TULE BASIN WATER QUALITY COALITION

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Surface Water Monitoring Plan

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Prepared By:

4CREEKS

SURFACE WATER MONITORING PLAN

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SECTION 1 – INTRODUCTION

1-1 GENERAL OVERVIEW

As part of the requirements for a Third Party under Waste Discharge Requirements General Order No. R5-2013-0120 for Growers within the Tulare Lake Basin Area, the Tule Basin Water Quality Coalition (*TBWQC*) has prepared the following Surface Water Monitoring Plan. On February 4, 2014, the TBWQC was approved to act as the Third Party for growers within the Tule River, Deer Creek, and White River watersheds.

The goal of the Surface Water Monitoring Plan is to collect sufficient data to describe irrigated agriculture's impacts on surface water quality and to determine whether existing or newly implemented management practices comply with the surface water receiving water limitations of the General Order. Surface water monitoring will include a comprehensive suite of constituents (referred in this report to as parameters) monitored periodically in a manner that allows for an evaluation of the condition of a water body and determination of whether irrigated agriculture operations in the TBWQC are causing or contributing to any surface water quality exceedances. The TBWQC Surface Water Monitoring Plan describes the requirements for reporting, monitoring, and schedule for the major natural waterways within the TBWQC Boundary.

1-2 DESCRIPTION OF COALITION AREA

Within the TBWQC boundary are three natural watersheds, the Tule River Basin, the Deer Creek Basin, and the White River Basin. The TBWQC is located in the southern portion of Tulare County and a small portion in northern Kern County, all within the Tulare Lake Basin. The TBWQC Boundary covers approximately 599,879 acres within the watersheds of the three basins and includes approximately 365,680 acres of irrigated agriculture of the Tulare Lake Basin. The TBWQC also provides coverage for growers within an additional supplemental area of the upper watersheds of the three basins covering approximately 342,346 acres. The supplemental area includes minimal irrigated agriculture and predominantly includes the Sequoia National Forest and the Tule River Indian Reservation.

Within the TBWQC boundary, there are several irrigation districts and water companies that manage the surface water supplies. **TABLE 1-1: TBWQC IRRIGATION DISTRICT AND WATER COMPANIES** identify those agencies within the TBWQC Boundary and the area of land covered by each.

TABLE 1-1: TBWQC IRRIGATION DISTRICTS AND WATER COMPANIES

Irrigation District / Water Company	Total District Area (acres)	Area Within TBWQC Boundary (acres)
Vandalia Water Company	1,379	1,379
Terra Bella Irrigation District	15,053	15,053
Teapot Dome Water District	3,571	3,571
Saucelito Irrigation District	19,702	19,702
Rancho Terra Bella	1,137	1,137
Rag Gulch Water District	5,985	2,682
Porterville Irrigation District	16,997	16,997
Pixley Irrigation District	68,559	68,559
Lower Tule River Irrigation District	102,625	102,625
South Tule Independent Ditch Company	1,553	1,553
Lindsay-Strathmore Irrigation District	16,058	7,554
Lindmore Irrigation District	27,608	19,124
Kern-Tulare Water District	8,507	6,941
Hope Water District	2,289	2,289
Delano Earlimart Irrigation District	56,502	56,502
Atwell Island Water District	7,249	5,656
Angiola Water District	35,846	8,786
Alpaugh Irrigation District	10,689	10,689
Total (acres):	**401,308**	**350,799**

A map identifying the location of each of the irrigation districts and water companies within the TBWQC boundary are shown in **ATTACHMENT A: TBWQC IRRIGATION DISTRICT AND WATER COMPANY MAP**.

1-3 BASIN DESCRIPTION

Climate and Precipitation

The climate of the TBWQC region is semi-arid with mild winters and hot, dry summers. The long term average annual rainfall within the Basin is approximately 8.24 inches. The eastern edge of the TBWQC, along the foothills of the Sierra Nevada Mountains, experiences higher amounts of rainfall, while the western edge of the TBWQC is typically more arid and dry. Precipitation usually occurs from November to May. Snow typically melts during the months of April through July. From June through October, the area generally experiences dry summers where very little precipitation occurs.

A summary of the average monthly precipitation within the TBWQC Boundary, as recorded by the California Irrigation Management Information System (CIMIS) and the Department of Water Resources (DWR), is shown in **TABLE 1-2: TBWQC AVERAGE PRECIPITATION**.

TABLE 1-2: TBWQC AVERAGE PRECIPITATION

Station Name	Success Reservoir (DWR SCC)	Porterville (CIMIS 169)	Alpaugh (CIMIS 203)	Delano (CIMIS 182)	Visalia (DWR VSL)	Average Monthly Precip.
Location relative to TBWQC Boundary	Eastern Edge	East-Central	South Western Edge	Southern Boundary	Northern Boundary	
Long Term Average Monthly Precipitation (inches):						
January	2.03	1.98	0.70	0.86	1.92	**1.50**
February	1.98	1.72	0.72	0.86	1.80	**1.42**
March	1.84	1.76	0.55	0.88	1.60	**1.33**
April	1.13	1.04	0.32	0.78	0.93	**0.84**
May	0.37	0.44	0.11	0.29	0.36	**0.31**
June	0.08	0.07	0.06	0.04	0.08	**0.07**
July	0.02	0.01	0.00	0.00	0.01	**0.01**
August	0.02	0.01	0.00	0.00	0.01	**0.01**
September	0.22	0.17	0.04	0.01	0.12	**0.11**
October	0.56	0.49	0.19	0.50	0.46	**0.44**
November	1.18	0.99	0.36	0.69	0.92	**0.83**
December	1.70	1.64	0.95	1.04	1.60	**1.39**
Long Term Annual Average Precipitation:	**11.14**	**10.33**	**3.99**	**5.96**	**9.81**	**8.24**
Long Term Data Range	1961 - 2013	1905 - 2013	2006 - 2013	2002 - 2013	1905 - 2013	

Topography

Ground elevations range from approximately 200 feet above mean sea level along the western edge of the TBWQC to 1,000 feet above mean sea level along the eastern boundary of the TBWQC (**ATTACHMENT B: USGS QUADRANGLE MAP**). The general direction of ground surface slope is gradually from east to west.

Watersheds

As previously stated, the TBWQC has three natural watersheds within its Boundary, the Tule River, the Deer Creek, and the White River. Each of these watersheds is described in detail as follows:

A. Tule River Basin

Tule River is located in the southeast portion of the San Joaquin Valley within Tulare County. The Tule River watershed, on the western slope of the Southern Sierra Nevada Mountains, is bounded on the North by the Kaweah River and on the South by Deer Creek, White River, Poso Creek and Kern River, and is a fan-shaped mountainous area of about 390 square miles (249,600 acres) above Success Dam. More than half of the mountain portion of the watershed is within the Sequoia National Forest, and the southern portion of the upper watershed is comprised by the Tule River Indian Reservation.

The Tule River above Success Reservoir is formed by three main forks that flow from the high eastern border of the watershed in a southwesterly or westerly direction to Success Reservoir. The North, Middle and South Forks are fed by numerous small streams with slopes ranging from 400 to about 1,000 feet per mile. About five percent (5%) of the Tule

River watershed ranges between elevation 8,000 feet and 10,050 feet, the maximum elevation.

Below Success Reservoir, the Tule River leaves the foothills and enters the flat expanses of the San Joaquin Valley, passes through the City of Porterville and continues across the valley floor approximately 26 miles to the Tulare Lake Bed. Porter Slough, a natural distributary, diverges northwesterly about two miles easterly of the City of Porterville, and is used for conveyance of flood and irrigation releases from Success Reservoir. North of the community of Woodville the Tule River bifurcates into a South fork, Middle fork and North fork for several miles, after which the channels rejoin westerly of State Highway 99. In addition to Porter Slough, there are numerous irrigation diversions from the River, along with distributaries of the Kaweah River (Elk Bayou and Cross Creek) that join the Tule River prior to reaching the Tulare Lake Bed. Tule River water reaching the Tulare Lake Bed is beneficially used for irrigation of crops, stored in cells for later irrigation or evaporates. The Tulare Lake Bed is a closed basin with no natural drainage outlet. Irrigated agriculture begins at and below Success Reservoir and covers 182,100 acres within Tulare County of the Tulare Lake Basin.

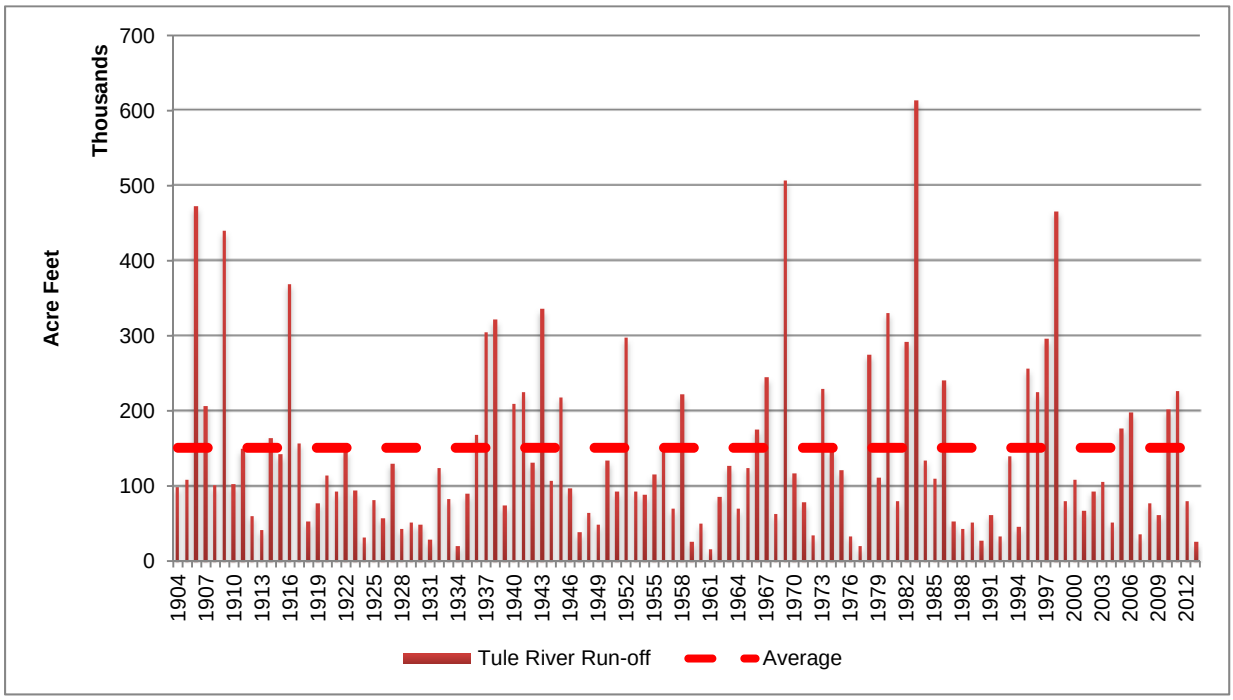
Success Reservoir forms above Success Dam on the main branch of the Tule River about 6 miles east of the City of Porterville. Success Dam, with construction of the dam completed in 1961 by the U. S. Army Corps of Engineers (Corps), provides flood protection and storage for irrigation water. The earth fill dam is 145 feet high, 3,490 feet along the crest, and at a gross pool elevation of 652.2 feet mean sea level (msl). The dam and reservoir provide 82,300 acre-feet (a.f.) of flood control and irrigation water storage capacity.

A non-federal hydroelectric plant is located below Success Dam. Above Success Reservoir, two small hydroelectric power plants are located in the Tule River watershed. One plant is owned by the Pacific Gas and Electric Company and situated on the North Fork of the Middle Fork Tule River, and the other plant is owned by Southern California Edison and located on the Middle Fork Tule River. These hydroelectric plants operate on the unregulated flow of the Middle Fork Tule River.

During the flood season (November – April), the storage in Success Reservoir is controlled by the Flood Control Diagram of the Corps, which requires flood releases if the storage exceeds a certain storage elevation in the Reservoir. Outside the flood controlled season, the Tule River flow may be stored or released to satisfy the demands of the water rights holders downstream of Success Reservoir, all being members of the Tule River Association.

The annual surface water runoff was compiled for Tule River at Success Reservoir from 1904 through 2013 and is set forth in **FIGURE 1-2: TULE RIVER ANNUAL RUN-OFF AT SUCCESS RESERVOIR.** The 110 year average annual runoff of the Tule River at Success Reservoir is 140,000 acre feet.

FIGURE 1-2: TULE RIVER ANNUAL RUN-OFF AT SUCCESS RESERVOIR



B. Deer Creek Basin

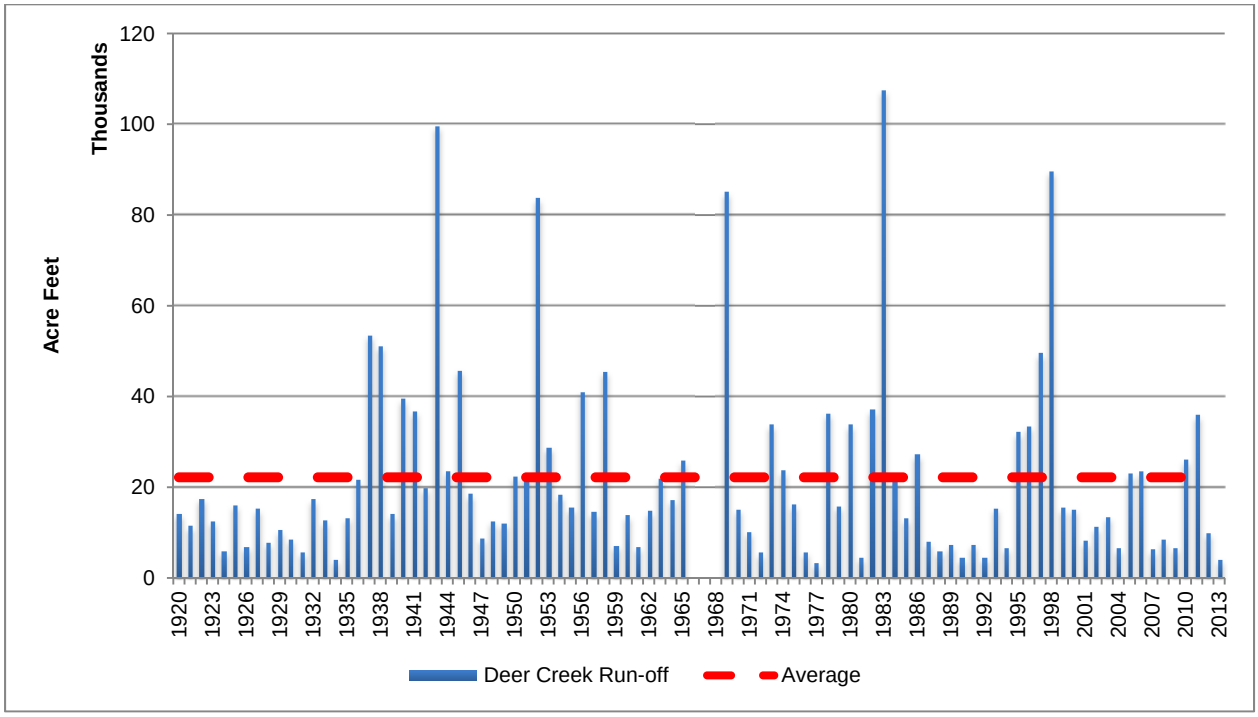
Deer Creek is located south of the Tule River and North of the Kern River, Poso Creek and White River. The Deer Creek watershed, 136 square miles (87,040 acres) above State Highway 65, drains a portion of the western slope of the Greenhorn Mountains, an intermediate range of the Sierra Nevada. Deer Creek flows generally westward across the Lower San Joaquin Valley near the communities of Terra Bella and Pixley, through the Pixley Wildlife Refuge and terminates in the Homeland Canal of the Tulare Lake Bed.

Under normal conditions of runoff, flows of Deer Creek gradually dissipate by diversions, channel percolation and evaporation. Only during periods of extreme runoff (flooding) do flows reach the Homeland Canal. Flood flows that reach the Homeland Canal are diverted to holding cells and are beneficially used for irrigation or evaporate. The Tulare Lake Bed is a sump, does not have an outlet, and collects flood waters from numerous streams and rivers of the San Joaquin Valley.

The watershed of Deer Creek is comprised of steep mountainous terrain covered mainly with pine and fir timber. At lower elevations, trees become scattered and brush is the predominant cover except at the foothill elevations where grass is the primary vegetation. Elevations within the Deer Creek watershed range from a maximum elevation of 8,300 feet above mean sea level at the headwater to a minimum of about 200 feet at Homeland Canal. Irrigated agriculture within the Deer Creek Basin commences at about elevation 600 feet and covers 137,500 acres in Tulare County of the Tulare Lake Basin.

The annual surface water runoff was compiled for the Deer Creek at Fountain Springs from 1918 through 2013 and is set forth in **FIGURE 1-3: DEER CREEK ANNUAL RUN-OFF AT FOUNTAIN SPRINGS**. The 95 year average annual runoff of Deer Creek at Fountain Springs is 22,000 acre-feet.

FIGURE 1-3: DEER CREEK ANNUAL RUN-OFF AT FOUNTAIN SPRINGS



C. White River Basin

White River is located South of Deer Creek and North of Poso Creek and Kern River. The White River watershed contains 124 square miles (79,360 acres) above State Highway 65 and drains a portion of the western slope of the Greenhorn Mountains, an intermediate range of the Sierra Nevada. White River courses westward through the lower San Joaquin Valley near the communities of Ducor, Earlimart, Allensworth and Alpaugh in route to the Tulare Lake Bed.

Typically, with normal conditions, the flow of White River dissipates as channel percolation and evaporation. Only during periods of extreme runoff (flooding) do flows reach the Tulare Lake Bed. Flood flows that reach the Tulare Lake Bed are diverted to holding cells and beneficially used for irrigation or evaporates. The Tulare Lake Bed provides a closed basin, does not have an outlet, and collects flood waters from numerous tributary rivers and creeks.

The White River watershed is similar to the Deer Creek watershed with a portion comprised of steep mountainous terrain covered mainly with pine and fir timber. At lower elevations scattered trees and brush are the predominant cover, except at the foothill elevations where grass is the primary vegetation. Elevations within the White River watershed range from a maximum elevation of 8,300 feet above mean sea level at the headwater to a minimum of about 200 feet at the Tulare Lake Bed. Irrigated agriculture within the White River Basin commences at State Highway 65 and covers 132,500 acres in Tulare and Kern Counties of the Tulare Lake Basin.

The White River has not had a consistent gaging station for monitoring flow. The historical runoff of White River within the Tulare Lake Basin has not been monitored or recorded.

1-4 LAND USE

The land use within the TBWQC boundary is predominantly agriculture with small communities scattered throughout the TBWQC area. The communities and cities within the TBWQC are listed below:

- City of Porterville
- Community of Tipton
- Community of Springville
- Community of Alpaugh
- Community of Pixley
- Community of Earlimart
- City of Delano
- Community of Ducor
- Community of Terra Bella
- Community of Woodville
- Community of Poplar

In addition to the organized communities and cities, there are many individual homes and businesses within the TBWQC boundary. **ATTACHMENT C: TBWQC COMMUNITIES AND CITIES** identifies the location of each community and city within the TBWQC boundary.

A. Beneficial Uses

The Regional Water Quality Control Board (RWQCB) has defined the beneficial uses for the Tule River, Deer Creek, and White River within the Water Quality Control Plan for the Tulare Lake Basin. Beneficial uses of waters of the Deer Creek Basin and the White River Basin are included in the Water Quality Control Plan as other Eastside Streams. The beneficial uses of waters of the Tule River Basin, Deer Creek, and White River are provided in **TABLE 1-3: TULE RIVER, DEER CREEK, AND WHITE RIVER BENEFICIAL USES.**

TABLE 1-3: TULE RIVER, DEER CREEK, AND WHITE RIVER BENEFICIAL USES

River Section	MUN	AGR	IND	PRO	POW	REC-1	REC-2	WARM	COLD	WLD	RARE	SPWN	GWR	FRSH
Tule River														
Above Lake Success	X	X			X	X	X	X	X	X	X	X		X
Lake Success		X			X	X	X	X		X				X
Below Lake Success	X	X	X	X		X	X	X		X			X	
East Side Streams (includes Deer Creek and White River)	X	X				X	X	X	X	X			X	

MUN = Municipal and Domestic Supply; AGR = Agricultural Supply; IND = Industrial Service Supply; PRO = Industrial Process Supply; POW = Hydropower Generation; REC-1 = Water Contact Recreation; REC-2 = Non-Contact Water Recreation; WARM = Warm Freshwater Habitat; COLD = Cold freshwater habitat; WILD = Wildlife habitat; RARE = Rare, Threatened or Endangered Species; SPWN = Spawning, Reproduction and/or Early Development; GWR = Ground Water Recharge; FRSH = Freshwater Replenishment

B. Tulare and Kern County Land Use Designation

The TBWQC is situated within the southern portion of Tulare County and covers a small portion of northern Kern County. There are two sources of Land Use Designations for the TBWQC.

Department of Water Resources Crop Land Use

The State of California, Department of Water Resources (DWR) publishes data on land use by crop type in each county. **APPENDIX A: DWR LAND USE DEFINITIONS** summarizes the different land use types identified.

The general crop land use of the TBWQC within Tulare County and a portion of Kern County as of the DWR 2007 data, excluding the lands within the supplemental area *(data for the supplemental boundary was sparse and unavailable as there is little irrigated agricultural land within this area)* is summarized in **TABLE 1-4: DWR CROP LAND USE WITHIN THE TBWQC**. Based on the 2007 DWR data, approximately 364,000 acres (61%) of the developed land within the TBWQC Boundary is used for agricultural purposes. A map identifying the location of the different land uses within the TBWQC per the DWR is identified on **ATTACHMENT D: TBWQC CROP LAND USE MAP**.

TABLE 1-4: DWR CROP LAND USE WITHIN THE TBWQC

Land Use	Area within TBWQC Boundary *(Excludes Supplemental Boundary)* acres	Percent of Total Land
IRRIGATED AGRICULTURE LAND USE		
Citrus and Subtropical	54,779.5	9.1%
Deciduous Fruits and Nuts	59,647.0	9.9%
Field Crops	53,215.8	8.9%
Grain and Hay Crops	84,524.0	14.1%
Pasture	49,176.3	8.2%
Vineyard	35,892.5	6.0%
Truck and Berry Crops	1,749.8	0.3%
Incidental to Agriculture	15,350.2	2.6%
Water Surface	9,747.5	1.6%
Sub-Total (acres):	**364,082.6**	**60.7%**
NON-IRRIGATED AGRICULTURE LAND USE		
Idle	11,578.5	1.9%
Barren	49.6	0.0%
Riparian Vegetation	1,598.1	0.3%
Native Vegetation	186,677.7	31.1%
Urban, Commercial, Industrial, Residential	35,892.5	6.0%
Sub-Total (acres):	**235,796.4**	**39.3%**
TOTAL (acres):	**599,879.0**	
Total Number of Dairy Facilities	**110**	

Farmland Mapping and Monitoring Program (FMMP)

The State of California Department of Conservation has a Farmland Mapping and Monitoring Program (FMMP) which produces maps and statistical data used for analyzing impacts on the California's agricultural industry. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance.

FMMP's study area is compatible with modern soil surveys developed by the US Department of Agriculture (USDA) . A classification system that combines technical soil ratings and current land use is the basis for the Important Farmland Maps of these lands. Most public land areas, such as National Forests and Bureau of Land Management holdings, are not mapped.

