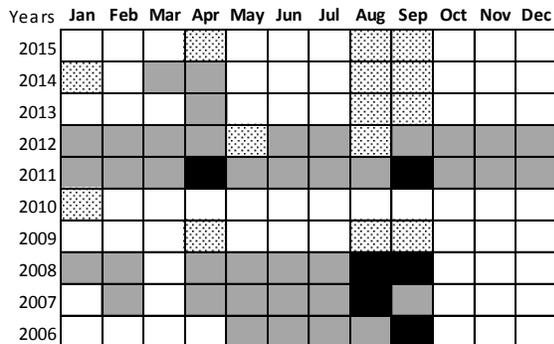
**H. Chlorpyrifos in Livingston Drain @ Robin Ave**



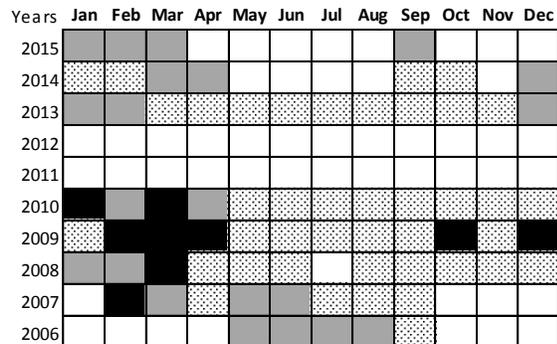
**I. Selenastrum capricornutum in Livingston Drain @ Robin Ave**



**J. Chlorpyrifos in Deadman Creek @ Hwy 59**



**K. Specific Conductivity in Mustang Creek @ East Ave**



- total fraction analyzed, no exceedances
- dissolved fraction analyzed, no exceedances
- exceedance of water quality objective
- site dry during scheduled monitoring
- no monitoring in the month