The minimum land use mapping unit is 10 acres unless otherwise specified. Smaller units of land are incorporated into the surrounding map classifications. In order to most accurately represent the NRCS digital soil survey, soil units of one acre or larger are depicted in Important Farmland Maps.

Prime Farmland (P)

Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance (S)

Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland (U)

Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Local Importance (L)

Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Grazing Land (G)

Land on which the existing vegetation is suited for the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

Urban and Built-up Land (D)

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial,

commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land (X)
Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

The general land use for the TBWQC within Tulare County and a portion of Kern County as of the FMMP data is summarized in **TABLE 1-5: TBWQC LAND USE**. Based on the 2010 FMMP data, approximately 364,000 acres (61%) of the developed land within the TBWQC Boundary is used for agricultural purposes. A map identifying the location of the different land uses within the TBWQC per the FMMP is identified on **ATTACHMENT E: FMMP LAND USE MAP**.

TABLE 1-5: TBWQC LAND USE

FMMP Land Use Category	Area (acres)	% of Total Area
IRRIGATED AGRICULTURE		
Confined Animal Agriculture	11,987.4	1.3%
Farmland of Local Importance	93,554.1	9.9%
Prime Farmland	179,817.5	19.0%
Unique Farmland	4,965.6	0.5%
Farmland of Statewide Importance	164,585.3	17.4%
Semi-Agricultural and Rural Commercial Land	2,746.1	0.3%
Sub-Total:	**457,656.0**	48.3%
NON-IRRIGATED AGRICULTURE		
Urban and Built-Up Land	17,225.0	1.8%
Natural Vegetation	95,461.4	10.1%
Rural Residential	9,314.7	1.0%
Grazing Land	214,147.8	22.6%
Vacant or Disturbed	5,093.0	0.5%
Water	2,561.1	0.3%
Other Land	145,349.8	15.4%
Sub-Total:	**489,152.80**	51.7%
TOTAL (acres):	**946,808.8**	
**2010 Data from California Department of Conservation: Farmland Mapping and Monitoring Program - Kern and Tulare Counties*		
http://www.consrv.ca.gov/dlrp/fmmp/Pages/Index.aspx		

SECTION 2 – MONITORING AND REPORTING PROGRAM

2-1 MONITORING AND REPORTING SITE SELECTION

The waters of the state within the TBWQC (Tule River, Deer Creek, and White River) are to be monitored as required by General Order R5-2013-0120. The goal of the monitoring program is to characterize the effect of discharges from irrigated agriculture on surface waters of the State.

A. Rationale for Selecting Monitoring Sites Locations

The sites selected for the fixed monitoring locations along the Tule River, Deer Creek, and White River were chosen to provide a series of monitoring sites among the irrigated agricultural lands along each water body within the TBWQC. In general, along each of the three natural waterways within the TBWQC, a monitoring station was sited at the location the waterway enters the irrigated agriculture of the basin from the Sierra Nevada Mountains and a monitoring station at the downstream end of the waterway where limited flow occurs. For the Tule River and Deer Creek, intermediate monitoring sites were added to better characterize and distinguish between potential discharges from the different irrigated lands and municipalities along the channel.

B. Existing Monitoring Stations

Since 2006, the Tule River Sub-Watershed has sampled and monitored the surface water quality at each of seven monitoring stations as follows:

- Porter Slough below Road 192
- Tule River at Road 144
- Tule River at Road 92
- Deer Creek at Road 248
- Deer Creek at Road 176
- Deer Creek at Road 120
- White River at Road 208

i. Historical and On-Going Monitoring Data for Each Site

The historical water quality data for each monitoring station is included in **APPENDIX B: HISTORICAL WATER QUALITY RESULTS FOR EXISTING MONITORING STATIONS**. A summary of the frequency of monitoring for each station is provided in **TABLE 2-1: EXISTING STATION SAMPLING FREQUENCY.**

TABLE 2-1: EXISTING STATION SAMPLING FREQUENCY

	Porter Slough Near Rd 192	Tule River at Road 144	Tule River at Road 92	Deer Creek at Road 248	Deer Creek at Road 176	Deer Creek at Road 120	White River at Road 208
Date of First Sample	5/11/2009	8/1/2006	8/1/2006	3/9/2010	8/1/2006	8/1/2006	4/12/2006
Total No. of Samples	12	28	27	21	27	24	5
Average No. of Samples Taken Annually	2.4	3.5	3.4	5.3	3.4	3.0	1.7

Based on the preceding data, the frequency of monitoring the TBWQC, considering the season, intermittent flows, and hydrology, about three to five sampling events occur on average each year.

Tule River Sub-watershed Exceedances Management Plan

On 5 December 2012, the RWQCB approved the Tule River Sub-watershed Exceedances Management Plan, which included a summary of those exceedances which occurred more than one time over a three year period between 2006 and September 2012. **TABLE 2-2: EXISTING MANAGEMENT PLAN SUMMARY** identifies the management plans under preparation for each of the existing surface water monitoring stations.

TABLE 2-2: EXISTING EXCEEDANCES MANAGEMENT PLAN SUMMARY

Monitoring Station	***NUMBER OF EXCEEDANCES (2006 – SEPTEMBER 2012)***						
	pH	E. coli	Fecal coliform	Chlorpyrifos	*Pimephale promelas*	*Selanastrum capricronutum*	*Hyalella azteca*
Porter Slough Near Road 192	2	5	3	-	-	-	-
Tule River at Road 144	-	-	-	2	-	-	-
Tule River at Road 92	3	4	3	-	2	2	-
Deer Creek at Road 248	2	12	8	-	-	-	-
Deer Creek at Road 176	-	4	-	-	2	-	-
Deer Creek at Road 120	4	2	2	3	-	-	2
Total:	**19**	*(includes only parameters that had at least 2 exceedances at a station during a 3 year period)*					

TBWQC staff is continuing the implementation of the approved management plan for resolution of the exceedances by conducting source identification studies, further field analysis to identify the potential causes of the exceedance, and outreach to landowners. Updates to the studies, outreach, and analysis of the approved Management Plan will be included within the TBWQC Annual Report.

C. Types of Monitoring Sites

TBWQC ambient surface water quality and toxicity and sediment toxicity monitoring of the impact of agriculture discharges will be conducted considering three types of monitoring: Core Monitoring, Assessment Monitoring, and Ephemeral Monitoring. Although Deer Creek and White River are ephemeral streams and Tule River is controlled by Success Dam, Core and Assessment Monitoring will be conducted for all three water bodies. The selections of the monitoring sites on each stream are designed to characterize the result of discharges from irrigated agriculture on waters of the State.

Core Monitoring Sites

Core monitoring will be used to track trends in surface water quality over time. Core monitoring will be conducted at the permanent monitoring stations along the waterways of the Tule River, Deer Creek, and White River within the TBWQC boundary. The Core monitoring will be performed on a regular schedule each month. The TBWQC Core Monitoring sites were chosen using the following criteria:

- A series of locations along each stream throughout the TBWQC area, with the stations located along the eastern boundary where surface waters enter the beginning of agriculture activities in each basin, intermediate sites along the waterway, and a downstream site near the western boundary of the basin. Some of the sites are in areas of regulated flow, others are in areas where there is intermittent flow.
- Sites were chosen where a gaging station existing and historical data was available.
- Sites that were a part of the previous Surface Water Waiver Monitoring and Reporting Program to utilize the historical database from which trends may be evaluated.

Assessment Monitoring Sites

Assessment monitoring will be conducted to track changes in surface water quality and identify more specifically the effect of management practices used in irrigated agricultural practices. Assessment monitoring will be at the same permanent locations along the Tule River, Deer Creek, and White River defined for Core monitoring. Because the natural waterways within the TBWQC are generally smaller streams due to smaller upper tributary watersheds, Assessment and Core monitoring will be conducted at sites best located to capture flow during times of runoff and within the irrigated agriculture realm of the TBWQC.

2-2 MONITORING SITES

Each of the monitoring sites described below will be used for both Core and Assessment monitoring. **ATTACHMENT F: TBWQC MONITORING SITES** identifies the proposed location for each monitoring site within the TBWQC boundary. The location of each monitoring site is specifically identified in **TABLE 2-3: MONITORING SITE LOCATIONS.**

A photograph of each monitoring station is included in **APPENDIX C: MONITORING STATION PHOTOGRAPHS.**

TABLE 2-3: MONITORING SITE LOCATIONS

Monitoring Station	Township	Range	Section	Latitude	Longitude
Tule River at Plano Bridge	21S	28E	36	36.05586515360	-119.00812471000
Porter Slough Near Road 192	21S	27E	11	36.11616143620	-119.13398697900
Tule River at Road 144	21S	26E	4	36.12826860190	-119.25063073100
Tule River at Road 92	21S	25E	22	36.09301932380	-119.36660043700
Deer Creek at Road 248	22S	28E	25	35.99260167460	-119.01786413800
Deer Creek at Road 176	23S	27E	9	35.94674155250	-119.17955110500
Deer Creek at Road 120	23S	26E	19	35.91244837560	-119.30377598200
White River at Road 208	24S	27E	12	35.85859732220	-119.10788724900
White River at Road 128	24S	26E	8	35.85569181130	-119.28597505800

The different crop land use legend is identified for reference for the crop maps associated with each station in **FIGURE 2-1: CROP LAND USE LEGEND**.

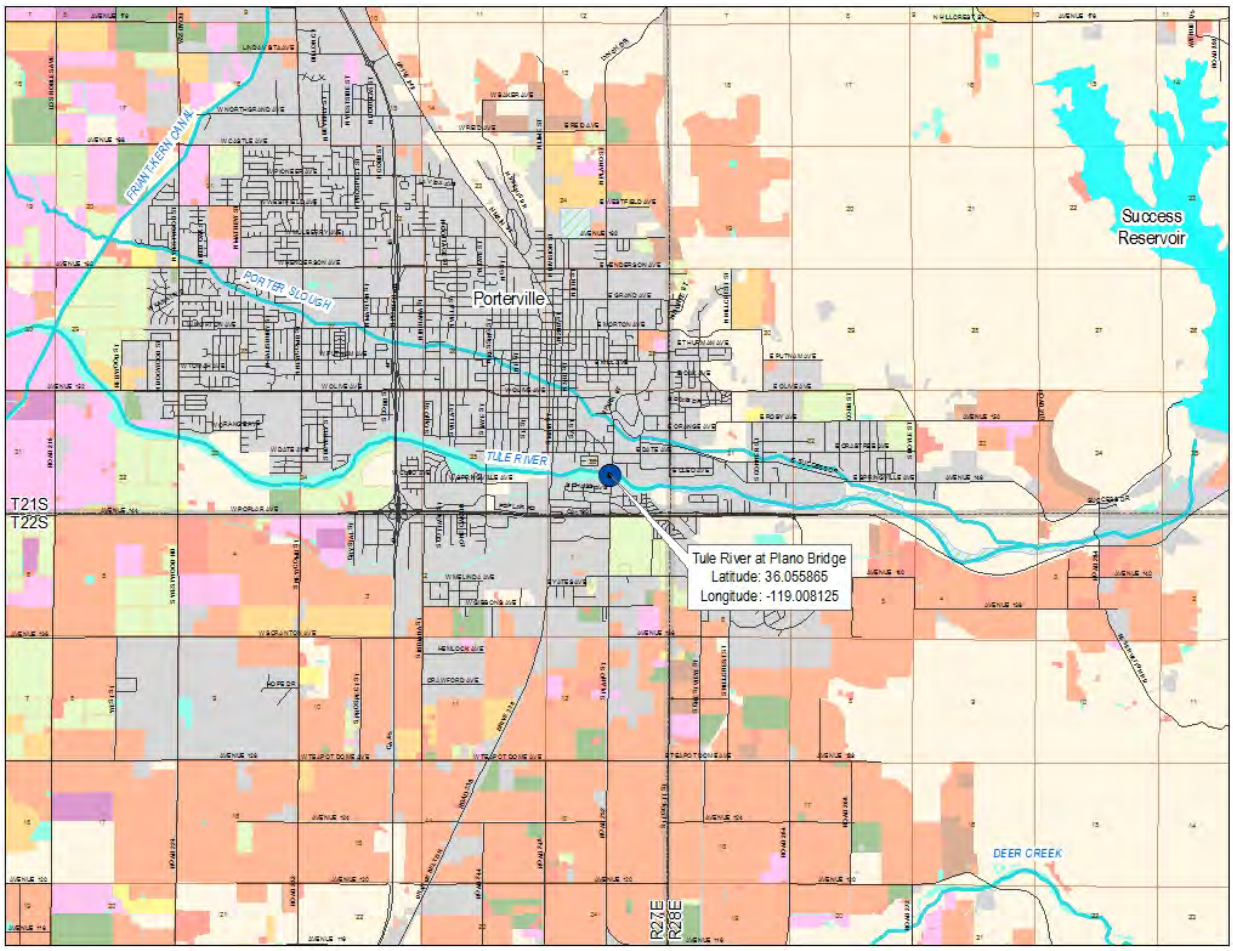
FIGURE 2-1: CROP LAND USE LEGEND

A. Tule River at Plano Street Bridge – Porterville, CA

i. Physical Description

The Tule River at Plano Street Bridge monitoring site is located at the eastern edge of the City of Porterville. This location is approximately 5 miles downstream of Success Dam at the location where the Tule River crosses beneath Plano Street. The sampling of Tule River flows at this site will occur on the east side of Plano Bridge. The monitoring station location with the land use of the crops is identified in **FIGURE 2-2: TULE RIVER AT PLANO STREET BRIDGE**.

FIGURE 2-2: TULE RIVER AT PLANO STREET BRIDGE



ii. Rationale

This monitoring station was chosen to monitor the upstream flows of the Tule River. This station is 5 miles downstream of Success Dam and upstream of the effects of the City of Porterville, and provides the opportunity to establish baseline surface water quality data for the Tule River. This station was not included as part of the previous Surface Water Waiver program and has been added to establish the baseline water quality conditions of the Tule River prior to entering the City of Porterville and extensive irrigated agriculture. The water quality results from this site can be compared to the downstream monitoring site results for location and identification of sources of parameter exceedances. The monitoring site has adequate accessibility through City and County roads.

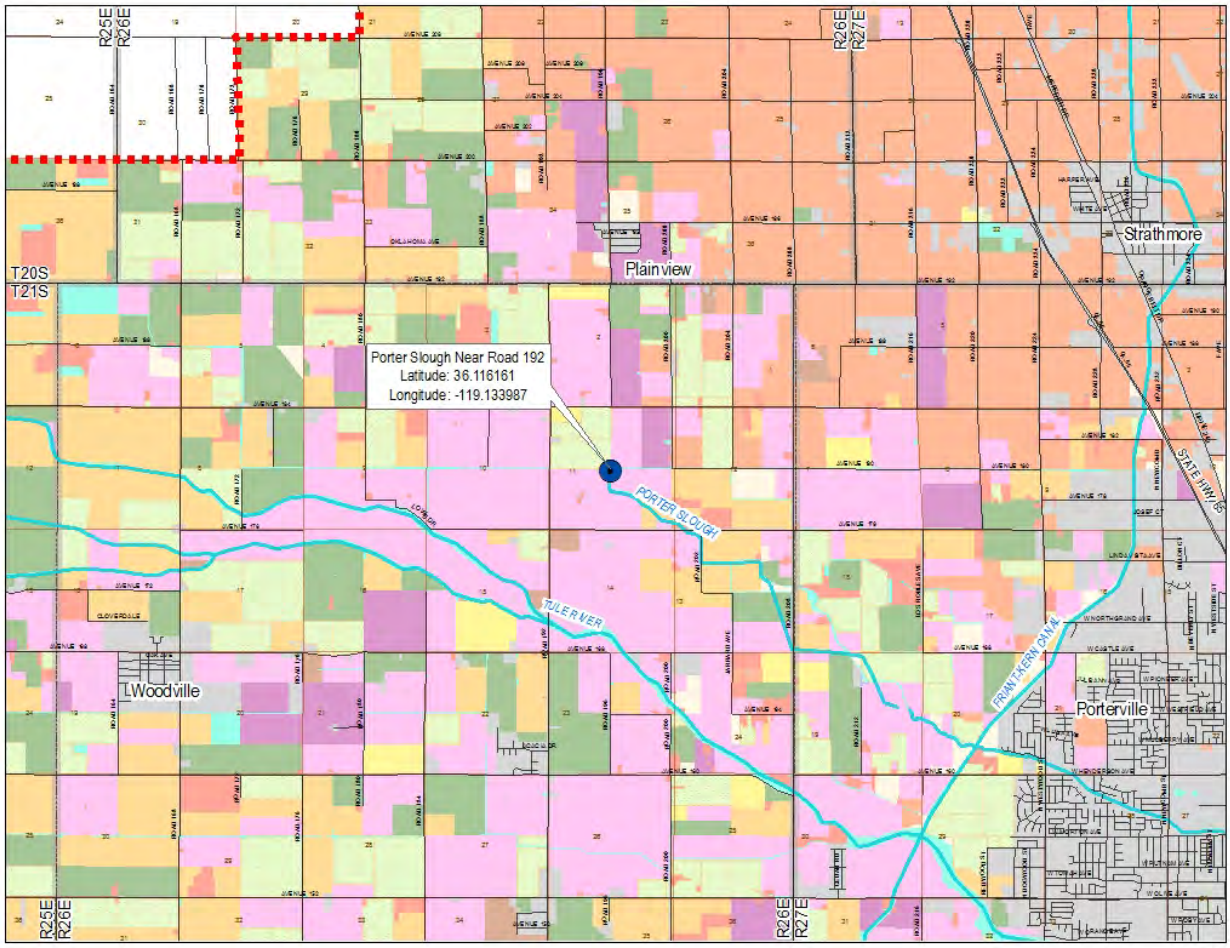
B. Porter Slough Near Road 192 – Porterville, CA

i. Physical Description

This monitoring station is located approximately 4.5 miles northwest of the City of Porterville. Porter Slough is a natural distributary of the Tule River with the head works approximately 2.5 miles downstream of Success Dam. The Porter Slough channel

traverses 12 miles through the City of Porterville and Porterville Irrigation District prior to terminating into a Lower Tule River Irrigation District (LTRID) canal. The sampling point is located within Porter Slough upstream of the discharge into the LTRID canal. This monitoring station is located within the Porterville Irrigation District. The monitoring station location with the land use of the crops is identified in **FIGURE 2-3: PORTER SLOUGH NEAR ROAD 192**.

FIGURE 2-3: PORTER SLOUGH NEAR ROAD 192



ii. Rationale

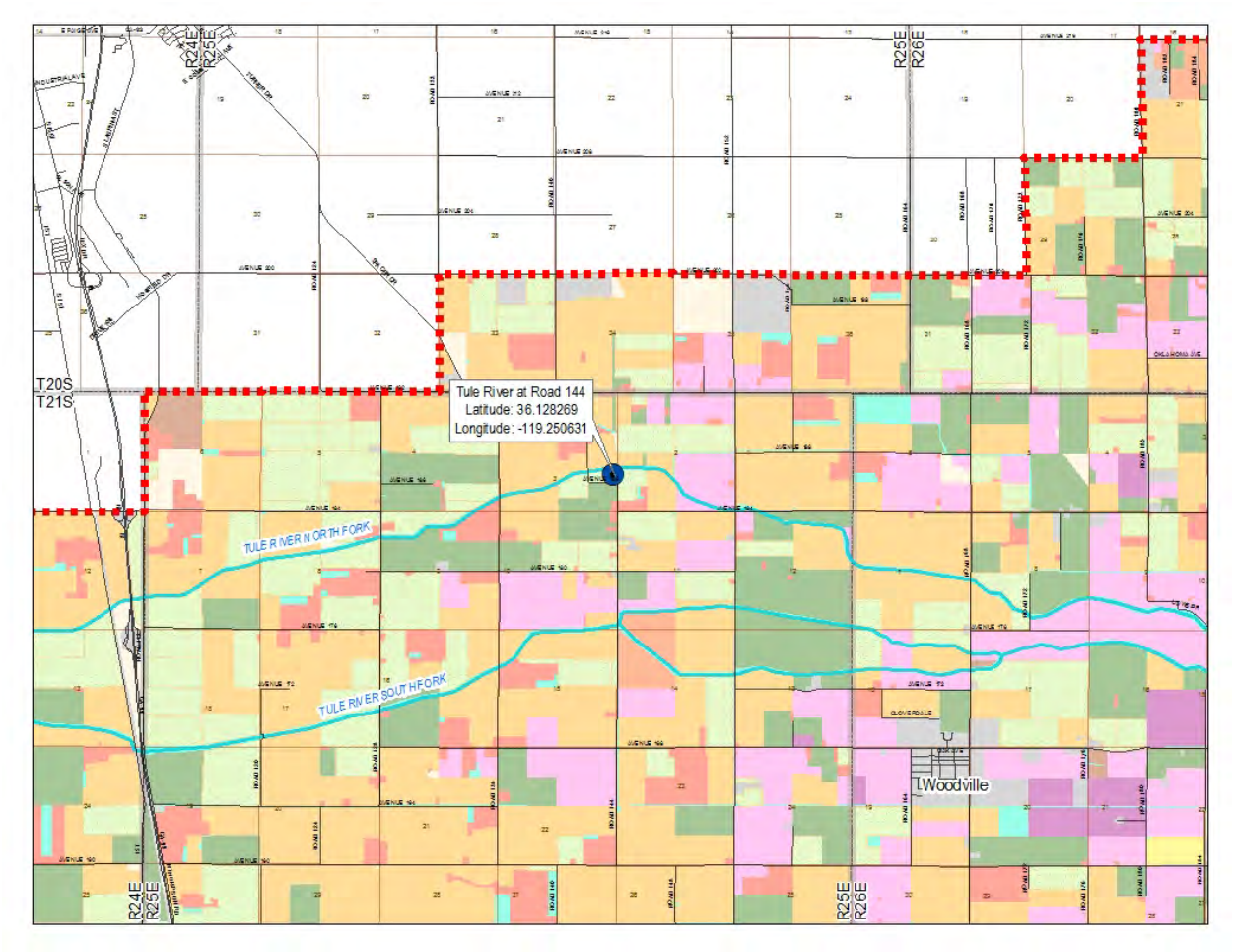
The monitoring station was selected to monitor Porter Slough flows for the impact of irrigated agriculture within the northern portion of the Porterville Irrigation District. The location also provides monitoring data for storm water discharges that might occur within the City of Porterville. The monitoring station has accessibility through County roads and canal bank roadways. This monitoring station has also been a monitoring station of the Surface Water Waiver Program and provides a continuation of data for trend analysis and evaluation.

C. Tule River at Road 144 (North Fork) – Woodville, CA

i. Physical Description

This station is located approximately 3.5 northwest of Woodville, CA. The Tule River bifurcates at Road 192 into North and South Fork channels. Downstream on the South Fork at Road 168, the South Fork further bifurcates into a Middle Fork and South Fork. At Road 144, the South Fork and Middle Fork join as the South Fork and at Road 104 the South Fork and North Fork rejoin back into one main Tule River channel that continues to the Tulare Lake Bed. The Tule River at Road 144 monitoring site is located along the North Fork of the Tule River, just downstream of where LTRID canal discharges CVP water from the Friant Kern Canal into the Tule River. The land uses surrounding this station are predominantly agriculture, ranging from row crops to different permanent crops and is located in the northern central portion of LTRID. The monitoring station location with the land use of the crops is identified in **FIGURE 2-4: TULE RIVER AT ROAD 144 (NORTH FORK)**.

FIGURE 2-4: TULE RIVER AT ROAD 144 (NORTH FORK)



ii. Rationale

The natural flow of the Tule River is controlled by Success Dam. During the winter months, water is released from Success Reservoir per the Army Corps of Engineer

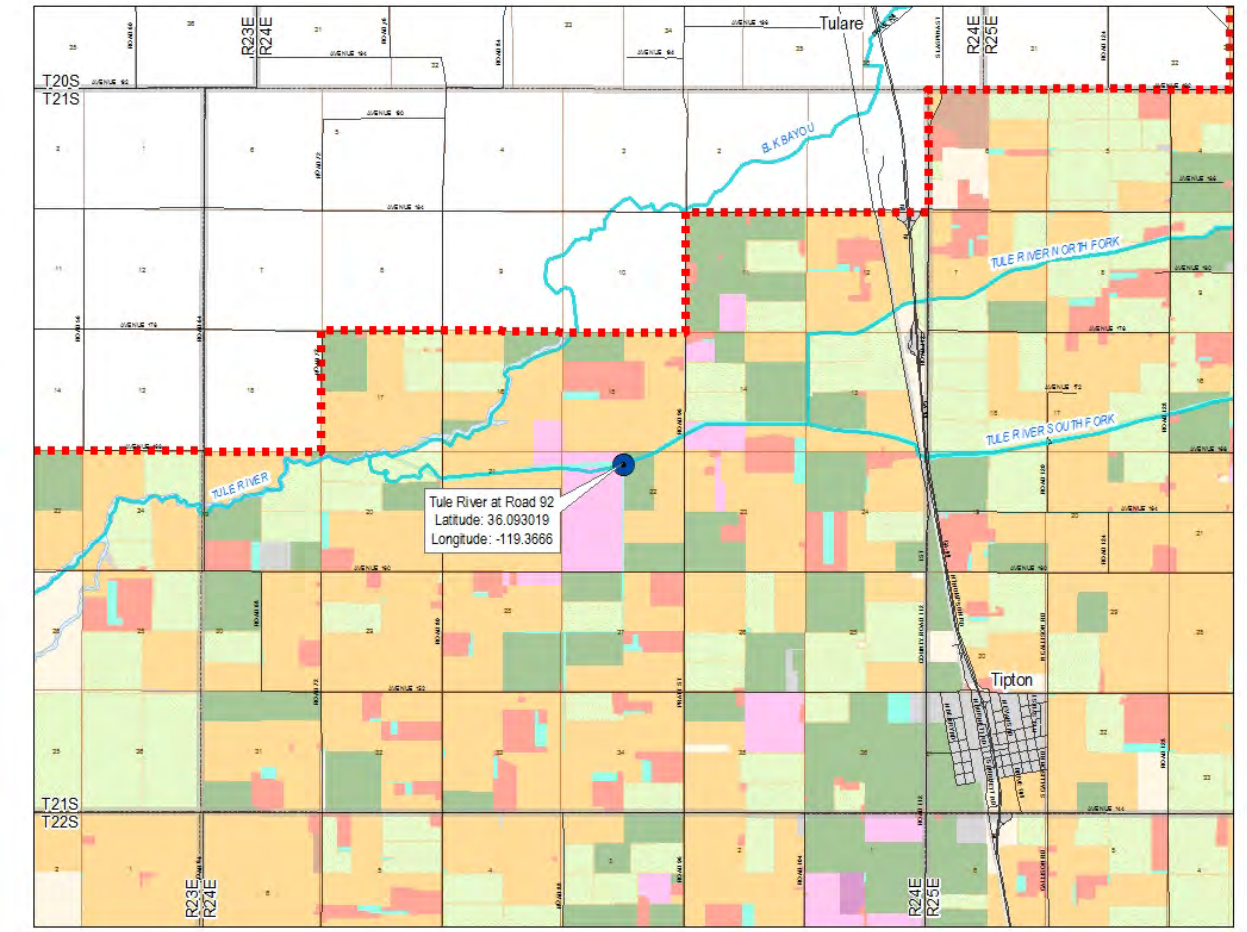
Flood Control Diagram, and used primarily for recharge which normally occurs during wet years. During the summer months, the water stored in Success Reservoir is released based upon irrigation demands of the downstream water rights holders. One of the main distribution channels for conveyance of irrigation waters to LTRID landowners is the North Fork of the Tule River. LTRID is a member of the Friant Water Authority and has a contractual water supply from the Bureau of Reclamation. The main distribution canal for the delivery of CVP water within the northern portion of the TBWQC and LTRID is the North Fork of the Tule River which is also regularly used for the delivery of Tule River water. Monitoring of Tule River flow at Road 144 will identify any change in water quality between both the Tule River at Plano Bridge station and the Porter Slough below 192 station. The monitoring station has adequate accessibility through County roads and has also been a monitoring station of the Surface Water Waiver Program providing a continuation of data for trend analysis and evaluation.

D. Tule River at Road 92 – Tipton, CA

i. Physical Description

This station is located approximately 4 miles northwest of Tipton, CA. The Tule River at Road 92 station is located downstream of where the North Fork, Middle Fork, and South Fork all merge together forming a single Tule River Channel to the Tulare Lake Bed. This station is surrounded by irrigated agriculture of row crops and different permanent crops within LTRID. The monitoring station location with the land use of the crops is identified in **FIGURE 2-5: TULE RIVER AT ROAD 92**.

FIGURE 2-5: TULE RIVER AT ROAD 92



ii. Rationale

At Road 92, the Tule River channel provides the main conveyance of irrigation waters for landowners within the northern portion of LTRID. The monitoring at this station will identify any changes in water quality between the Tule River at Road 144 and water that may have been diverted into the South Fork of the Tule River. Westerly of the Road 92 station the land is used predominantly as a recharge area, which has no irrigated agriculture. In addition, the monitoring station has adequate accessibility through County roads and river bank roadways, and has also been a monitoring station of the Surface Water Waiver Program and will provide the continuation of data for trend analysis and evaluation.

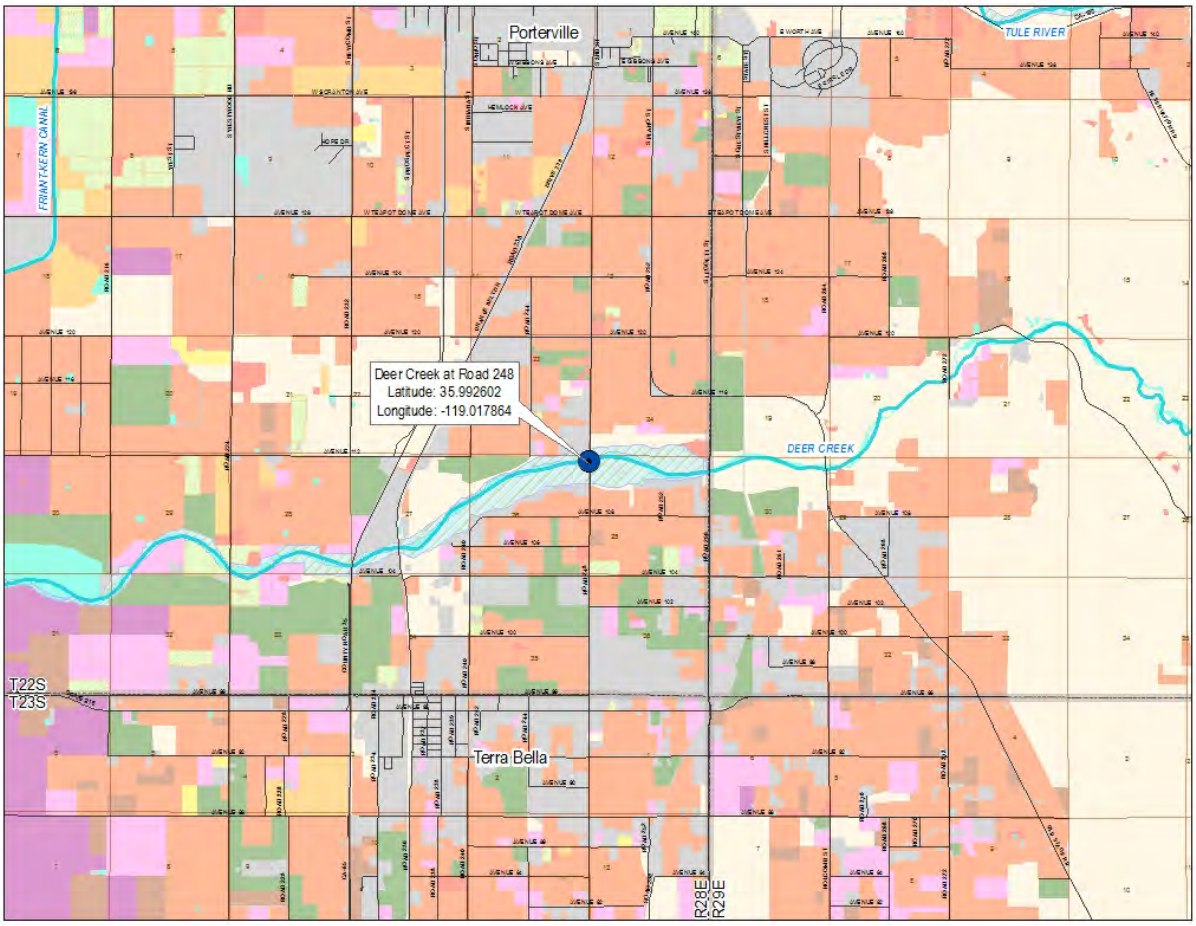
E. Deer Creek at Road 248 – Terra Bella, CA

i. Physical Description

The Deer Creek at Road 248 station is located where the foothills of the Sierra Nevada Mountains meet the flat lands of the basin, approximately 2.5 miles northeast of Terra Bella, CA. At this location, the land use is primarily range land for cattle grazing. This

location is not within an Irrigation District boundary. The monitoring station location with the land use of the crops is identified in **FIGURE 2-6: DEER CREEK AT ROAD 248.**

FIGURE 2-6: DEER CREEK AT ROAD 248



ii. Rationale

Deer Creek is not regulated by a dam; therefore the natural flow of Deer Creek typically occurs during the rainfall season and between April and July when the snow melts in the upper watershed. This monitoring station provides the baseline water quality data for Deer Creek flows prior to entering the irrigated agriculture of the basin. The monitoring station has adequate accessibility through County roads, and has also been a monitoring station of the Surface Water Waiver Program and will provide a continuation of data for trend analysis and evaluation.

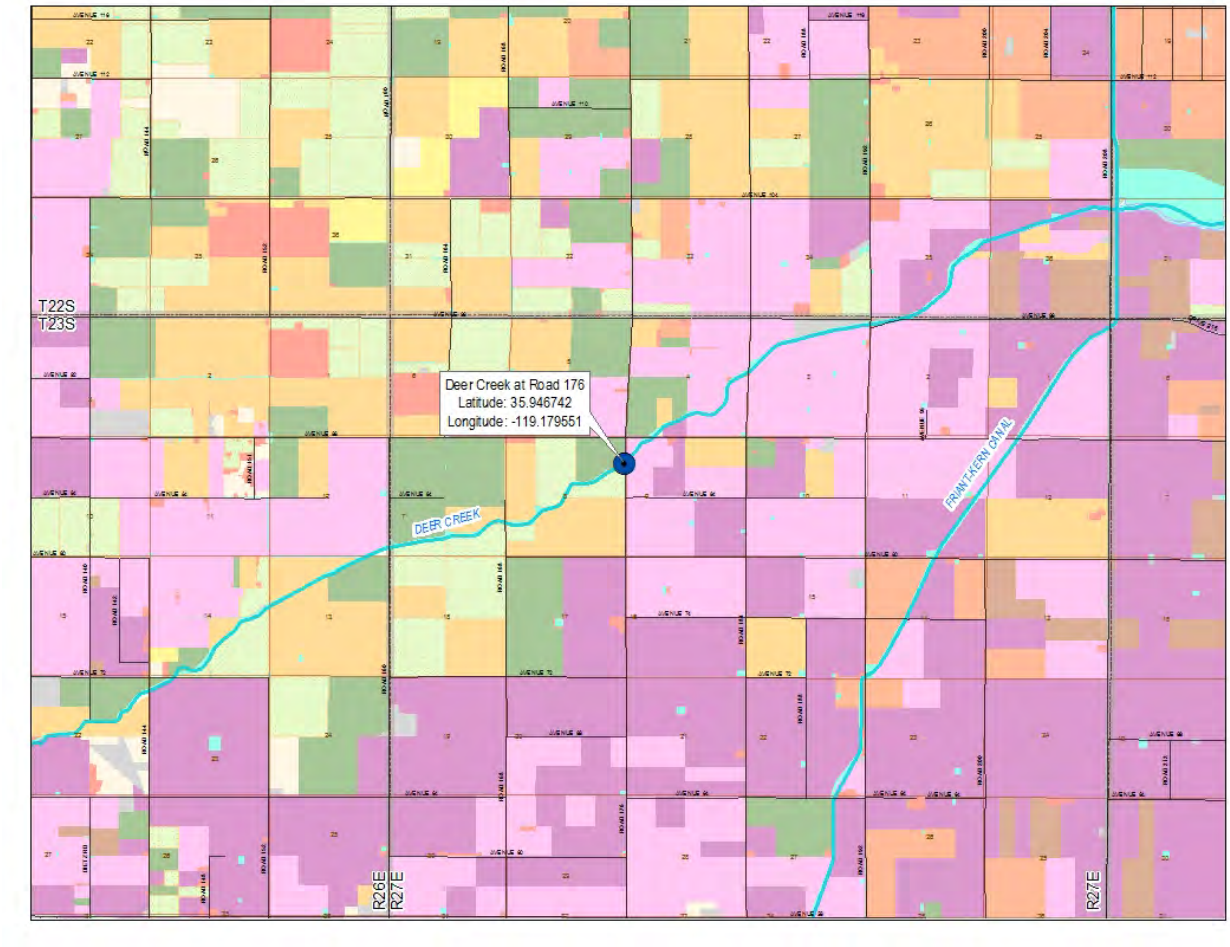
F. Deer Creek at Road 176 – Pixley, CA

i. Physical Description

This station is located approximately 6 miles southeast of Pixley, CA. The land use surrounding this station is predominantly irrigated agriculture, consisting of permanent crops and limited row crops. This station is located within the Saucelito Irrigation District.

The monitoring station location with the land use of the crops is identified in **FIGURE 2-7: DEER CREEK AT ROAD 176.**

FIGURE 2-7: DEER CREEK AT ROAD 176



ii. Rationale

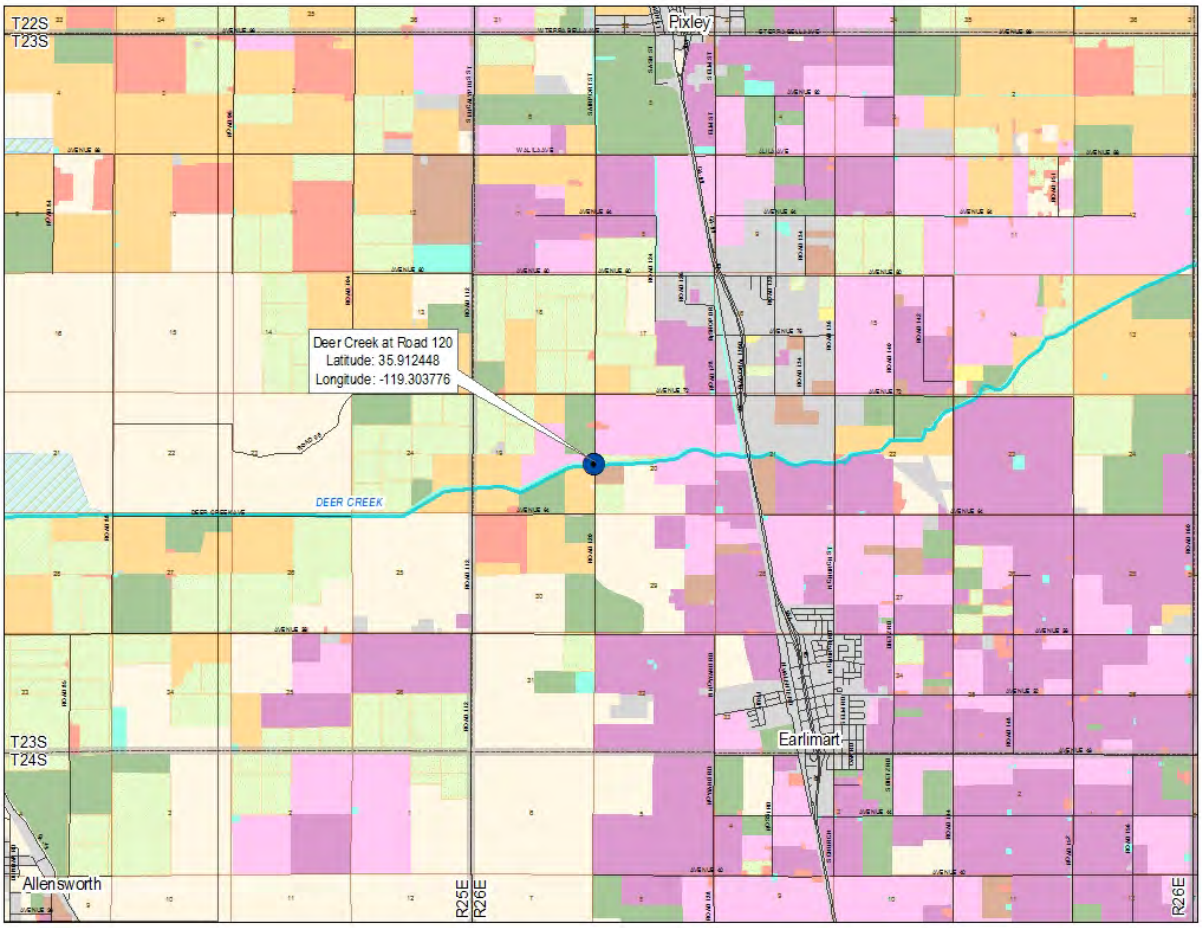
One of the main sources of irrigation water for this area is CVP water imported through the Friant Kern Canal. Pixley Irrigation District uses the Deer Creek channel for groundwater recharge and for the conveyance of imported water to their landowners. The station is located in the Deer Creek channel downstream of the Friant Kern Canal CVP water discharge into Deer Creek providing a sampling station for both Deer Creek natural flow between the Road 248 station and the Road 176 station and for CVP imported water, giving a higher probability of water flow at the monitoring station. There are no locations along the Deer Creek channel where irrigation water is discharged back into Deer Creek. The monitoring station has adequate accessibility through County roads, has been a long term flow gaging station, and was a monitoring station of the Surface Water Waiver Program providing a continuation of data for trend analysis and evaluation.

G. Deer Creek at Road 120 – Pixley, CA

i. Physical Description

This station is located approximately 3.5 miles southwest of Pixley, CA. The land use surrounding this location is predominantly irrigated agriculture, ranging between different row crops and permanent crops. This station is located within the Pixley Irrigation District. The monitoring station location with the land use of the crops is identified in **FIGURE 2-8: DEER CREEK AT ROAD 120.**

FIGURE 2-8: DEER CREEK AT ROAD 120



ii. Rationale

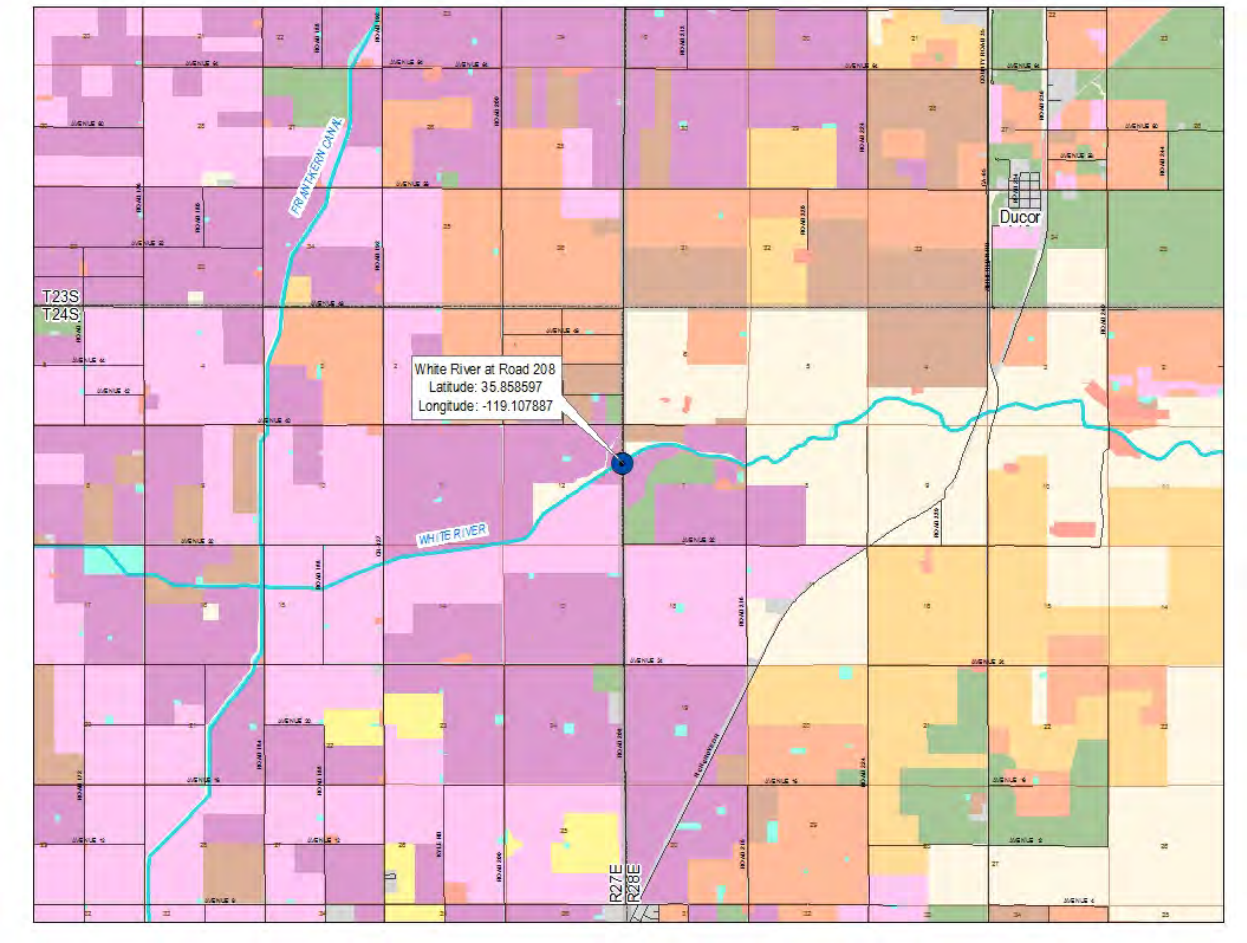
At Road 120, the conveyance of imported CVP water in Deer Creek for Pixley Irrigation District terminates, and only Deer Creek natural flow, typically flood water, passes this location. This monitoring station will identify changes in water quality of flows in Deer Creek, both natural flow and imported CVP water between the Road 176 station and the Road 120 station. The monitoring station has adequate accessibility through County roads and has been a monitoring station of the Surface Water Waiver Program and will provide continuation of data for trend analysis and evaluation.

H. White River at Road 208 – Ducor, CA

i. Physical Description

This station is located approximately 4 miles southwest of Ducor, CA. The Road 208 station is located above the beginning of irrigated agriculture along White River. This location is within the Kern-Tulare Water District. The monitoring station location with the land use of the crops is identified in **FIGURE 2-9: WHITE RIVER AT ROAD 208.**

FIGURE 2-9: WHITE RIVER AT ROAD 208



ii. Rationale

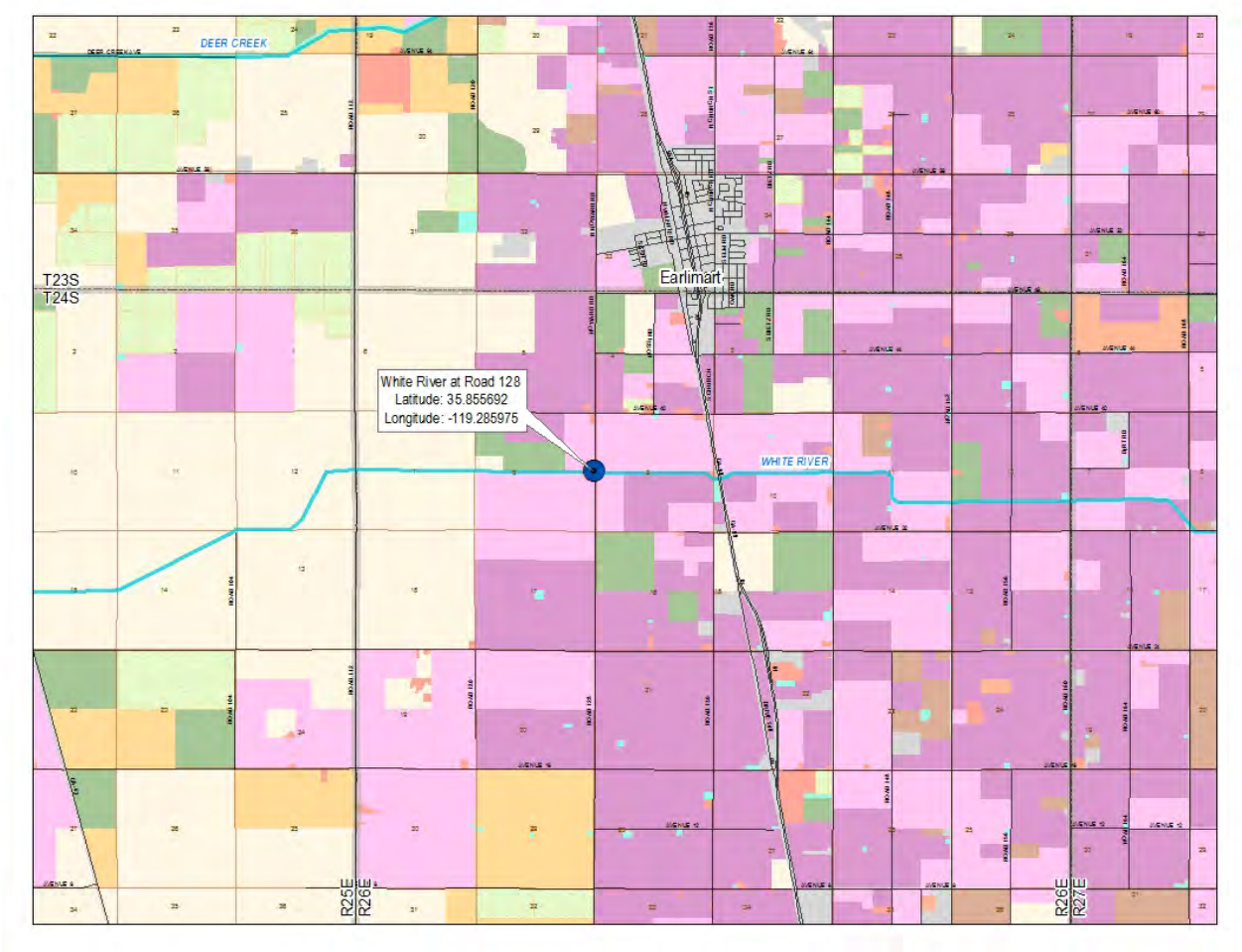
White River is not regulated by a dam. The natural flow of White River typically occurs during the rainfall season and between April and July when the snow melts in the upper watershed. This monitoring station provides baseline water quality data for White River flow prior to entering irrigated agriculture of the basin. This monitoring station has adequate accessibility through County roads, has been a long term gaging station, and was a monitoring station of the Surface Water Waiver Program providing the continuation of data for trend analysis and evaluation.

I. White River at Road 128 – Earlimart, CA

i. Physical Description

This station is located approximately 2 miles southwest of Earlimart, CA. The land use surrounding this station is predominantly various permanent crops. The station is located within the Delano Earlimart Irrigation District (DEID). The monitoring station location with the land use of the crops is identified in **FIGURE 2-10: WHITE RIVER AT ROAD 128.**

FIGURE 2-10: WHITE RIVER AT ROAD 128



ii. Rationale

White River is used for conveyance by DEID of imported CVP water from the Friant Water Canal for groundwater recharge. This monitoring station will identify the changes in water quality of flow in White River between the Road 208 station and Road 128 station. This station will serve as the downstream surface water station of the White River as further west of there is limited irrigated agriculture and rarely there is flow past this station. The monitoring station has adequate accessibility through County roads and is proposed as a new station for White River water quality monitoring that was not previously a part of the Surface Water Waiver Program.

SECTION 3 – MONITORING AND REPORTING SCHEDULE

3-1 MONITORING TYPE AND FREQUENCY

The TBWQC schedule for the surface water monitoring and reporting is based on a Calendar year.

Core Monitoring: Core monitoring sites will be monitored on a repeating three-year cycle, one year of sampling for assessment monitoring parameters followed by two consecutive years of sampling for core monitoring parameters. The cycle will repeat continuously. During each core sampling year, core sampling will be conducted at each monitoring site monthly between the 12th and 18th of each month unless storm flows occur during the Spring and Fall periods. During dry conditions of no flow, a photograph and field inspection sheet will be prepared.

Assessment Monitoring: Assessment monitoring shall be conducted at all monitoring sites for a period of one year and then repeated after 2 years of core monitoring on a regular rotating basis. The period of rotation is to continue per the schedule of the previous waiver program, where in the last assessment monitoring was completed during calendar year 2013. During each assessment year, the assessment monitoring sites will be monitored monthly between the 12th and 18th of each month. Also, during periods of dry conditions of no flow, a photograph and field inspection sheet will be prepared.

Sediment Toxicity: Sediment samples shall be collected and analyzed twice per year, with one sample collected between 15 August and 15 October, and one sample collected between 1 March and 30 April, during each year of either Assessment or Core Monitoring. If there is no water flow present during these periods of the year, it will be noted on the field inspection sheet and no sediment toxicity samples will be taken.

Surface Water Quality Management Plan Monitoring: Surface Water Quality Management Plan (SQMP) monitoring is required where there is an exceedance of a water quality objective or trigger limit more than one time in a three year period. A SQMP will be prepared at that time with a specific monitoring schedule for the parameter of exceedance at the site and to identify any special monitoring at other sites needed to help identify the source of the exceedance.

Stormwater Runoff Monitoring: Sampling events shall be scheduled to capture at least two stormwater runoff events per year. At times, the stormwater events may align with the standard core and assessment monitoring schedule and the stormwater monitoring will be completed during that schedule. The stormwater event may be predicted based on precipitation within each basin, as runoff from the Sierra Nevada Mountains is the primary source of stormwater flow. However, the Tule River flow is a controlled river by Success Dam and releases are controlled by the Army Corps of Engineers during storm events. The criteria for determining the storm runoff event shall be as follows:

- Due to the intermittent nature of stormwater flow in each basin, there shall be a minimum of three consecutive days of precipitation within the watershed and basin as measured at the following CIMIS and DWR precipitation stations:
    - Delano *(White River Stations, Deer Creek Stations)*
    - Porterville *(Tule River Stations, Deer Creek Stations)*
    - Success Reservoir *(Tule River Stations)*
    - Alpaugh *(White River Stations, Deer Creek Stations)*

- Within 12 hours after the third consecutive day of precipitation, the collection of stormwater samples will be taken at each monitoring site where there is flow, along with completion of a field inspection sheet and photograph.
- The parameters to be analyzed of samples taken during the stormwater events will coincide with the parameters sampled for either the Core or Assessment monitoring requirement of that year.

The schedule of the Core and Assessment monitoring cycle is outlined in **TABLE 3-1: MONITORING CYCLE.**

TABLE 3-1: MONITORING CYCLE

Monitoring Type	Year 1	Year 2	Year 3
	Calendar Year 2014	**Calendar Year 2015**	**Calendar Year 2016**
	Sample Mid-Month when flow is present		
Core	**X**	**X**	
Assessment			**X**
Sediment Toxicity	2 times per year (August 15 - October 15 and March 1 - April 30)		
Management Plan	As needed (more than 1 exceedance in three years)		
Stormwater	2 times per year (may occur at same time of Core/Assessment monitoring)		

Note: Cycle Repeats every three years

3-2 MONITORING PARAMETERS

The water quality parameters, as determined from the surface waters sampled, will be used to assess whether there are discharges from irrigated lands entering the natural waterways that will cause exceedances of the Basin Plan Objectives or trigger limits, and to evaluate the effectiveness of management practices implementation. The water quality will be evaluated using both field-measured parameters and laboratory analytical data. **APPENDIX D: MONITORING PARAMETERS** identifies the parameters to be monitored, depending on the type *(Core or Assessment)*.

The pesticides parameters included are those pesticides commonly used in Tulare County, based on data from the Tulare County Agriculture Commissioners office and the Department of Pesticide Regulation. **TABLE 3-2: HISTORICAL PESTICIDE QUALITATIVE RESULTS PER STATION (MAXIMUM)** identifies the maximum level measured during the period 2006 – 2013, of which those in red are those samples which exceeded the numeric water quality trigger limits during this period. **APPENDIX E: TULARE COUNTY PESTICIDE SUMMARY** includes a listing of the most commonly used pesticides in Tulare County during 2013, ranked by acres covered. The locations of where pesticides were applied according to the Tulare County 2013 permits are identified in **ATTACHMENT G: 2013 PESTICIDE APPLICATION LOCATIONS**.

TABLE 3-2: HISTORICAL PESTICIDE SAMPLE RESULTS PER STATION (MAXIMUM)

Pesticide	Units	Trigger Limit	Porter Slough Near Rd 192	Tule River at Road 144	Tule River at Road 92	Deer Creek at Road 248	Deer Creek at Road 176	Deer Creek at Road 120	White River at Road 208
Methoxychlor	ug/L	*0.03*	ND	ND	ND	ND	ND	ND	ND
Atrazine	ug/L	*1*	ND	ND	ND	ND	ND	ND	ND
Cyanazine	ug/L	*1*	ND	ND	ND	ND	ND	ND	ND
Simazine	ug/L	*4*	ND	ND	ND	ND	ND	ND	ND
Methamidophos	ug/L	*0.35*	ND	ND	ND	ND	ND	ND	ND
DDE	ug/L	*0.00059*	ND	ND	ND	ND	ND	ND	ND
DDT	ug/L	*0.00059*	ND	ND	ND	ND	ND	ND	ND
DDD	ug/L	*0.00083*	ND	ND	ND	ND	ND	ND	ND
Dicofol	ug/L	*NA*	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ug/L	*0.00014*	ND	ND	ND	ND	ND	ND	ND
Endrin	ug/L	*0.036*	ND	ND	ND	ND	ND	ND	ND
Bifenthrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.005
Cyfluthrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.005
Cypermethrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.005
Esfenvalerate	ug/L	*NA*	1.4	ND	ND	1.2	1.6	0.9	0.005
Fenpropthrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.01
Lamba cyhalothrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.01
Permethrin	ug/L	*NA*	ND	ND	ND	ND	ND	ND	0.005
Aldicarb	ug/L	*3*	ND	ND	ND	ND	ND	ND	0.766
Carbaryl	ug/L	*2.53*	ND	ND	ND	ND	ND	ND	ND
Carbofuran	ug/L	*0.5*	ND	ND	ND	ND	ND	ND	**0.849**
Diuron	ug/L	*2*	ND	ND	ND	ND	ND	ND	1.46
Linuron	ug/L	*1.4*	ND	ND	ND	ND	ND	ND	**1.8**
Methiocarb	ug/L	*0.5*	ND	ND	ND	ND	ND	ND	**0.885**
Methomyl	ug/L	*0.52*	ND	ND	ND	ND	ND	ND	**0.944**
Oxamyl	ug/L	*50*	ND	ND	ND	ND	ND	ND	1.45
Azinphosmethyl	ug/L	*0.01*	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos	ug/L	*0.015*	0.0065	**0.15**	**0.018**	ND	**0.022**	**0.079**	**1.96**
Demeton-S	ug/L	*NA*	ND	ND	ND	ND	ND	ND	ND
Diazinon	ug/L	*0.1*	ND	ND	ND	ND	ND	ND	ND
Dichlorvos	ug/L	*0.085*	ND	ND	ND	ND	ND	ND	ND
Dimethoate	ug/L	*1*	ND	ND	ND	ND	ND	ND	ND
Disulfoton	ug/L	*0.05*	ND	ND	ND	ND	ND	ND	ND
Malathion	ug/L	*0.1*	ND	ND	ND	ND	ND	ND	ND
Methidathion	ug/L	*0.7*	ND	ND	ND	ND	ND	ND	ND
Molinate	ug/L	*13*	ND	ND	ND	ND	ND	ND	ND
Parathion, methyl	ug/L	*0.08*	ND	ND	ND	ND	ND	ND	ND
Phorate	ug/L	*0.7*	ND	ND	ND	ND	ND	ND	ND
Phosmet	ug/L	*140*	ND	ND	ND	ND	ND	ND	ND
Thiobencarb	ug/L	*3.1*	ND	ND	ND	ND	ND	0.121	ND
Glyphosate	ug/L	*700*	ND	ND	ND	ND	ND	2.57	ND
Paraquat	ug/L	*3.2*	ND	ND	ND	ND	ND	ND	ND
Trifluralin	ug/L	*5*	ND	ND	**21**	ND	ND	ND	ND

The metals identified in **APPENDIX D: MONITORING PARAMETERS** to be sampled were based on the historical sampling. Since 2006, the complete list of metals included within the General Order has been sampled at each of the Deer Creek, White River, and Tule River monitoring stations. Based on the results, many of the monitoring sites have not had exceedances at the time the samples were taken during the assessment monitoring schedule. **TABLE 3-3: HISTORICAL METAL QUALITATIVE RESULTS PER STATION (MAXIMUM)** identifies the maximum level measured during the period 2006 – 2013, of which no metals exceeded the numeric water quality trigger limits during this period.

TABLE 3-3: HISTORICAL METAL SAMPLE RESULTS PER STATION (MAXIMUM)

Metal	Units	Trigger Limit	Porter Slough Near Rd 192	Tule River at Road 144	Tule River at Road 92	Deer Creek at Road 248	Deer Creek at Road 176	Deer Creek at Road 120	White River at Road 208
Arsenic	ug/L	*10*	1.27	3.17	1.57	2.36	2.26	2	ND
Boron	ug/L	*1,000*	43.2	45.8	47.8	93.7	29.1	25.8	ND
Cadmium	ug/L	*5*	2.94	0.208	0.0996	0.085	0.084	0.147	ND
Copper	ug/L	*1,000*	10.1	11.1	14.2	3.82	15.1	26.2	ND
Lead	ug/L	*15*	0.92	1.32	1.33	5.43	1.13	0.697	ND
Nickel	ug/L	*100*	1.788	2.22	3.34	3.84	1.33	3.55	ND
Selenium	ug/L	*5*	0.199	0.451	1.28	0.299	0.345	0.154	ND
Zinc	ug/L	*5,000*	70.2	31.7	51.8	34.5	25.2	15.6	ND
Molybdenum	ug/L	*10*	2.28	2.12	1.88	8.15	5.47	6	ND

The TBWQC is not proposing to prioritize the sampling of any parameters at any monitoring station, but rather follow the criteria for the Core and Assessment monitoring described in **APPENDIX D**. Each of the watersheds are similar in land use, topography, and crops grown, therefore a distinctive monitoring schedule or testing of different parameters are not proposed for any monitoring station.

3-3 NOTIFICATION OF EXCEEDANCES

The TBWQC will provide surface water exceedance reports if monitoring results show an exceedance of a parameter of the Basin Plan water quality objective or trigger limit. For each surface water quality objective exceeded at a monitoring site, an Exceedance Report will be submitted via email to the designated RWQCB staff person within five (5) days of receiving the laboratory analytical report for an event. The Exceedance report will include:

- the estimated flow at the monitoring site
- photograph of the site
- description of exceedance
- actions to address exceedance by TBWQC

When the exceedance is a pesticide or toxicity, the TBWQC will follow up with an investigation of the pesticide use over the prior four weeks within the vicinity of the monitoring site. A summary of the investigation will be included within the Annual Monitoring Report.

3-4 MANAGEMENT PRACTICES IMPLEMENTATION

Over the course of monitoring when exceedances occur at a sample site more than one time over a three year period, the TBWQC is required to formulate a Management Plan. The Management Plan contains goals and actions designed to address the source of the exceedance specific to the site.

Management practices, outreach, and implementation are important components to the success of the plan. Based on the plan, management practices are recommended to growers within the area of the exceedance. If the management practices are applicable to a large area, the management practices identified during the Management Plan implementation and outreach will be recommended to growers of the TBWQC during annual outreach meetings.

The TBWQC will attempt to document the management practices of growers and identify which practices are more effective for the protection of surface water than others. New management practices are consistently being updated by growers within the TBWQC for more farm efficiency and to optimize yields. As the TBWQC continues the implementation of the General Order, the management practices of the growers will be better documented through the Farm Evaluation Plan, the Management Practice Evaluation Plan, and the Sediment and Erosion Assessment Report. Outreach under these separate programs will also help identify those practices protective of surface waters of the State.

SECTION 4 – QUALITY ASSURANCE PROJECT PLAN

4-1 PROJECT MANAGEMENT

The Quality Assurance Project Plan (QAPP) will be managed by the Tule Basin Water Quality Coalition. The general mode of programmatic management and decision-making for administrative and technical issues is through consensus discussions that take place at regular Advisory Committee meetings (monthly) and Board meetings (bi-monthly). The technical staff of the TBWQC will make recommendations to the Advisory Committee and Board for their consideration and approval.

A. Contact Information

The contact information for the Tule Basin Water Quality Coalition is:
2904 W. Main Street
Visalia, CA 93291
559-627-2948

B. Project Organization and Responsibility

The QAPP is managed and organized with the following persons responsible as follows:

Project Coordinator – R.L. Schafer, RCE
Technical Lead / Project Manager – David De Groot, RCE
Laboratory Analysis –To be determined (the TBWQC prepared a RFP and received proposals from three laboratories. The final decision on the laboratory to be used will occur in Fall 2014)

The TBWQC Project staff will coordinate sample collection by a contract laboratory. A laboratory certified by the California Environmental Laboratory Accreditation Program (ELAP) will perform analyses. The laboratory will meet the Quality Assurance and Control requirements identified in the General Order. The TBWQC staff will include qualified resource analysts and engineers responsible for preliminary review of reports and report preparation. The TBWQC staff will review laboratory reports for completeness prior to submittal to the RWQCB.

C. Training and Certification

<u>Recommended Training for TBWQC Field Personnel</u>

Proper training of field personnel represents a critical aspect of quality control. Field technicians will be trained to conduct a wide variety of activities using standardized protocols to ensure comparability in data collection among crews and across geographic areas. In addition to in-field training and certification/documentation of such training, all crews will be evaluated on their field performance during field QA audits conducted by the TBWQC QA Program staff. The conducting of such field performance audits is recommended every two years, or more often if necessary. If deficiencies of a crew are noted during this QA audit, they will be documented and remedied prior to the continuation of field sampling. This can be accomplished by additional training or by changing crew composition, but verification of correction of any deficiency must be documented in writing prior to the resumption of further sample collection activities.

Safety Guidelines for Field Activities

Personnel conducting field activities for TBWQC will be well-versed in standard safety procedures for such activities. It is the responsibility of the QA officer or Safety Officer or supervisor, or designee, to ensure that safety training is mandatory for all field personnel, and that such training is documented in training certifications/records maintained and updated for all participating TBWQC field staff. The TBWQC entity conducting field activities is responsible for preparing and maintaining a current Field Safety Manual (FSM) in compliance with the Occupational Safety and Health Administration (OSHA). The FSM will be readily available to field personnel, including all appropriate Material Safety Data Sheets (MSDS) information for chemicals that may need to be used while in the field. Proper procedures for safe storage ,handling, shipping, transport, and disposal of chemicals and other materials will be followed at all times in the field; each chemical or field sample will be treated as a potential health hazard and good field safety practices will be implemented accordingly.

Recommended Training and Proficiency Documentation for TBWQC Personnel

To ensure samples are analyzed in a consistent manner, the TBWQC contracted laboratory shall perform the following:

- Key laboratory personnel shall participate in an orientation session conducted during an initial site visit or via communications with appropriate TBWQC staff. The purpose of such orientation session is to familiarize key laboratory personnel with the TBWQC QAPP and the specific QA/QC program for the analyses being conducted by the laboratory for the TBWQC.
- Meetings, whether by phone or in person, shall be held with the laboratory at regular intervals to continually review QA/QC procedures, and to make recommendations for future revisions to update the TBWQC QAPP. The more frequent interactions with respective laboratory staff, the better the understanding of, and communication of, key issues or correction of problems.
- Minimum proficiency requirements that analytical lab staff must meet shall be established and documented, and updated as necessary. Documentation of required expertise and on-going training for laboratory staff is required. Documentation of each analyst or technician must be provided regarding their proficiency in using analytical equipment and conducting analytical protocols, as well as documenting proficient in-house general lab procedures, such as glassware cleaning, sample preparation and processing, hazardous materials handling, storage, disposal, etc. All laboratory staff must demonstrate proficiency in all the required laboratory activities that they conduct, as certified by the Laboratory QA Officer, or designee, documented in training records developed and maintained for lab personnel.

Laboratory Health and Safety Requirements

The laboratory shall be operated and maintained in a safe manner, and provide a working environment for staff that has as its top priority the implementation of all measures necessary for the highest level of protection of employee health and safety. Personnel in the laboratory performing analyses for the TBWQC shall be well-versed in good laboratory practices, including standard safety procedures. It is the responsibility of the particular participating laboratory QA Officer, laboratory manager and/or supervisor to ensure that safety training is mandatory for all laboratory personnel, and that such training is documented in training certifications/records maintained and updated for all participating laboratory staff. The

laboratory shall be responsible for maintaining a current Laboratory Safety Manual (LSM) in compliance with Occupational Safety and Health Administration (OSHA), or equivalent state or local regulations. The LSM will be readily available to, and readily understood by, all laboratory personnel, including all appropriate Material Safety Data Sheets (MSDS) information. Proper procedures for safe storage, handling and disposal of chemicals will be followed at all times; each chemical will be treated as a potential health hazard and good laboratory practices will be implemented accordingly.

D. Documentation and Records

All field data gathered shall be recorded on standardized field data entry forms (all sites must have this form completed), for Water Quality (sites which require any analyses to be conducted on water samples), and for Sediment (sites which require any analyses to be conducted on sediment samples). These forms and this process will be provided by the contract laboratory performing the sampling.

All laboratory analysis reports will be submitted by the laboratory to the TBWQC for record.

- These data records are recommended to be maintained for at least eight years in files of the TBWQC.
- Data may be reported to the TBWQC in either hard copy or electronic format
- A digital copy of all data shall be kept on file at the TBWQC office for review by the TBWQC Program QA staff during annual performance reviews.
- Records of the documents can be made available to RWQCB staff upon request.

4-2 FIELD PROCEDURES

Sampling generally occurs over one or two days per event, with one event occurring each month.

A. Sample Collection Methods

Surface water and sediment samples will be collected for chemical analyses and biological toxicity testing. A complete list of the parameters to be sampled is provided in **APPENDIX D: MONITORING PARAMETERS**.

Required field procedures will be used by TBWQC staff or the contracting laboratory conducting the field sampling as noted. All sample collection, custody, and documentation procedures will be in accordance with the requirements of the certified laboratory.

Field Sampling Collection Method

Proper sampling techniques must be used to ensure that a sample is representative of the flow in the cross section. Samples should be collected using a standard multi-vertical depth integrating method to obtain the most representative isokinetic sample possible. By using this method the water entering the sampler is hydrodynamically equivalent to the portion of the stream being sampled. Abbreviated sampling methods (i.e., weighted-bottle or dip sample) can also be used for collecting a representative sample of the stream chemistry.

Sample Storage, Preservation and Holding Times

Sample containers must be pre-cleaned and certified to be free of contamination according to the United States Environmental Protection Agency (U.S. EPA) specification for the appropriate methods.

Sample Identification Protocol

All samples must be identified with a unique number to ensure that results are properly reported and interpreted. Samples must be identified such that the site, sampling location, matrix, sampling equipment and sample type (i.e., normal field sample or QC sample) can be distinguished by a data reviewer or user. All bottles collected from a site are considered a single sample and share a common site ID and sample time. Although all bottles are considered a single sample, no volumes are homogenized.

Field Measurements

For all water bodies sampled, water quality parameters including pH, specific conductance, dissolved oxygen, and temperature must be measured prior to collecting samples for laboratory analyses.

QC Sample Collection

Equipment blanks, field duplicates, and matrix spikes must be collected at a frequency of about 1 per 20 normal samples. Matrix spikes will be collected as normal samples and will be spiked at the laboratory prior to sample preparation. Field duplicates and samples for matrix spike analysis shall be filled simultaneously.

Field Instrument Calibration

Routine field instrument calibration must be performed at least once per day prior to instrument use to ensure instruments are operating properly and producing accurate and reliable data. Calibration should be performed at a frequency recommended by the manufacturer.

Decontamination Procedures

All field and sampling equipment that will contact samples must be decontaminated after each use in a designated area.

Field Documentation

All field activities must be adequately and consistently documented to ensure defensibility of any data used for decision-making and to support data interpretation. Pertinent field information, including (as applicable), the width, depth, flow rate of the stream, the surface water condition, and location of the stream must be recorded on the field sheets.

B. Sample Custody and Documentation

Sample custody must be traceable from the time of sample collection until results are reported. Sample custody procedures provide a mechanism for documenting information related to sample collection and handling.

Documentation Procedures

A field activity coordinator must be responsible for ensuring that the field sampling team

adheres to proper custody and documentation procedures. A master sample logbook or field datasheets shall be maintained for all samples collected during each sampling event.

Chain-of-Custody Procedures and Form

A chain-of-custody (COC) form must be completed after sample collection and prior to sample shipment or release. The COC form, sample labels, and field documentation must be cross checked to verify sample identification, type of analyses, number of containers, sample volume, preservatives, and type of containers.

Sample Shipments and Handling

All sample shipments are accompanied with the COC form, which identifies the contents. The original COC form shall accompany the shipment with a copy retained in the project file. All shipping containers must be secured with COC seals for transportation to the laboratory. The samples must be placed in ice to maintain a temperature of 24 degrees C. The ice must be sealed in zip lock bags and be approximately 2 inches deep at the top and bottom of the cooler. Samples must be shipped to the contract laboratories according to Department of Transportation standards.

Laboratory Custody Procedures

The following sample control activities must be conducted at the laboratory:

- Initial sample log-in and verification of samples received with the COC form;
- Documentation of any discrepancies noted during login on the COC;
- Initiate internal laboratory custody procedures;
- Verify sample preservation (e.g., temperature);
- Notify the project coordinator if any problems or discrepancies are identified; proper sample storage, including daily refrigerator temperature monitoring and sample security.

4-3 LABORATORY ANALYTICAL METHOD REQUIREMENTS

Required laboratory procedures will be followed by the contracting laboratory conducting the laboratory analysis. All laboratory procedures will be in accordance with the requirements as described in the General Order.

A. Chemistry Analysis

Pesticide analyses must be conducted on unfiltered (whole) fractions of the samples. Prior to the analysis of any environmental samples, the laboratory must have demonstrated the ability to meet the minimum performance requirements for each analytical method. Initial demonstration of laboratory capabilities includes the ability to meet the project specified quantitation limits (QL), the ability to generate acceptable precision and recoveries, and other analytical and quality control parameters as stated in the Guide. Analytical methods used for chemistry analyses must follow a published method and document the procedure for sample analyses in a laboratory standard operation procedure (SOP) for review and approval.

B. Toxicity Testing

Aquatic Toxicity

The ambient water toxicity test results must provide a reliable qualitative prediction of impacts to in-stream biota. At a minimum the toxicity testing will need to include the 4-day static renewal procedures described in Method for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (US EPA, 2002).

Sediment Toxicity

Sediment Toxicity analyses shall be conducted according to EPA Method 600/R-99/064 during periods when there is adequate flow in the channel.

C. Detection and Quantitation Limits

Each laboratory performing analyses under this program must routinely conduct method detection limit (MDL) studies to document that the MDLs are less than the project specified QLs. If any analytes have MDLs that do not meet the project QLs, the following steps must be taken:

- Perform a new MDL study using concentrations sufficient to prove analyte quantitation at concentrations less than the project-specified QLs per the procedure for the Determination of the Method Detection Limit presented in Revision 1.1, 40 Code of Federal Regulations (CFR) 136, 1984.
- No samples may be analyzed until the issue has been resolved. MDL study results must be available for review during audits, data review, or as requested. Current MDL study results must be reported at the beginning of every project for review and inclusion in project files. An MDL is developed from seven aliquots of a standard containing all analytes of interest spiked at five times the expected MDL, which are taken through the analytical method sample processing steps. The data are then evaluated and used to calculate the MDL. If the calculated MDL is less than three times below the spiked concentration, another MDL study must be performed using a lower concentration.

Project Quantitation Limits

Laboratories generally establish QLs that are reported with the analytical results; these may be called reporting limits, detection limits, reporting detection limits, or other terms. These laboratory limits must be less than or equal to the project QLs. Project QLs must be lower than the proposed or existing numeric water quality objectives by the Regional Board. The laboratory must have documentation to support quantitation at the required levels.

The laboratory must report the analytical results between the MDL and QL. These results must be reported as numerical values and qualified as estimates. Reporting as "trace"- or "<QL" is not acceptable. Sample results less than MDLs will be reported only for GC/MS analyses if the mass spectral fingerprint can prove positive identification; these results must be qualified as estimated values by the laboratory.

D. Laboratory Standards and Reagents

All stock standards and reagents used for extraction and standard solutions must be tracked

through the laboratory. The preparation and use of all working standards must be recorded in bound laboratory notebooks that document standard tractability to U.S. EPA, A2LA or National Institute for Standards and Technology (NIST) criteria. Records must have sufficient detail to allow determination of the identity, concentration, and viability of the standards including any dilutions performed to obtain the working standard. Date of preparation, analyte or mixture, concentration, name of preparer, lot or cylinder number, and expiration date, if applicable, must be recorded on each working standard.

E. Sample Preparation Methods

Surface water and sediments samples will be prepared in solvent or via other extraction techniques prior to sample analyses. All procedures must follow a published method. The sample preparation procedure must be documented and included in the monitoring plan for review and approval.

4-4 QUALITY CONTROL REQUIREMENTS

The types of quality control assessments required in the monitoring program are discussed below. Detailed procedures for preparation and analysis of quality control samples must be provided in the analytical method documents or Standard Operating Procedures (SOP) by the analytical laboratories for approval.

A. Internal Quality Control

Internal quality control (QC) is achieved by collecting and/or analyzing a series of duplicate, blank, spike, and spike duplicate samples to ensure that analytical results are within the specified QC objectives. The QC sample results are used to quantify precision and accuracy and identify any problem or limitation in the associated sample results. The internal QC components of a sampling and analyses program will ensure that data of known quality is produced and documented. The internal QC samples, frequency, and corrective action must meet the minimum requirements presented in the following sections.

B. Field Quality Control Samples

Field QC samples are used to assess the influence of sampling procedures and equipment used in sampling. They are also used to characterize matrix heterogeneity. For basic water quality analyses, quality control samples to be prepared in the field will consist of equipment blanks, field duplicates, and matrix spikes {when applicable). The number of field duplicates and field blanks are set to achieve an overall rate of at least 5% of all analyses for a particular parameter. The external QA samples are rotated among sites and events to achieve the overall rate of 5% field duplicate samples and 5% equipment blanks {as appropriate for specific analyses).

- Equipment Blanks: equipment blanks will be collected and analyzed for all analytes of interest along with the associated environmental samples. Equipment blanks will consist of laboratory-prepared blank water {certified contaminate free) processed through the sampling equipment using the same procedures used for environmental samples.

- Field Duplicates: Field duplicates will be collected at the rate of one per sampling event, and analyzed along with the associated environmental samples. Field duplicates will be collected at the same time as environmental samples or of two grab samples collected in rapid succession. If the Relative Percent Difference (RPD) of field duplicate results is greater than 25% and the absolute difference is greater than the Reporting Limit, both samples should be reanalyzed.
- Matrix Spikes and Matrix Spike Duplicates: Matrix spikes and matrix spike duplicates will be analyzed at the rate of one pair per sample batch. Matrix spike samples are collected at the same time as the environmental samples and are spiked at the laboratory.

C. Laboratory Quality Control

For basic water quality analyses, quality control samples prepared in the contract laboratory will typically consist of method blanks, laboratory control samples, laboratory duplicates, and surrogate added to each sample (*organic analysis*).

- Method Blanks: Method blanks will be prepared and analyzed by the contract laboratory with each batch of samples. If any analyte is detected in the blank, the blank and the associated samples must be re-extracted and re-analyzed.
- Laboratory Control Samples and Surrogate: Laboratory control samples {LCS) will be analyzed at the rate of one per sample batch. Surrogate may be added to samples for organic analyses. Laboratory acceptance criteria must be submitted to Regional Board staff for review and approval as part of the development and approval of the monitoring

4-5 INSTRUMENTATION AND EQUIPMENT PREVENTATIVE MAINTENANCE

A. Sample Equipment Cleaning Procedures

Equipment used for sample collection must be cleaned according to the specific procedures documented in each sampling SOP provided by the contracted laboratory.

B. Analytical Instrument and Equipment Testing Procedures

Testing, inspection, maintenance of analytical equipment used by the contract laboratory, and corrective actions shall be documented in the quality assurance manuals for each analyzing laboratory. A Laboratory Quality Assurance Manual must be submitted to **TBWQC Program staff** for review and record prior to start of sampling and analyses.

C. Instrument Calibration and Testing

All instrumentation will be calibrated prior to each analytical batch as specified in the contract Laboratory Quality Assurance Manual. Manufacturer recommendations will be followed and each calibration and maintenance procedure will be documented.

Analytical Procedures and Calibration

The analytical methods and calibration procedures used for analyses of samples collected under the TBWQC monitoring program shall follow the general guidance of any of the

following methods:

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA-600/4-85 054)
- *U.S. EPA Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79- 020, third edition, 1983)
- *Methods for Determination of Organic Compounds in Drinking Water* (EPA- 600/4-88/039)
- *Standard Methods for the Examination of Water and Wastewater*
- *USEPA.* 2002. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012*
- *USEPA.* 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C.EPA-821-R-02-013.*
- *USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.*

Only linear calibration with either an average response factor or a linear regression is acceptable for organic analyses. Non-linear calibration is not allowed since using this calibration option creates a potential for poor quantitation or biased concentrations of compounds at low or high concentrations (near the high and low ends of the calibration range). The laboratory shall prepare an initial 5-point calibration curve, where the low level standard concentration is less than or equal to the analyte quantitation limit.

4-6 DATA MANAGEMENT

Copies of field logs, a copy of COC forms, original preliminary and final lab reports, and electronic media reports will be kept by the TBWQC for review by the Regional Board Staff. The contract laboratory shall retain original COC forms. The contract laboratory will retain copies of the preliminary and the TBWQC will retain copies of the final data reports. Concentrations of chemicals and toxicity endpoints, and all numerical biological parameters shall be calculated as described in the referenced method document for each analyte or parameter, or laboratory operating procedure.

A. Database Management

The data generated shall be converted to a standard database template format using the most recent ILRP database lookup lists for data entry. Required formatting and business rules for field, chemistry, and toxicity data are detailed within their respective template instruction manuals, maintained with the Central Valley Regional Data Center to ensure compatibility with the California Environmental Data Exchange Network. After data entry or data transfer procedures to the templates are completed for each sample event, data should be inspected for data transcription errors, and corrected as appropriate. After the final QA checks for errors are completed, the data should be submitted electronically to the ILRP staff of the RWQCB. Following is a summary of the required templates to be used for data management:

Field Data Template

The contract laboratory and TBWQC Staff will input all site visit information and field measurement results into the field data template. Site visit information (location and habitat), must be recorded for any site visit conducted to comply with the requirement of the General Order, including events when a site is dry.

Chemistry Data Template

The contract laboratory will input all chemistry analysis and associated quality control information into the chemistry data template.

Toxicity Data Template

The contract laboratory will input all toxicity analysis and associated quality control information, with the exception of reference toxicity analyses, into the toxicity data template.

Electronic Qualilty Assurance Program Plan (eQAPP)

The eQAPP is a digital worksheet containing the quality control requirements for each analyte and method. The eQAPP worksheet will include references for applicable codes, CEDEN retrieval information, and other project specific information. The TBWQC will be responsible to update the eQAPP with the most up to date requirements and codes.

Online Data Checker

Prior to submitting the templates with the data, the contract laboratory will submit the digital templates to the ILRP online data checker. This tool will be used solely for identifying any errors with the data input or templates prior to submitting the final version to the TBWQC and the RWQCB. A copy of the online data checker report accepting the digital templates will be provided by the contract laboratory to the TBWQC with each submittal.

B. Data Assessment Procedures

Data must be consistently assessed and documented to determine whether project quality assurance objectives (QAOs) have been met, quantitatively assess data quality and identify potential limitations on data use. Assessment and compliance with quality control procedures will be undertaken during the data collection phase of the project.

Training and Certification

All staff performing field or laboratory procedures shall receive training to ensure that the work is conducted correctly and safely. At a minimum, all staff shall be familiar with the field guidelines and procedures and the laboratory SOP included in the project QAPP. All work shall be performed under the supervision of experienced staff, field managers, laboratory managers or other qualified individuals. A copy of the staffs' training records must be maintained in each specific project file.

Data to be Included in Reports

For each sampling event, the laboratory shall provide the TBWQC with copies of the field data sheets (relevant pages of field logs) and copies of the COC forms for all samples submitted for analysis. At minimum, the following sample-specific information must be provided for each sampling:

- Sample Identification
- Monitoring location
- Sample type, e.g. grab or composite type (Cross-sectional, flow-proportional, etc.)
- QC sample type and frequency
- Date and time(s) of sample collection
- Requested analyses (specific parameters or method references)

Results of samples collected and all laboratory QC samples (calibrations, blanks, surrogate laboratory spikes, matrix spikes, reference materials, etc.) and the identification of each analytical sample batch.

Reporting Format

All results meeting data quality objectives and results having satisfactory explanations for deviations from objectives shall be reported in the Laboratory Final Report. The final results shall include the results of all field and laboratory quality control samples.

4-7 DATA VALIDATION

A. Laboratory Data Review, Verification, and Reporting

The laboratory quality assurance manual must be used to accept, reject or qualify the data generated by the laboratory. The laboratory management will be responsible for validating the data generated by the laboratory. The laboratory personnel must verify that the measurement process was "in control" (i.e., all specified data quality objectives were met or acceptable deviations explained) for each batch of samples before proceeding with analyses of a subsequent batch. In addition, each laboratory will establish a system for detecting and reducing transcription and/or calculation errors prior to reporting data. Only data which have met data quality objectives, or data, which have acceptable deviations explained, will be submitted by the laboratory. When QA requirements have not been met, the samples will be reanalyzed when possible and only the results of the reanalysis will be submitted, provided they are acceptable.

B. Data System Audits

The Regional Board staff may audit the laboratory conducting the sampling and the sample analyses for this program.

Technical System Audit

The electronic data submitted will undergo a series of reviews for adherence to the required formatting and business rules. The data will also be reviewed for the required quality control elements. The TBWQC will be notified by RWQCB staff of modification made to the data set to successfully load the data. If significant changes are found to be needed, the RWQCB will return the data to the TBWQC for revision. Once the data sets are corrected, the data will be uploaded into the ILRP Comparable database and undergo a final set of reviews to ensure completeness. After reviewed for completeness, the data will be added to CEDEN for public access.

Performance Evaluation Audits

Performance Evaluation audits quantitatively assess the data produced by a measurement system. Performing an evaluation audit involves submitting certified samples for each analytical method. The matrix standards are selected to reflect the concentration range expected for the sampling program. Any problem associated with performance evaluation of samples must be evaluated to determine the influence on field samples analyzed during the same time period. The laboratory must provide a written response to any PE sample result deficiencies.

Field Technical Audits

The laboratory should routinely observe field operations to ensure consistency and compliance with sampling specifications presented in this document. An audit checklist should document field observations and activities.

SECTION 5 - REFERENCES

1 APHA, AWWA, and WEF 1997. Standard Methods for the Examination of Water and Wastewater, 19th Edition. American Public Health Association (APHA), American Waterworks Association (AWWA), and Water Environment Association (WEF). Washington, DC.

2 ASTM. 1995. Standard guide for conducting sediment toxicity tests with freshwater invertebrates. ASTM 1995 Annual Book of Standards Vol. 11.04, E1706-95. American Society for Testing and Materials (ASTM), Philadelphia, PA.

3 Keith L.H. 1991. Environmental Sampling and Analysis: A Practical Guide. Lewis Publishers, Chelsea, Ml, 143 pp.

4 Puckett, M. 2002. Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program ("SWAMP"). California Department of Fish and Game, Monterey, CA. Prepared for the State Water Resources Control Board, Sacramento, CA. 145 pages plus Appendices.

5 Shelton, L.R., 1994, Field guide for collecting and processing stream-water samples for the National Water-Quality Assessment program: U.S. Geological Survey Open-File Report 94-455, 44 p.

6 Stanley, T. W., and S. S. Verner. 1985. The U. S. Environmental Protection Agency's quality assurance program. pp 12-19 In: J. K. Taylor and T.W. Stanley (eds.). Quality Assurance for Environmental Measurements, ASTM STP 867. American Society for Testing and Materials, Philadelphia, Pennsylvania.

7 SWRCB. 2000. Plan for implementing a comprehensive program for monitoring ambient surface and groundwater quality. Legislative Report by the State Water Resources Control Board. 49 pp.

8 USEPA. 1979a. Handbook for Analytical Quality Control in Water and Wastewater Laboratories. U.S. Environmental Protection Agency (USEPA). EPA 600-4-79-019.

9 USEPA. 1979b. Methods for Chemical Analysis of Water and Wastes (EPA 600-4-79- 020). U.S. Environmental Protection Agency (USEPA).

10 USEPA. 1983a. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020,3rd ed.

11 USEPA. 1983b. Methods for Chemical Analysis of Water and Waste, revised March 1983. U.S. Environmental Protection Agency (USEPA).

12 USEPA. 1986. Determination of Total Organic Carbon in Sediment (Kahn Method). U.S. Environmental Protection Agency (USEPA), Region II.

13 USEPA.1988. Methods for Determination of Organic Compounds in Drinking Water (EPA-600/4-88/039)

14 USEPA. 1993a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fourth Edition, EPA-600/4-90-027F. U.S. Environmental Protection Agency (USEPA), Office of Research and Development, Cincinnati, OH.

15 USEPA. 1993b. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993 EPA/600/R-93/100.

16 USEPA. 1994a. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.

17 USEPA 1994b. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA 600/4-91-002). U.S. Environmental Protection Agency (USEPA), Office of Research and Development. July 1994.

18 USEPA. 1994c. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. EPA-600/R-94/024. U.S. Environmental Protection Agency (USEPA), Office of Research and Development, Washington DC.

19 USEPA. 1994d. Methods for the Determination of Metals in Environmental Samples, Supplement 1, May 1994 EPA/600/R-94/111.

20 USEPA. 1997. Test methods for Evaluating Solid Waste. SW846, 3rd edition. Update III (1997).

21 USEPA 2001. Laboratory Documentation Requirements for Data Evaluation (R9QA/004.1)

22 USEPA. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012

23 USEPA. 2002b. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-01

24 United States Geological Survey National Hydrography Dataset - http://nhd.usgs.gov/

Attachment A
TBWQC Irrigation District and Water Company Map

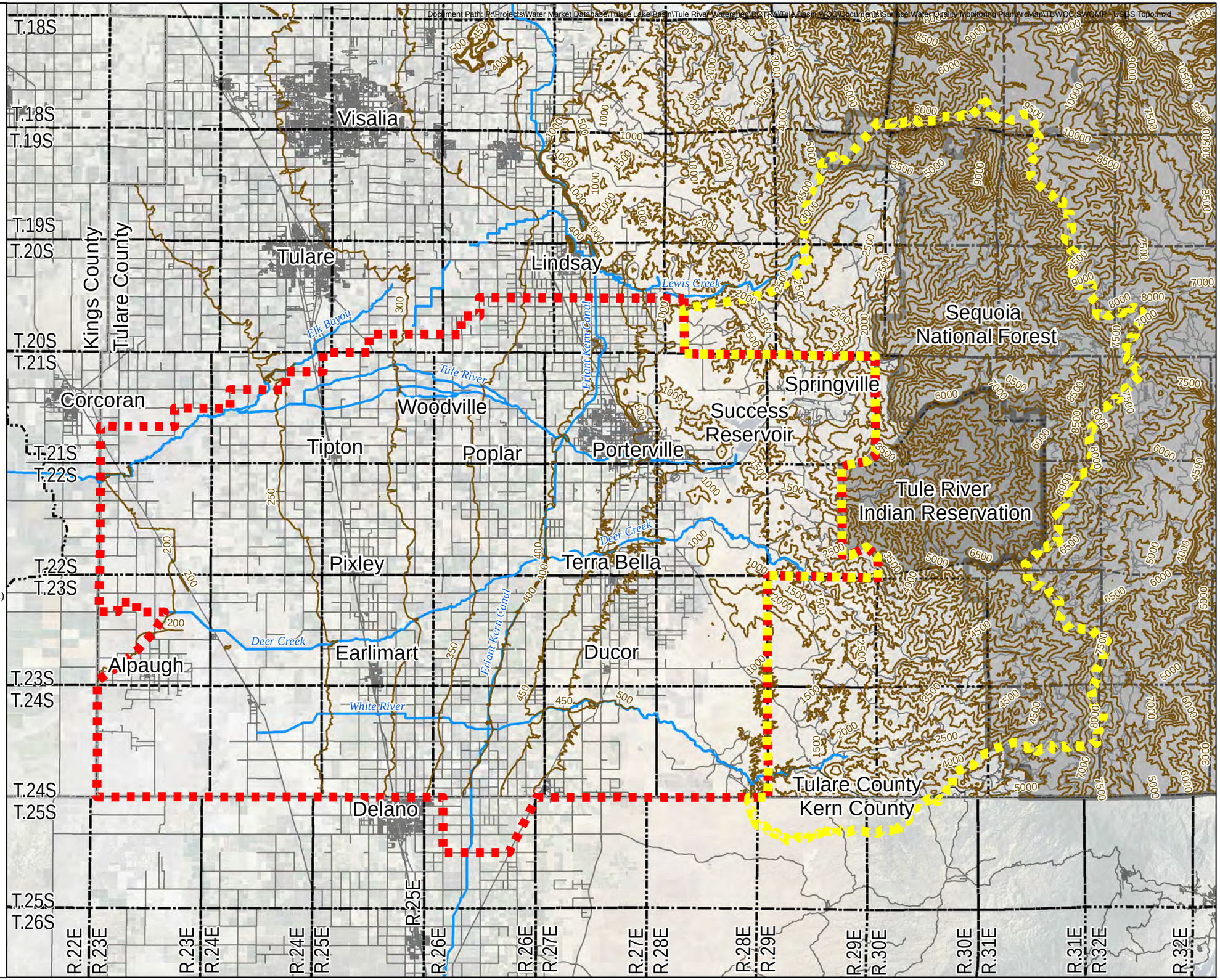
Legend

- TBWQC Boundary (599,879 Ac.)
- Supplemental TBWQC Upper Watershed Boundary (347,079 Ac.)
- Friant Kern
- White River
- Tule River
- Elk Bayou
- Lewis Creek
- Deer Creek
- Homeland Canal
- National Parks/Forests
- Tule River Indian Reservation
- VANDALIA I.D.
- TERRA BELLA I.D.
- TEA POT DOME W.D.
- SAUCELITO I.D.
- RANCHO TERRA BELLA
- RAG GULCH W.D.
- PORTERVILLE I.D.
- PIXLEY I.D.
- LOWER TULE INDEPENDENT DITCH COMPANY
- LOWER TULE RIVER I.D.
- LINDSAY-STRATHMORE I.D.
- LINDMORE I.D.
- KERN-TULARE W.D.
- HOPE W.D.
- DELANO-EARLIMART I.D.
- ATWELL ISLAND W.D.
- ANGIOLA W.D.
- ALPAUGH I.D.
- County Boundary
- Townships
- Streets

N

1 inch = 5 miles

Attachment B
TBWQC USGS Topographic Map



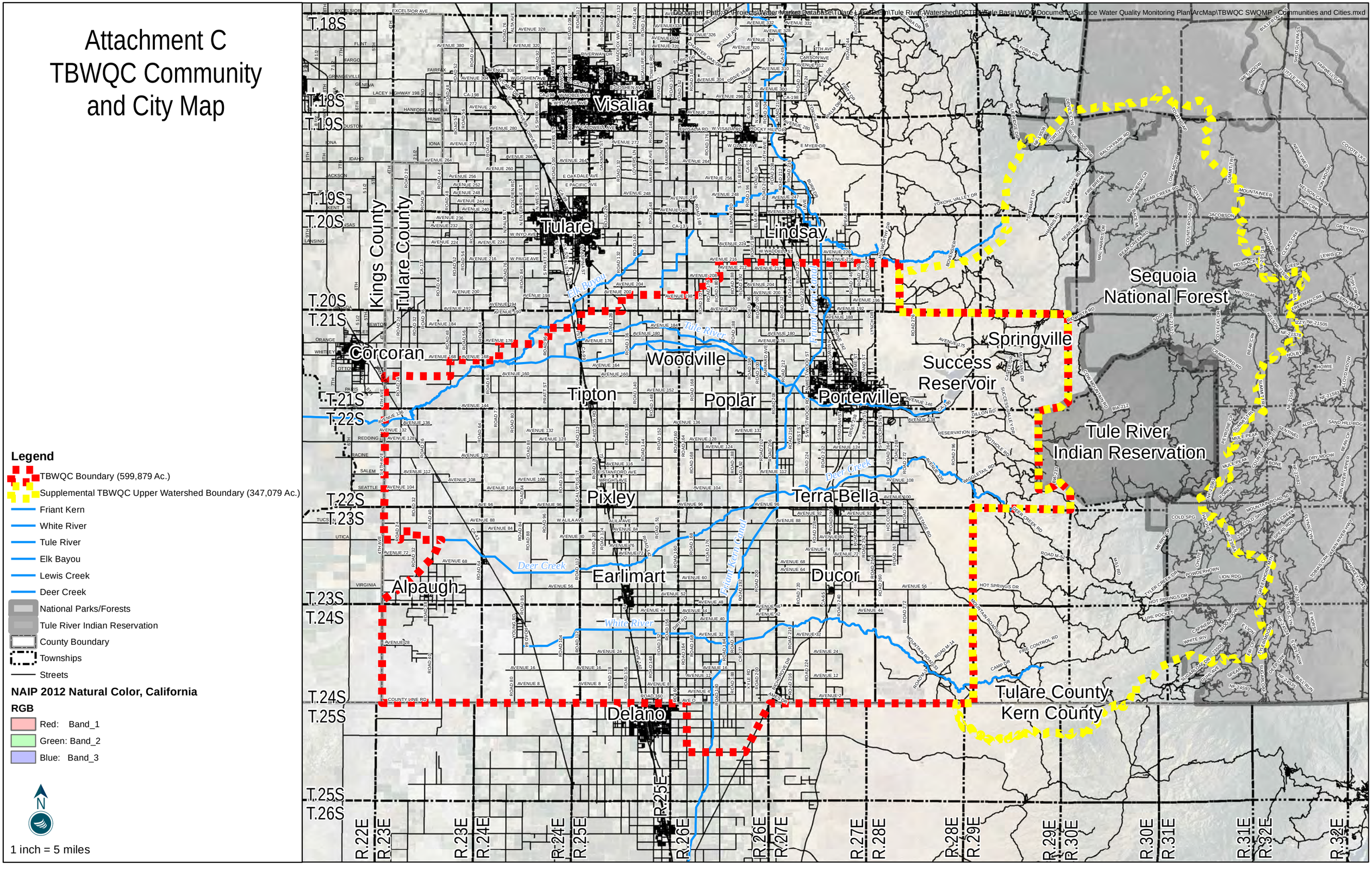
Legend

- Supplemental TBWQC Upper Watershed Boundary (347,079 Ac.)
- TBWQC Boundary (599,879 Ac.)
- 500' Contour - Upstream
- 50' Contour - Valley Floor
- Friant Kern
- White River
- Tule River
- Elk Bayou
- Lewis Creek
- Deer Creek
- National Parks/Forests
- Tule River Indian Reservation
- County Boundary
- Townships
- Streets

N

1 inch = 5 miles

Attachment C
TBWQC Community and City Map



Legend

- TBWQC Boundary (599,879 Ac.)
- Supplemental TBWQC Upper Watershed Boundary (347,079 Ac.)
- Friant Kern
- White River
- Tule River
- Elk Bayou
- Lewis Creek
- Deer Creek
- National Parks/Forests
- Tule River Indian Reservation
- County Boundary
- Townships
- Streets

NAIP 2012 Natural Color, California

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3

N

1 inch = 5 miles

Attachment D
TBWQC Crop Land Use Map
(2007 DWR Data)

Legend

- TBWQC Boundary (599,879 Ac.)
- Supplemental TBWQC Upper Watershed Boundary (347,079 Ac.)
- Dairies in TBWQC Boundary(110 Dairies)
- Idle(11,578.5ac)
- Citrus And Subtropical(54,779.5ac)
- Deciduous Fruits And Nuts(59,647.0ac)
- Field Crops(53,215.8ac)
- Grain and Hay Crops(84,524.0ac)
- Pasture(49,176.3ac)
- Truck and Berry Crops(1,749.8ac)
- Barren(49.6ac)
- Riparian Vegetation(1,598.1ac)
- Incidental to Agriculture(15,350.2ac)
- Vineyard(35,892.5ac)
- Native Vegetation(165,776.9ac)
- Urban, Commercial, Industrial, Residential(35,892.5)
- Water Surface(9,747.5ac)
- Friant Kern
- White River
- Tule River
- Elk Bayou
- Lewis Creek
- Deer Creek
- National Parks/Forests
- Tule River Indian Reservation
- County Boundary
- Townships
- Streets

N

1 inch = 5 miles

Attachment E
TBWQC
Land Use Map
(FMMP Data 2010)

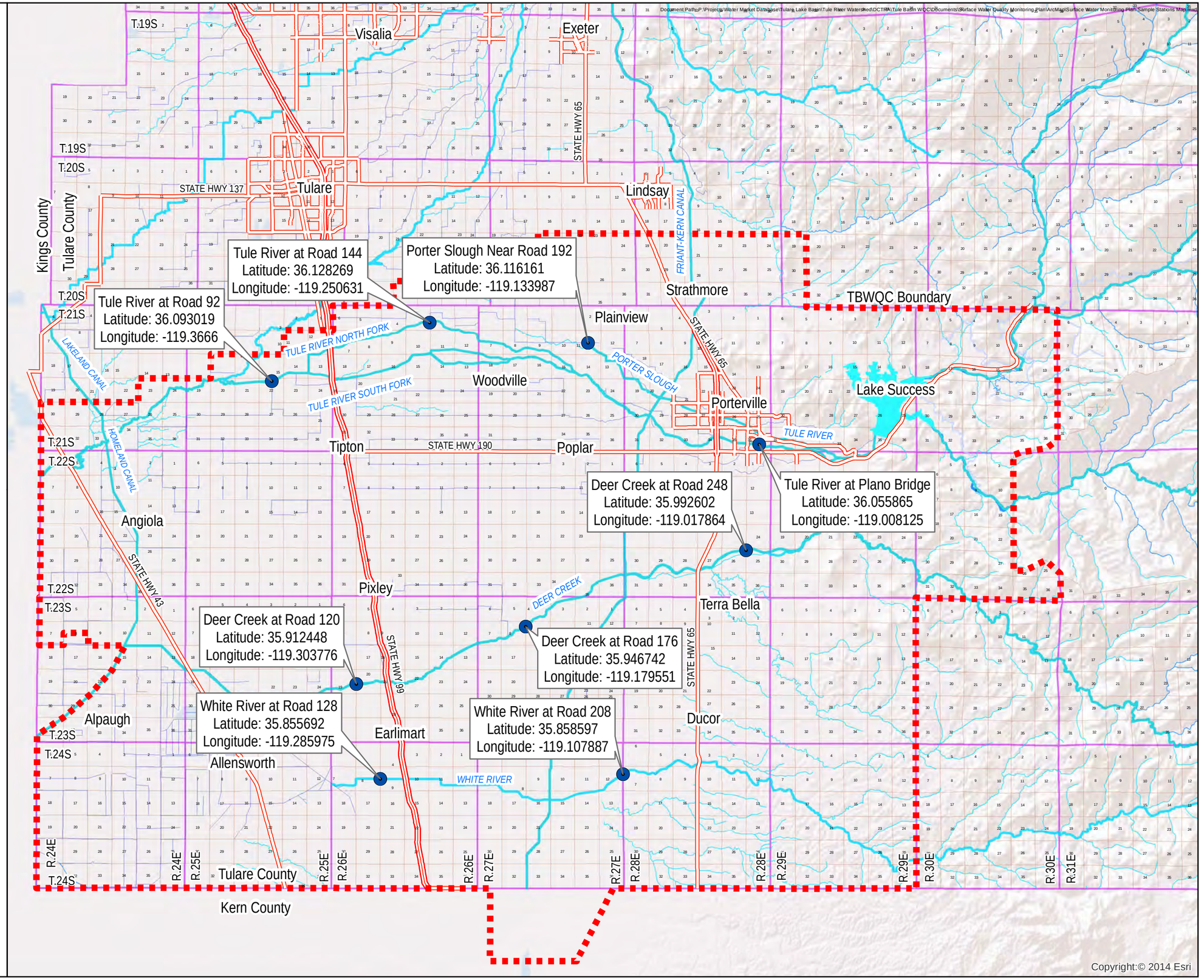
Legend

- TBWQC Boundary (599,879 Ac.)
- Supplemental TBWQC Upper Watershed Boundary (347,079 Ac.)
- Other Land (145,349.8 Ac.)
- Water (2,561.1 Ac.)
- Prime Farmland (179,817.5 Ac.)
- Farmland of Statewide Importance (164,585.3 Ac.)
- Unique Farmland (4,965.6 Ac.)
- Farmland of Local Importance (93,554.1 Ac.)
- Grazing Land(214,147.8 Ac.)
- Confined Animal Land (11,987.4 Ac.)
- Natural Vegetation (95,461.4 Ac.)
- Semi-Agricultural and Rural Commercial Land (2,746.1 Ac.)
- Vacant or Disturbed (5,093.0 Ac.)
- Rurual Residential (9,314.7 Ac.)
- Urban and Built-Up Land (17,225.0 Ac.)
- County Boundary
- Townships
- National Parks/Forests
- Tule River Indian Reservation
- Friant Kern
- White River
- Tule River
- Elk Bayou
- Lewis Creek
- Deer Creek
- Streets

N

1 inch = 5 miles

Attachment F
TBWQC Monitoring Stations



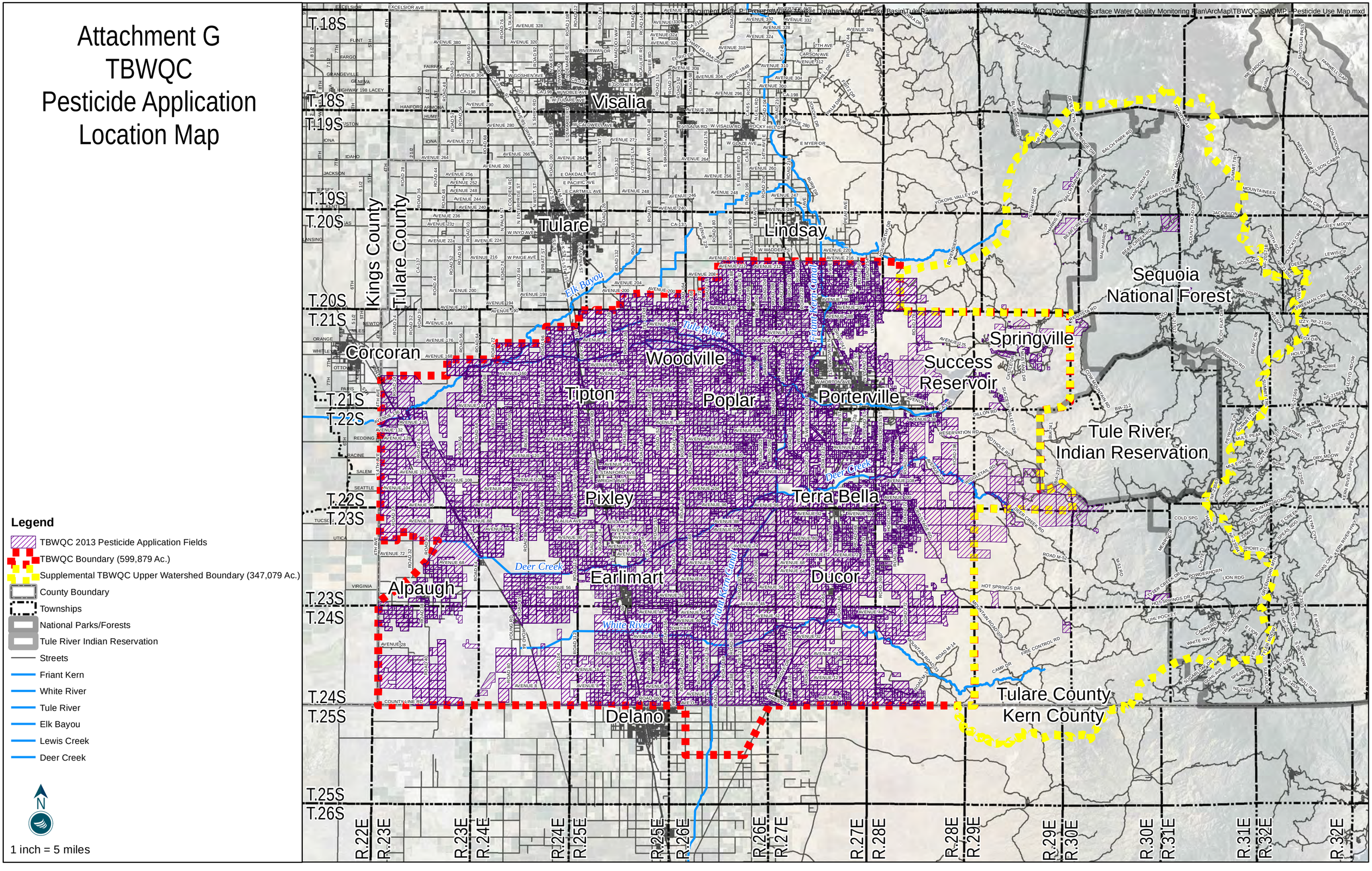
Legend

- Surface Water Sampling Locations
- TBWQC Boundary
- Sections
- Townships

N

1 in = 20,000 ft

Attachment G
TBWQC
Pesticide Application
Location Map



APPENDIX A: DEPARTMENT OF WATER RESOURCES LAND USE DEFINITIONS

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

STANDARD LAND USE LEGEND

For land use surveys conducted in 2005 through 2006

Land and Water Use Section

Statewide Planning Branch
Division of Planning

September 2005

STANDARD LAND USE LEGEND

Table of Contents

I. GENERAL

The minimum breakdown of land use is according to the class symbol. More detail is obtained by adding the subclass number to the class symbol, or by use of special condition symbols. Any or all of the following information can be delineated.

1. Types of agricultural, urban, or native land use
2. Specific crops
3. Multiple land use
4. Sources of water supply
5. Type of irrigation system

This legend is for land use surveys conducted in 2005 through 2006.

II. AGRICULTURAL CLASSES

The vast majority of crops grown in California are irrigated. Unless preceded with an "n" if it is non-irrigated, all agricultural classes are considered irrigated. (This statement is for the agricultural classes and does not apply to the other non-agricultural classes of semiagricultural, urban, or native.)

G - GRAIN AND HAY CROPS

1. Barley
2. Wheat
3. Oats
6. Miscellaneous grain and hay
7. Mixed grain and hay

R - RICE

1. Rice
2. Wild rice

F - FIELD CROPS

1. Cotton
2. Safflower
3. Flax
4. Hops
5. Sugar beets
6. Corn (field & sweet)
7. Grain sorghum
8. Sudan
9. Castor beans
10. Beans (dry)
11. Miscellaneous field
12. Sunflowers
13. Hybrid sorghum/sudan
14. Millet
15. Sugar cane

P - PASTURE

1. Alfalfa & alfalfa mixtures
2. Clover
3. Mixed pasture
4. Native Pasture
5. Induced high water table native pasture
6. Miscellaneous grasses
7. Turf farms
8. Bermuda grass
9. Rye grass
10. Klein grass

T - TRUCK, NURSERY AND BERRY CROPS

1. Artichokes
2. Asparagus
3. Beans (green)
4. Cole crops (mixture of 22-25)
6. Carrots
7. Celery
8. Lettuce (all types)
9. Melons, squash, and cucumbers (all types)
10. Onions and garlic
11. Peas
12. Potatoes
13. Sweet Potatoes
14. Spinach
15. Tomatoes (processing)
16. Flowers, nursery & Christmas tree farms
17. Mixed (four or more)
18. Miscellaneous truck
19. Bush berries
20. Strawberries
21. Peppers (chili, bell, etc.)
22. Broccol
23. Cabbage
24. Cauliflower
25. Brussels sprouts
26. Tomatoes (market)
27. Greenhouse

D - DECIDUOUS FRUITS AND NUTS

1. Apples
2. Apricots
3. Cherries
5. Peaches and nectarines
6. Pears
7. Plums
8. Prunes
9. Figs
10. Miscellaneous deciduous
11. Mixed deciduous
12. Almonds
13. Walnuts
14. Pistachios

C - CITRUS AND SUBTROPICAL

1. Grapefruit
2. Lemons
3. Oranges
4. Dates
5. Avocados
6. Olives
7. Miscellaneous subtropical fruits
8. Kiwis
9. Jojoba
10. Eucalyptus
11. Mixed subtropical fruits

V - VINEYARDS

1. Table grapes
2. Wine grapes
3. Raisin grapes

I - IDLE

(Precede with "n" in non-irrigated area, and must include subclass)

1. Land not cropped the current or previous crop season, but cropped within the past three years.
2. New lands being prepared for crop production.

III. SEMIAGRICULTURAL CLASS

(Do not precede with "n")

S - SEMIAGRICULTURAL & INCIDENTAL TO AGRICULTURE
(Must include subclass)

1. Farmsteads (includes a farm residence)
2. Livestock feed lot operations
3. Dairies
4. Poultry farms
5. Farmsteads (without a farm residence)

IV. URBAN CLASSES

(Do not precede with "n")

U - URBAN

Residential, commercial, and industrial (may be used alone when further breakdown is not required)

UR - RESIDENTIAL

Single and multiple family units, including trailer courts (may be used alone when further breakdown is not required)

1. Single family dwellings with lot sizes greater than 1 acre up to 5 acres (ranchettes, etc.)
2. Single family dwellings with a density of 1 unit/acre up to 8+ units/acre.
3. Multiple family (apartments, condos, townhouses, barracks, bungalows, duplexes, etc.)
4. Trailer courts

WATER USE FACTOR (% of total area irrigated - will be the second digit of UR Subclass when water factor is used)

1. 0% to 25% area irrigated
2. 26% to 50% area irrigated
3. 51% to 75% area irrigated
4. 76% or greater

Example: UR32 indicates multiple family with water use factor of 26% to 50% of area irrigated.

UC - COMMERCIAL

(May be used alone when further breakdown is not required)

1. Offices, retailers, etc.
2. Hotels
3. Motels
4. Recreation vehicle parking, camp sites
5. Institutions (hospitals, prisons, reformatories, asylums, etc., having a reasonably constant 24-hour resident population)
6. Schools (yards to be mapped separately if large enough)
7. Municipal auditoriums, theaters, churches, buildings and stands associated with race tracks, football stadiums, baseball parks, rodeo arenas, amusement parks, etc.
8. Miscellaneous high water use (to be used to indicate a high water use condition not covered by the above categories.)

UI - INDUSTRIAL

(May be used alone when further breakdown is not required)

1. Manufacturing, assembling, and general processing
2. Extractive industries (oil fields, rock quarries, gravel pits, rock and gravel processing plants, etc.)
3. Storage and distribution (warehouses, substations, railroad marshalling yards, tank farms, etc.)
6. Saw mills
7. Oil refineries
8. Paper mills
9. Meat packing plants
10. Steel and aluminum mills
11. Fruit and vegetable canneries and general food processing
12. Miscellaneous high water use (to be used to indicate a high water use condition not covered by other categories.)
13. Sewage treatment plant including ponds.
14. Waste accumulation sites (public dumps, sewage sludge sites, landfill and hazardous waste sites, etc.)
15. Wind farms, solar collector farms, etc.

UL - URBAN LANDSCAPE

(May be used alone when further breakdown is not required)

1. Lawn area - irrigated
2. Golf course - irrigated
3. Ornamental landscape (excluding lawns) - irrigated
4. Cemeteries - irrigated
5. Cemeteries - not irrigated

UV - VACANT

(May be used alone when further breakdown is not required)

1. Unpaved areas (vacant lots, graveled surfaces, play yards, developable open lands within urban areas, etc.)
3. Railroad right of way.
4. Paved areas (parking lots, paved roads, oiled surfaces, flood control channels, tennis court areas, auto sales lots, etc.)
6. Airport runways
7. Land in urban area that is not developable

V. NATIVE CLASSES

(Do not precede with "n")

NC - NATIVE CLASSES UNSEGREGATED

(May be used alone when further breakdown is not required)

NV - NATIVE VEGETATION

(May be used alone when further breakdown is not required)

1. Grass land
2. Light brush
3. Medium brush
4. Heavy brush
5. Brush and timber
6. Forest
7. Oak woodland

NR - RIPARIAN VEGETATION

(May be used alone when further breakdown is not required)

1. Marsh lands, tules and sedges
2. Natural high water table meadow
3. Trees, shrubs or other larger stream side or watercourse vegetation
4. Seasonal duck marsh, dry or only partially wet during summer
5. Permanent duck marsh, flooded during summer

NW - WATER SURFACE

(May be used alone when further breakdown is not required)

1. River or stream (natural fresh water channels)
2. Water channel (all sizes - ditches and canals - delivering water for irrigation and urban use - ie State Water Project, CVP, water district canals, etc.)
3. Water channel (all sizes - ditches and canals - for removing on-farm drainage water - surface runoff and subsurface drainage - ie Colusa drain, drainage ditches in Imperial)
4. Freshwater lake, reservoir, or pond (all sizes, includes ponds for stock, recreation, groundwater recharge, managed wetlands, on-farm storage, etc.)
5. Brackish and saline water (includes areas in estuaries, inland water bodies, the ocean, etc.)
6. Wastewater pond (dairy, sewage, cannery, winery, etc)
7. Paved water conveyance channels within urban areas (mainly for flood control)

NB - BARREN AND WASTELAND

(May be used alone when further breakdown is not required)

1. Dry stream channels
2. Mine Tailing
3. Barren land
4. Salt flats
5. Sand dunes

VI. UNCLASSIFIED

NS - NOT SURVEYED

Area within the investigation area that was not mapped.

E - ENTRY DENIED

Area within the investigation area that was not mapped because entry into the area was denied.

Z - OUTSIDE

Area outside of the study area.

VI. SPECIAL CONDITIONS, IRRIGATION TYPE, AND WATER SOURCE

When any of the following special conditions, type of irrigation, or source of water is used, a (-) should precede them. When more than one is used they should be used in the order stated above.

1. SPECIAL CONDITIONS
(only one can be used per parcel)

A - ABANDONED ORCHARDS AND VINEYARDS

Trees or vines must be in such a condition that renewal of cultural practices would restore economic production. Indicated by "A" following crop symbol.

Example: D1-A indicates an apple orchard previously irrigated but now abandoned.

B - BURNED OVER AREAS

Indicated by "B". The type and density of natural cover destroyed by fire is obtained by examination of aerial photo.

Example: NV7-B indicates oak grass land recently burned over.

C – GREEN CHOPPED

Grain or field crops harvested early for livestock feed

E – ECOSYSTEM RESTORATION

Native vegetation or riparian areas that have undergone restoration (used with NV and NR classes).

F - FALLOW LANDS

Land not cropped during the current crop season, but cropped during the previous crop season.

(1) If no crop residue is apparent or identifiable then the "F" symbol will follow the agricultural class symbol for the crop most representative of those grown in the area.
Example: T-F indicates fallow land within a truck crop area (with facilities for irrigation).

(2) If the crop residue is apparent and identifiable but is not from the current crop season covered by the survey then the field is considered fallow and mapped as the class of the crop residue.
Example: Surveyor found an old sugar beet residue not from current season. Land would be mapped F-F.

(3) If the crop residue is identifiable as that of a crop which was grown during the survey period, then map the field as though crop existed.
Example: Surveyor found carrot residue from current growing season. Land would be mapped T6.

G – COVER CROP

Indicates where grain, field, or pasture type crops have been planted for soil stabilization or for cover crops grown between rows of deciduous and subtropical trees and vines.

H – HARVESTED CROP

Indicates the identified crop was harvested at the time of the survey (used with truck, field, and grain crops).

K - FREEWAYS

The area within the freeway right of way.

Examples: UV-K indicates urban vacant, unsegregated, with a freeway special condition (all areas within the freeway right of way).

UV4-K indicates the urban vacant paved areas with a freeway special condition (the paved portion within the freeway right of way.)

UL3-K indicates irrigated urban landscape with a freeway special condition (irrigated landscape portion within the freeway right of way).

R - RECREATIONAL

To be used with urban residential, commercial, and vacant (R.V. parks and camp sites) within primarily a seasonal recreational area.

S - SEED CROP

Indicates any crop grown for seed.

Example: P1-S indicates irrigated alfalfa seed crop.

T - TILLED LANDS

Land prepared for immediate planting, or just newly planted, including the appearance of seed lines or unidentifiable tiny seedlings.

Example: T-T indicates tilled land (either prepared for planting or just planted) in a predominately truck crop area.

U – INTERPRETED LANDUSE

Indicates that the land use was determined using other means than visual field verification.

X - PARTIALLY IRRIGATED CROPS

Crops irrigated for only part of their normal irrigation season.

Example: P3-X indicates partially irrigated mixed pasture.

Y - YOUNG CROPS

Indicates the identified crop is at early stages of growth (used with non-bearing orchards and vineyards, and truck, field, and grain crops).

Example: C3-Y indicates young non-bearing irrigated oranges.

Z - RECLAMATION

Land being leached for the removal of harmful salts. This symbol will be used following either the "Idle" symbol or symbols of crops grown as a step in the reclamation process.

Example: I2-Z indicates new lands being leached in preparation for crop production.

2. TYPE OF IRRIGATION SYSTEM

C - Center Pivot Sprinkler
L - Linear Move Sprinkler
R - Side Roll Sprinkler
H - Hand Move Sprinkler
P - Permanent Sprinkler
T - Solid Set Sprinkler
F - Furrow Irrigation
B - Border Strip Irrigation
N - Basin Irrigation
W - Wild Flooding
S - Subirrigation
D - Surface Drip Irrigation
A - Buried Drip Irrigation
M - Micro Sprinkler
E - LEPA (Low Energy Precision Application)
U - Unknown or not mapped

As part of the map symbols these irrigation type letters required a circle around them so that they are not confused with the special condition letters.

Example: P1- Ⓑ indicates border strip irrigated alfalfa.

3. SOURCE OF IRRIGATION WATER

Water Source	Code
Surface water	1
Mixed surface & ground water	2
Ground water	3
Unknown source	4
Reclaimed	5
Recycled	6

Example: P3- Ⓑ1 indicates border strip irrigated pasture with surface water as the water source.

VIII. MULTIPLE LAND USE

INTERCROPPING

Used with orchards or vineyards when intercropped with some other crop class. Indicated by a fractional symbol, with the orchard or vineyard symbol appearing in the numerator.

Example: D12-Y/F10 indicates young almonds intercropped with dry beans.

DOUBLE CROPS

Used when two consecutive crops are grown in the survey season. The first crop is indicated by enclosed parenthesis.

Example: (G)F6 indicates irrigated grain followed by field corn.

TRIPLE CROPS

Used when three consecutive crops are grown in the survey season. The first and second crops are indicated by enclosed parenthesis.

Example: (T8)(T23)T8 indicates irrigated lettuce followed by cabbage followed by lettuce.

MIXED LAND USE

Used when two to three land uses are present in one area but, because of the large degree of intermixing, cannot be delineated separately. Indicated by percentages following land use symbols. No more than three different land uses may be used in describing the area. Percentages are in increments of 10.

Example: D5 - 40% indicates irrigated peaches 40%
NV - 20% indicates native vegetation 20%
UR - 40% indicates urban residential 40%

IX. FURTHER INSTRUCTIONS, CLARIFICATIONS AND EXAMPLES

1) Land use class and subclass should come before the dash which separates the special condition, irrigation type, and source of water.

2) Water source should be the last symbol in the code. If the field has more that one crop, the source should follow the last crop.

3) Irrigation type and source of water must be enclosed in a circle.

LAND USE CODE EXAMPLES

Single Crop:

F1-Ⓕ3
Indicates cotton that is furrow irrigated with ground water as the water source.

D12-YⓅ
Indicates young irrigated almonds that are irrigated with a permanent sprinkler system.

Intercropped:

D13-Y/F10Ⓟ1
Indicates young irrigated walnuts intercropped with dry beans, irrigated by a permanent sprinkler system with surface water as the water source.

Double cropped:

(G-Ⓗ)F6-Ⓕ2
Indicates grain irrigated with a hand move sprinkler system followed by furrow irrigated corn, with mixed ground and surface water as the water source.

Triple Cropped:

(T8)(T23)T8-Ⓟ
Indicates irrigated lettuce followed by irrigated cabbage followed by irrigated lettuce, all three crops irrigated by a permanent sprinkler system (when type of irrigation is not shown next to the first and second crops, the irrigation type for the last crop will be assumed for the first two crops).

(T8-Ⓤ)(T23-Ⓤ)T8-Ⓗ3
Indicates irrigated lettuce with unknown irrigation type, followed by irrigated cabbage with unknown irrigation type, followed by lettuce irrigated with a hand move sprinkler system, with ground water as the water source.

APPENDIX B: HISTORICAL WATER QUALITY SUMMARY RESULTS FROM EXISTING MONITORING STATIONS

Porter Slough near Road 192

558SPR192 - Porter Slough Near Road 192

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results																																			
						Jan'09	Feb'09	Mar'09	Apr'09	05/11/09	June 09	July 09	Aug'09	Sept'09	Oct'09	Nov'.09	Dec'09	Jan 10	Feb 10	03/09/10	04/28/10	05/18/10	06/16/10	Jul 10	8/17/10	Sept 10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	July'11	Aug '11	Sept'11	Oct'11	Nov'11	Dec'11
Flow	Field				cfs					25								0	0	17	1	7	5							17	3	Standing Water	29	6	12	0	0	0	0	0	0
EC	Field	700			umhos/cm					59.8										208	165.8	153.7	126.2		68.5					171.9	186.1	181	138.7	95.3	122.6						
EC dup	FGL	700			umhos/cm															208	165.8	153.7	126.2		68.5																
pH	Field	6.5-8.3			pH					7.36										8.04	8.53	7.91	7.76		7.73					7.8	8.57	7.86	8.18	7.51	8.19						
pH dup	FGL	6.5-8.3			pH															8.04	8.53	7.91	7.76		7.73																
Temperature	Field				Celsius					17.7										11.7	19.9	16.5	23.1		28.4					10.6	13.1	15.1	14.5	14.2	22.7						
Temperature dup	FGL				Celsius															11.7	19.9	16.5	23.1		28.4																
Dissolved Oxygen	Field	Min. 7.0			mg/L					8.7										10.93	10.64	9.47	8.36		7.49					11.29	8.76	9.15	10.43	9.37	8.59						
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L															10.93	10.64	9.47	8.36		7.49																
TDS	FGL	450	4.4	10	mg/L					38										110	110	75.1	62.9		46.6					114	123	125	101	64.2	72.3						
Turbidity	FGL		0.035	0.1	NTU					1.9										5.3	4.05	2.92	9.61		2.45					8.25	2.45	3.67	7.23	5.73	4.35						
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L					ND										0.3	0.05	0.09	0.01		ND					0.9	0.09	0.1	0.3	0.09	0.03						
Orthophosphate-P	FGL		0.21	0.6	mg/L					0.05										0.07	0.0594	0.0609	0.0756		0.0215					0.145	0.063	0.0672	0.106	0.0839	0.0551						
Ammonia-N	FGL	1.5	0.12	0.5	mg/L					ND										ND	ND	0.05	ND		0.094					ND	0.073	0.287	ND	0.164	0.133						
Unionized Ammonia	FGL				mg/L					ND										ND	ND	ND	ND		ND					ND	0.0059	0.0056	ND	0.0014	0.0093						
TKN	FGL		0.267	0.5	mg/L					ND										0.732	ND	0.644	0.827		0.964					0.211	0.161	0.131	0.298	0.497	ND						
Color	Field			1	APHA					Slightly Turbid										Slightly Turbid	Light Brown - Turbid	Light brownish - Turbid	Clear - Light Amber		Light Brown					150	11	26	45	15	50						
Phosphorus	FGL		8.1	50	mg/L					ND										31.5	0.0332	0.0378	0.047		ND					0.0745	0.0345	ND	0.138	0.0177	0.0615						
Arsenic	FGL	0.01	0.09	0.2	mg/L					0.00156										0.646	1.02	0.973	1.27		1.2																
Boron	FGL	0.7	5	10	mg/L					ND										43.2	33.9	30	21.5		18.2																
Cadmium	FGL	0.05	0.02	0.2	mg/L					ND										2.94	ND	0.034	0.032		0.028																
Copper	FGL	1.3	0.13	0.5	mg/L					0.00544										ND	3.28	3.42	3.98		10.1																
Lead	FGL	0.015	0.11	0.2	mg/L					0.000521										0.516	0.433	0.694	0.92		0.877																
Nickel	FGL	0.1	0.16	0.5	mg/L					ND										1.788	0.72	1.3	1.13		1.04																
Selenium	FGL	0.05	0.1	1	mg/L					ND										ND	ND	ND	ND		0.199																
Zinc	FGL		2.3	20	mg/L					0.0141										70.2	7.02	5.89	8.63		17																
Molybdenum	FGL	0.01	0.07	0.5	mg/L					ND										2.28	1.44	1.03	0.815		0.948																
Methoxychlor	CRG	30	0.008	0.01	ug/L					ND										ND	ND	ND	ND		ND																
Hardness	FGL		1	1	mg/L					9.98										73.6	59.9	52.4	49		23					66.9	78.7	74.3	59.7	33.4	48						
Atrazine	FGL	1	0.07	0.5	ug/L					ND										ND	ND	ND	ND		ND																
Cyanazine	FGL	1	0.09	0.5	ug/L					ND										ND	ND	ND	ND		ND																
Simazine	FGL	4	0.08	0.5	ug/L					ND										ND	ND	ND	ND		ND																
Methamidophos	APPL	0.35	0.01	0.2	ug/L					ND										ND	ND	ND	ND		ND																
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L					ND										ND	ND	ND	ND		ND																
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L					ND										ND	ND	ND	ND		ND																
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L					ND										ND	ND	ND	ND		ND																
Dicofol	APPL/FG		0.01	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L					ND										ND	ND	ND	ND		ND																
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L					ND										ND	ND	ND	ND		ND																
Bifenthrin	CRG		0.006	0.02	ug/L					ND										ND					ND																
Cyfluthrin	CRG		0.003	0.03	ug/L					ND										ND					ND																
Cypermethrin	CRG		0.004	0.05	ug/L					ND										ND					ND																
Esfenvalerate	CRG		0.002	0.02	ug/L					ND										1.4					ND																
Fenpropthrin			0.006	0.02	ug/L																				ND																
Lamba cyhalothrin	CRG		0.02	0.02	ug/L					ND										ND					ND																
Permethrin	CRG		0.009	0.02	ug/L					ND										ND					ND																
Aldicarb	APPL	3	0.2	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Carbaryl	APPL	2.53	0.05	0.07	ug/L					ND										ND	ND	ND	ND		ND																
Carbofuran	APPL	0.5	0.05	0.07	ug/L					ND										ND	ND	ND	ND		ND																
Diuron	APPL	2	0.2	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Linuron	APPL	1.4	0.2	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Methiocarb	APPL	5	0.2	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Methomyl	APPL	0.52	0.05	0.07	ug/L					ND										ND	ND	ND	ND		ND																
Oxamyl	APPL	50	0.2	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L					ND										ND	ND	ND	ND		ND																
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L					ND										ND	0.0065	ND	ND		ND																
Demeton-S	APPL		0.01	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Diazinon	APPL	0.1	0.004	0.02	ug/L					ND										ND	ND	ND	ND		ND																
Dichlorvos	APPL	0.085	0.02	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Dimethoate	APPL		0.08	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Disulfoton	APPL	0.05	0.02	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Malathion	APPL	0.1	0.05	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Methidathion	APPL	0.7	0.04	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Molinate	FGL	13	0.13	0.5	ug/L					ND										ND																					
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Phorate	APPL	0.7	0.072	0.1	ug/L					ND										ND	ND	ND	ND		ND																
Phosmet	APPL	140	0.06	0.2	ug/L					ND										ND	ND	ND	ND		ND																
Thiobencarb	FGL	3.1	0.06	0.5	ug/L					ND										ND																					
Glyphosate	FGL	700	4	5	ug/L					ND										ND	ND	ND	ND		ND																
Paraquat	N Coast	3.2	0.21	0.4	ug/L					ND										ND	ND	ND	ND		ND																
Trifluralin	APPL	5	0.036	0.05	ug/L					ND										ND	ND	ND	ND		ND																
TSS	FGL		na	10	mg/L					6.02										6	3.3	12.9	22.7		2.7					5.66	2.45	3.88	17.3	8.43	6.57						
TOC	FGL		0.13	0.5	mg/L					2.59										5.6	4.39	4.04	3		2.45					6.49	5.62	4.48	4.46	3.31	2.8						
E. coli	FGL	235		1.1	MPN					161										91	196	155	579		299					23	230	500	50	613	700						
Fecal Coliform	FGL	400		1.1	MPN					300										140	140	500	700		300					38.4	13.4	190.4	67	800	344.8						
Toxicity, minnow	ABC				96h					80[5]										100	95[5]	100	100		100					100	100	100	95[5]	95[5]	95[5]						
Toxicity, water flea	ABC				48h					95[5]										100	100	100	100		100					100	95[5]	100	100	100	100						
Toxicity, algae	ABC				48h					100										100	100	100	100		100					100	100	100	100	100	100						
Hyalella Azteca					10d																				87.5[5]																
TOC																									0.23																
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million

{5} No significant difference from control

558SPR192 - Porter Slough Near Road 192						Sample Month and Results												Sample Month and Results												Maximum	Date of Max
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan '12	Feb '12	March'12	April'12	May '12	June '12	July'12	Aug.'12	Sept.'12	Oct. '12	Nov. '12	Dec. '12	Jan '13	Feb '13	March'13	April'13	May '13	June '13	July'13	Aug.'13	Sept.'13	Oct. '13	Nov. '13	Dec. '13	Sample Result	Sample
Flow	Field				cfs	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	29	4/14/2014
EC	Field	700			umhos/cm																								208	3/9/2010
EC dup	FGL	700			umhos/cm																								208	3/3/2014
pH	Field	6.5-8.3			pH																								8.57	2/14/2011
pH dup	FGL	6.5-8.3			pH																								8.53	4/28/2010
Temperature	Field				Celsius																								28.4	8/17/2010
Temperature dup	FGL				Celsius																								28.4	8/17/2010
Dissolved Oxygen	Field	Min. 7.0			mg/L																								11.29	1/19/2014
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																								10.93	3/9/2010
TDS	FGL	450	4.4	10	mg/L																								125	3/15/2011
Turbidity	FGL		0.035	0.1	NTU																								9.61	6/16/2010
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L																								0.9	5/18/2014
Orthophosphate-P	FGL		0.21	0.6	mg/L																								0.145	1/19/2011
Ammonia-N	FGL	1.5	0.12	0.5	mg/L																								0.287	5/15/2011
Unionized Ammonia	FGL				mg/L																								0.0093	6/15/2011
TKN	FGL		0.267	0.5	mg/L																								0.964	8/17/2010
Color	Field			1	APHA																								150	1/19/2011
Phosphorus	FGL		8.1	50	mg/L																								31.5	3/9/2010
Arsenic	FGL	0.01	0.09	0.2	mg/L																								1.27	6/16/2010
Boron	FGL	0.7	5	10	mg/L																								43.2	3/9/2010
Cadmium	FGL	0.05	0.02	0.2	mg/L																								2.94	03*09/2010
Copper	FGL	1.3	0.13	0.5	mg/L																								10.1	8/17/2010
Lead	FGL	0.015	0.11	0.2	mg/L																								0.92	6/16/2010
Nickel	FGL	0.1	0.16	0.5	mg/L																								1.788	3/9/2010
Selenium	FGL	0.05	0.1	1	mg/L																								0.199	8/17/2010
Zinc	FGL		2.3	20	mg/L																								70.2	3/9/2010
Molybdenum	FGL	0.01	0.07	0.5	mg/L																								2.28	3/9/2010
Methoxychlor	CRG	30	0.008	0.01	ug/L																								0	
Hardness	FGL		1	1	mg/L																								78.7	2/14/2011
Atrazine	FGL	1	0.07	0.5	ug/L																								0	
Cyanazine	FGL	1	0.09	0.5	ug/L																								0	
Simazine	FGL	4	0.08	0.5	ug/L																								0	
Methamidophos	APPL	0.35	0.01	0.2	ug/L																								0	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L																								0	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L																								0	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L																								0	
Dicofol	APPL/FG		0.01	0.1	ug/L																								0	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L																								0	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L																								0	
Bifenthrin	CRG		0.006	0.02	ug/L																								0	
Cyfluthrin	CRG		0.003	0.03	ug/L																								0	
Cypermethrin	CRG		0.004	0.05	ug/L																								0	
Esfenvalerate	CRG		0.002	0.02	ug/L																								1.4	3/9/2010
Fenpropthrin			0.006	0.02	ug/L																								0	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L																								0	
Permethrin	CRG		0.009	0.02	ug/L																								0	
Aldicarb	APPL	3	0.2	0.4	ug/L																								0	
Carbaryl	APPL	2.53	0.05	0.07	ug/L																								0	
Carbofuran	APPL	0.5	0.05	0.07	ug/L																								0	
Diuron	APPL	2	0.2	0.4	ug/L																								0	
Linuron	APPL	1.4	0.2	0.4	ug/L																								0	
Methiocarb	APPL	5	0.2	0.4	ug/L																								0	
Methomyl	APPL	0.52	0.05	0.07	ug/L																								0	
Oxamyl	APPL	50	0.2	0.4	ug/L																								0	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L																								0	
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																								0	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L																								0.0065	4/28/2014
Demeton-S	APPL		0.01	0.1	ug/L																								0	
Diazinon	APPL	0.1	0.004	0.02	ug/L																								0	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																								0	
Dimethoate	APPL		0.08	0.1	ug/L																								0	
Disulfoton	APPL	0.05	0.02	0.1	ug/L																								0	
Malathion	APPL	0.1	0.05	0.1	ug/L																								0	
Methidathion	APPL	0.7	0.04	0.1	ug/L																								0	
Molinate	FGL	13	0.13	0.5	ug/L																								0	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L																								0	
Phorate	APPL	0.7	0.072	0.1	ug/L																								0	
Phosmet	APPL	140	0.06	0.2	ug/L																								0	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L																								0	
Glyphosate	FGL	700	4	5	ug/L																								0	
Paraquat	N Coast	3.2	0.21	0.4	ug/L																								0	
Trifluralin	APPL	5	0.036	0.05	ug/L																								0	
TSS	FGL		na	10	mg/L																								22.7	6/16/2014
TOC	FGL		0.13	0.5	mg/L																								6.49	1/19/2011
E. coli	FGL	235		1.1	MPN																								700	6/15/2011
Fecal Coliform	FGL	400		1.1	MPN																								800	5/18/2011
Toxicity, minnow	ABC				96h																								100	3/9/2010
Toxicity, water flea	ABC				48h																								100	3/9/2010
Toxicity, algae	ABC				48h																								100	3/9/2010
Hyalella Azteca					10d																								0	
TOC																													0.23	8/17/2010
Control Result																													0	

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in co

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in co

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in co

{5} No significant difference from control

Tule River at Road 144

588TRA144 - Tule River at North Fork Road 144

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan'06	Feb'06	Mar'06	Apr'06	May'06	June'06	July'06	Aug'06	Sept'06	Oct'06	Nov'06	Dec'06	Jan'07	Feb'07	Mar'07	Apr'07	May 07	June 07	07/05/07	Aug 07	Sept 07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	03/05/08	Apr'08	May'08	06/18/08	07/30/08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08
Flow	Field				cfs								275	140										250								95			275	375					
EC	Field	700			umhos/cm								21	25.6										154								211			34.9	38.4					
EC dup	FGL	700			umhos/cm																																				
pH	Field	6.5-8.3			pH								6.9	6.9										7.42								8.27			7.21	7.59					
pH dup	FGL	6.5-8.3			pH																																				
Temperature	Field				Celsius								21.5	23.3										25.6								12.8			22.5	23.4					
Temperature dup	FGL				Celsius																																				
Dissolved Oxygen	Field	Min. 7.0			mg/L								8.7	8.1										7.9								12.1			11.2	3.8					
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																																				
TDS	FGL	450	4.4	10	mg/L								ND	ND										100								130			21	30					
Turbidity	FGL		0.035	0.1	NTU								1.4	5.7										3								4.2			3	8.3					
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND	ND										ND								0.5			0.3	0.3					
Orthophosphate-P	FGL		0.21	0.6	mg/L								ND	ND										ND								0.4			ND	ND					
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								ND	ND										ND								ND			0.1	ND					
Unionized Ammonia	FGL				mg/L																																				
TKN	FGL		0.267	0.5	mg/L								ND	ND										ND								ND			0.7	ND					
Color	Field			1	APHA								5	10										15								50			Slightly Turbid	Slightly Turbid					
Phosphorus	FGL		8.1	50	ug/L								ND	ND										ND								ND			0.07	ND					
Arsenic	FGL	10	0.09	0.2	ug/L								ND	ND										ND								ND			0.00349	ND					
Boron	FGL	700	5	10	ug/L								ND	ND										ND								ND			ND	ND					
Cadmium	FGL	5	0.02	0.2	ug/L								ND	ND										ND								ND			ND	ND					
Copper	FGL	1300	0.13	0.5	ug/L								0.004	0.005										ND								ND			0.168	0.004					
Lead	FGL	15	0.11	0.2	ug/L								0.0003	0.0003										ND								ND			0.00102	0.0005					
Nickel	FGL	100	0.16	0.5	ug/L								ND	ND										ND								ND			0.00152	ND					
Selenium	FGL	50	0.1	1	ug/L								ND	ND										ND								ND			ND	ND					
Zinc	FGL		2.3	20	ug/L								0.01	0.06										ND								ND			0.0161	0.01					
Molybdenum	FGL	10	0.07	0.5	ug/L																																				

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan.'06	Feb.'06	Mar'06	Apr'06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct'06	Nov'06	Dec'06	Jan 07	Feb 07	Mar'07	Apr'07	May 07	June 07	07/05/07	Aug 07	Sept 07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	03/05/08	Apr'08	May 08	06/18/08	07/30/08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Hardness	FGL		1	1	mg/L								4.99	4.99										54.8								82			7	7.49					
Atrazine	FGL	1	0.07	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Cyanazine	FGL	1	0.09	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Simazine	FGL	4	0.08	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Methamidophos	APPL	0.35	0.01	0.2	ug/L								ND	ND										ND								ND			ND	ND					
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L								ND	ND										ND								ND			ND	ND					
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L								ND	ND										ND								ND			ND	ND					
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Dicofol	APPL/FGL		0.01	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Bifenthrin	CRG		0.006	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Cyfluthrin	CRG		0.003	0.03	ug/L								ND	ND										ND								ND			ND	ND					
Cypermethrin	CRG		0.004	0.05	ug/L								ND	ND										ND								ND			ND	ND					
Esfenvalerate	CRG		0.002	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Fenpropthrin			0.006	0.02	ug/L																																				
Lamba cyhalothrin	CRG		0.02	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Permethrin	CRG		0.009	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Aldicarb	APPL	3	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Carbaryl	APPL	2.53	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Carbofuran	APPL	0.5	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Diuron	APPL	2	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Linuron	APPL	1.4	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Methiocarb	APPL	5	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Methomyl	APPL	0.52	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Oxamyl	APPL	50	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L								ND	ND										ND								ND			ND	ND					

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan.'06	Feb.'06	Mar'06	Apr'06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct'06	Nov'06	Dec'06	Jan 07	Feb 07	Mar'07	Apr'07	May 07	June 07	07/05/07	Aug 07	Sept 07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	03/05/08	Apr'08	May 08	06/18/08	07/30/08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L								ND	ND										ND								ND			ND	0.011					
Demeton-S	APPL		0.01	0.1	ug/L																											ND			ND	ND					
Diazinon	APPL	0.1	0.004	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																											ND			ND	ND					
Dimethoate	APPL		0.08	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Disulfoton	APPL	0.05	0.02	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Malathion	APPL	0.1	0.05	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Methidathion	APPL	0.7	0.04	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Molinate	FGL	13	0.13	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Phorate	APPL	0.7	0.072	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Phosmet	APPL	140	0.06	0.2	ug/L								ND	ND										ND								ND			ND	ND					
Thiobencarb	FGL	3.1	0.06	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Glyphosate	FGL	700	4	5	ug/L								ND	ND										ND								ND			ND	ND					
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Trifluralin	APPL	5	0.036	0.05	ug/L																											ND			ND	ND					
TSS	FGL		na	10	mg/L																											0			21	27					
TOC	FGL		0.13	0.5	mg/L								1.7	1.5										2.2								4.7			1.7	1.6					
E. coli	FGL	235		1.1	MPN								20	21										54								32			68	25					
Fecal Coliform	FGL	400		1.1	MPN								50	50										230								50			170	13					
Toxicity, minnow	ABC				96h								60	100										100								95			85	100					
Toxicity, water flea	ABC				48h								100	**100**										100								85			100	100					
Toxicity, algae	ABC				48h								100	100										100								100			100	100					
Sediment Results					10d									97.5										100								100			95						
Test Result																																										
Control Result																																										

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

(5) No significant difference from control

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						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/15/09	08/21/09	Sept 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/14/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.11	Dec.11
Flow	Field				cfs					225		465	Standing Water							150	160	285	325	325						160	185	250	325	175	275	295	215	190	140	0	0
EC	Field	700			umhos/cm					65.3		101.1	40.1							202	55	54.1	61.7	32.1	20.4					170	94.6	71.8	137.6	45.6	78	18.73	22	21.26	25.7		
EC dup	FGL	700			umhos/cm															20	55	55.7	61.7	32.1	20.4																
pH	Field	6.5-8.3			pH					7.57		7.84	7.76							8.35	7.7	7.48	7.43	7.11	7.13					7.86	8.21	7.64	8.16	7.28	7.69	7.5	7.47	7.35	7.15		
pH dup	FGL	6.5-8.3			pH															8.35	7.7	7.48	7.43	7.11	7.13																
Temperature	Field				Celsius					17.6		24	36.3							12.8	15.6	16.4	21.4	21.8	24.1					10.5	12.5	12.2	13.4	14.1	20.2	19.9	21.3	20.8	21.5		
Temperature dup	FGL				Celsius															12.8	15.56	16.4	21.4	21.8	24.1																
Dissolved Oxygen	Field	Min. 7.0			mg/L					6.9		8.77	7.59							11.5	9.43	9.67	8.96	7.43	8.18					11.15	10.48	10.3	10.37	9.97	8.58	8.96	8.29	8.64	8		
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L															11.5	9.43	9.67	8.96	7.43	8.18																
TDS	FGL	450	4.4	10	mg/L					24.9		50	ND							120	53.6	31.8	29.6	ND	17.6						118	75.5	46.1	102	43.2	62.9	28.1	ND	22.8	17.9	
Turbidity	FGL		0.035	0.1	NTU					4		8.5	1.9							6.7	24.2	11.3	7.15	11.1	3.79					10.7	7.54	9.11	6.92	6.56	5.18	4.69	2.14	0.965	0.608		
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L					ND		ND	ND							0.3	ND	0.4	ND	ND	ND					1	0.1	0.1	0.2	0.03	0.03	ND	0.04	0.04	0.05		
Orthophosphate-P	FGL		0.21	0.6	mg/L					0.03			0.02							0.06	0.0576	0.0388	0.0461	0.0207	0.0115					0.146	0.0811	0.0521	0.0789	0.0644	0.0381	0.0139	0.0274	0.0132	0.01		
Ammonia-N	FGL	1.5	0.12	0.5	mg/L					0.143		2.4	0.2							ND	ND	0.369	ND	ND	ND					ND	ND	0.126	ND	0.173	0.048	0.097	ND	ND	1.2		
Unionized Ammonia	FGL				mg/L					0.000219		0.00935	ND							ND	ND	0.00336	ND	ND	ND					ND	ND	0.0012	ND	0.00084	0.00093	0.0012	ND	ND	0.00746		
TKN	FGL		0.267	0.5	mg/L					0.742		0.6	ND							1.08	0.389	0.5	0.802	ND	0.402					ND	ND	0.243	0.177	0.115	ND	0.328	1.36	0.442	0.747		
Color	Field			1	APHA					Slightly Turbid		Slightly Turbid	Clear							Turbid-Pale Brown	Greenish - Clear	Clear- Greenish	Greenish - Clear	Clear - Pale Amber	Clear - Greenish					150	5	14	16	13	14	13	11	8	9		
Phosphorus	FGL		8.1	50	ug/L					ND		ND	ND							30.9	ND	0.0234	0.317	0.0458	ND					0.149	0.0199	0.0675	0.0686	0.0117	0.044	0.0125	0.011	ND	ND		
Arsenic	FGL	10	0.09	0.2	ug/L					0.00176		0.002	ND							1.286	3.17	1.73	1.34	1.25	1.12																
Boron	FGL	700	5	10	ug/L					ND		0.03	0.01							45.8	26.5	27.1	14	ND	8.36																
Cadmium	FGL	5	0.02	0.2	ug/L					ND		ND	ND							0.058	0.208	ND	0.037	ND	ND																
Copper	FGL	1300	0.13	0.5	ug/L					0.00657		0.005	0.004							3	4.77	5.54	4.88	11.1	4.08																
Lead	FGL	15	0.11	0.2	ug/L					0.000581		0.0009	0.0003							0.493	1.32	0.792	0.725	0.795	0.615																
Nickel	FGL	100	0.16	0.5	ug/L					0.00165		0.002	ND							1.273	1.7	1.51	0.984	1.55	0.754																
Selenium	FGL	50	0.1	1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	0.451																
Zinc	FGL		2.3	20	ug/L					0.167		ND	0.02							31.7	12.9	9.72	8.67	10.5	19.4																
Molybdenum	FGL	10	0.07	0.5	ug/L					ND		0.001	0.001							2.12	1.46	1.21	0.997	ND	0.818																

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/15/09	08/21/09	Sept 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct 10	Nov 10	Dec 10	Jan.'11	Feb.'11	Mar.'11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.11	Dec.11
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Hardness	FGL		1	1	mg/L					9.98		35.7	7.49							74	18.6	16.1	19.1	8.57	6.7					63.5	41.2	27.8	53.8	14.9	29.9	6.45	9.91	6.11	7.05		
Atrazine	FGL	1	0.07	0.5	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Cyanazine	FGL	1	0.09	0.5	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Simazine	FGL	4	0.08	0.5	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Methamidophos	APPL	0.35	0.01	0.2	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Dicofol	APPL/FGL		0.01	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Bifenthrin	CRG		0.006	0.02	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Cyfluthrin	CRG		0.003	0.03	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Cypermethrin	CRG		0.004	0.05	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Esfenvalerate	CRG		0.002	0.02	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Fenpropthrin			0.006	0.02	ug/L																ND	ND	ND	ND	ND																
Lamba cyhalothrin	CRG		0.02	0.02	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Permethrin	CRG		0.009	0.02	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Aldicarb	APPL	3	0.2	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Carbaryl	APPL	2.53	0.05	0.07	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Carbofuran	APPL	0.5	0.05	0.07	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Diuron	APPL	2	0.2	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Linuron	APPL	1.4	0.2	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Methiocarb	APPL	5	0.2	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Methomyl	APPL	0.52	0.05	0.07	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Oxamyl	APPL	50	0.2	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/15/09	08/21/09	Sept 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/14/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.11	Dec.11
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L					0.0081		0.15	ND							ND	0.017	ND	ND	0.013	ND																
Demeton-S	APPL		0.01	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Diazinon	APPL	0.1	0.004	0.02	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Dichlorvos	APPL	0.085	0.02	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Dimethoate	APPL		0.08	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Disulfoton	APPL	0.05	0.02	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Malathion	APPL	0.1	0.05	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Methidathion	APPL	0.7	0.04	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Molinate	FGL	13	0.13	0.5	ug/L					ND		ND	ND							ND																					
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Phorate	APPL	0.7	0.072	0.1	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Phosmet	APPL	140	0.06	0.2	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Thiobencarb	FGL	3.1	0.06	0.5	ug/L					ND		ND	ND							ND																					
Glyphosate	FGL	700	4	5	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
Trifluralin	APPL	5	0.036	0.05	ug/L					ND		ND	ND							ND	ND	ND	ND	ND	ND																
TSS	FGL		na	10	mg/L					13.8		29	4							8	47.1	28.1	21.9	54.8	13.2					6.91	5.86	13	12.1	19	9.85	19.7	6.15	1.65	1.35		
TOC	FGL		0.13	0.5	mg/L					2		2.7	2.4							5.8	3.31	3.71	2.35	0.698	1.33					6.9	3.76	2.83	3.9	2.67	5.77	1.65	1.05	0.649	0.753		
E. coli	FGL	235		1.1	MPN					44		82	4							21	166	96	67	65	27.8					30	50	50	140	150	300	60.1	33.6	30	50		
Fecal Coliform	FGL	400		1.1	MPN					70		220	50							50	170	110	80	110	21					14.8	44.8	36.4	116	500	201.4	80	130	19.9	59.4		
Toxicity, minnow	ABC				96h					70[(5)]		95[(5)]	100							100	100	100	100	95[(5)]	100					100	100	100	100	100	100	100	80[(6)]	100	95[(5)]		
Toxicity, water flea	ABC				48h					60[(5)]		100	100							100	100	100	100	**100**	100					100	100	100	100	95[(5)]	100	100	100	100	100		
Toxicity, algae	ABC				48h					100		100	100							100	100	100	100	100	100					100	100	100	100	100	100	100	100	100	100		
Sediment Results					10d								87.5													97.5[(5)]															
Test Result																										0.25															
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in contro

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in contro

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in contro

{5} No significant difference from control

588TRA144 - Tule River at North Fork Road 144

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '12	Feb '12	March'12	April'12	May '12	June '12	July '12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13	Maximum Sample Result	Date of Max Sample
Flow	Field				cfs	0	0	0	0	0	0	0	410	0				0	0	0	0	0	0	0	375	0	0	0	0	465	7/15/2009
EC	Field	700			umhos/cm								32.3												31.2					211	3/5/2008
EC dup	FGL	700			umhos/cm																				31.2					61.7	6/16/2010
pH	Field	6.5-8.3			pH								7.07												7.71					8.35	3/9/2010
pH dup	FGL	6.5-8.3			pH																				7.71					8.35	3/9/2010
Temperature	Field				Celsius								24.2												22.8					36.3	8/21/2009
Temperature dup	FGL				Celsius																				22.8					24.1	8/17/2010
Dissolved Oxygen	Field	Min. 7.0			mg/L								7.86												8.52					12.1	3/5/2008
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																				8.52					11.5	3/9/2010
TDS	FGL	450	4.4	10	mg/L								15.3												25.9					130	3/5/2008
Turbidity	FGL		0.035	0.1	NTU								8.62												10.6					24.2	4/20/2010
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND												ND					1	1/19/2011
Orthophosphate-P	FGL		0.21	0.6	mg/L								0.0126												0.0392					0.4	3/5/2008
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								0.064												ND					2.4	7/15/2009
Unionized Ammonia	FGL				mg/L								0.000407												ND					0.00935	7/15/2009
TKN	FGL		0.267	0.5	mg/L								1.4												0.578					1.4	8/15/2012
Color	Field			1	APHA								6																	150	1/19/2011
Phosphorus	FGL		8.1	50	ug/L								ND												0.0134					30.9	3/9/2010
Arsenic	FGL	10	0.09	0.2	ug/L																				1.7					3.17	4/20/2010
Boron	FGL	700	5	10	ug/L																				18.7					45.8	3/9/2010
Cadmium	FGL	5	0.02	0.2	ug/L																				ND					0.208	4/20/2010
Copper	FGL	1300	0.13	0.5	ug/L																				9.16					11.1	7/14/2010
Lead	FGL	15	0.11	0.2	ug/L																				0.828					1.32	4/20/2010
Nickel	FGL	100	0.16	0.5	ug/L																				2.22					2.22	Aug-13
Selenium	FGL	50	0.1	1	ug/L																				0.236					0.451	8/17/2010
Zinc	FGL		2.3	20	ug/L																				7.73					31.7	3/9/2012
Molybdenum	FGL	10	0.07	0.5	ug/L																				1.34					2.12	3/9/2010

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '12	Feb '12	March'12	April'12	May '12	June '12	July '12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																									0	
Hardness	FGL		1	1	mg/L								10.3												11					82	3/5/2008
Atrazine	FGL	1	0.07	0.5	ug/L																				ND					0	
Cyanazine	FGL	1	0.09	0.5	ug/L																				ND					0	
Simazine	FGL	4	0.08	0.5	ug/L																				ND					0	
Methamidophos	APPL	0.35	0.01	0.2	ug/L																				ND					0	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L																				ND					0	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L																				ND					0	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L																				ND					0	
Dicofol	APPL/FGL		0.01	0.1	ug/L																				ND					0	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L																				ND					0	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L																				ND					0	
Bifenthrin	CRG		0.006	0.02	ug/L																				ND					0	
Cyfluthrin	CRG		0.003	0.03	ug/L																				ND					0	
Cypermethrin	CRG		0.004	0.05	ug/L																				ND					0	
Esfenvalerate	CRG		0.002	0.02	ug/L																				ND					0	
Fenpropthrin			0.006	0.02	ug/L																				ND					0	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L																				ND					0	
Permethrin	CRG		0.009	0.02	ug/L																				ND					0	
Aldicarb	APPL	3	0.2	0.4	ug/L																				ND					0	
Carbaryl	APPL	2.53	0.05	0.07	ug/L																				ND					0	
Carbofuran	APPL	0.5	0.05	0.07	ug/L																				ND					0	
Diuron	APPL	2	0.2	0.4	ug/L																				ND					0	
Linuron	APPL	1.4	0.2	0.4	ug/L																				ND					0	
Methiocarb	APPL	5	0.2	0.4	ug/L																				ND					0	
Methomyl	APPL	0.52	0.05	0.07	ug/L																				ND					0	
Oxamyl	APPL	50	0.2	0.4	ug/L																				ND					0	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L																				ND					0	

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '12	Feb '12	March'12	April'12	May '12	June '12	July '12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																									0	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L																									0.15	7/15/2009
Demeton-S	APPL		0.01	0.1	ug/L																									0	
Diazinon	APPL	0.1	0.004	0.02	ug/L																									0	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																									0	
Dimethoate	APPL		0.08	0.1	ug/L																									0	
Disulfoton	APPL	0.05	0.02	0.1	ug/L																									0	
Malathion	APPL	0.1	0.05	0.1	ug/L																									0	
Methidathion	APPL	0.7	0.04	0.1	ug/L																									0	
Molinate	FGL	13	0.13	0.5	ug/L																									0	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L																									0	
Phorate	APPL	0.7	0.072	0.1	ug/L																									0	
Phosmet	APPL	140	0.06	0.2	ug/L																									0	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L																									0	
Glyphosate	FGL	700	4	5	ug/L																									0	
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L																									0	
Trifluralin	APPL	5	0.036	0.05	ug/L																									0	
TSS	FGL		na	10	mg/L								15.3														34.7			54.8	7/14/2010
TOC	FGL		0.13	0.5	mg/L								2.52														3.55			6.9	1/19/2011
E. coli	FGL	235		1.1	MPN								43.5														19.9			300	6/15/2011
Fecal Coliform	FGL	400		1.1	MPN								23														22			500	5/18/2011
Toxicity, minnow	ABC				96h								95[b7]														97.5			100	8/21/2009
Toxicity, water flea	ABC				48h								100														100			100	7/15/2009
Toxicity, algae	ABC				48h								100														100			100	5/11/2009
Sediment Results					10d																									100	7/5/2007
Test Result																														0.25	9/22/2010
Control Result																														0	

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in contr

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in contr

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in contr

(5) No significant difference from control

Tule River at Road 92

558TRAR92 - Tule River at Road 92

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan.'06	Feb.'06	Mar.'06	Apr.'06	May'06	June'06	July'06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan.'07	Feb.'07	Mar.'07	Apr.'07	May'07	June'07	07/05/07	Aug.'07	Sept.'07	Oct.'07	Nov.'07	Dec.'07	Jan.'08	Feb.'08	03/05/08	Apr.'08	May'08	06/18/08	07/30/08	Aug.'08	Sept.'08	Oct.'08	Nov.'08	Dec.'08
Flow	Field				cfs								190	75										175								60			215	325					
EC	Field	700			umhos/cm								20.8	23.7										164.4								208			59.8	31.2					
EC dup	FGL	700			umhos/cm																																				
pH	Field	6.5-8.3			pH								7.2	7.1										7.43								8.29			7.5	7.67					
pH dup	FGL	6.5-8.3			pH																																				
Temperature	Field				Celsius								21.7	23.9										27								14.3			22.6	23.8					
Temperature dup	FGL				Celsius																																				
Dissolved Oxygen	Field	Min. 7.0			mg/L								8.5	8.4										7.9								12.1			10.1	3.4					
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																																				
TDS	FGL	450	4.4	10	mg/L								ND	ND										120								130			22	30					
Turbidity	FGL		0.035	0.1	NTU								1.4	0.7										3.3								4.2			3.8	7.4					
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND	ND										ND								0.5			ND	0.3					
Orthophosphate-P	FGL		0.21	0.6	mg/L								ND	ND										ND								0.4			ND	ND					
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								ND	ND										ND								ND			0.2	ND					
Unionized Ammonia	FGL				mg/L																															ND	ND					
TKN	FGL		0.267	0.5	mg/L								ND	ND										ND								1.4			ND	1.1					
Color	Field			1	APHA								10	10										20								50			Slightly Turbid	Slightly Turbid					
Phosphorus	FGL		8.1	50	ug/L								0.02	ND										0.1								0.1			0.06	ND					
Arsenic	FGL	10	0.09	0.2	ug/L								ND	ND										ND								ND			0.00362	ND					
Boron	FGL	700	5	10	ug/L								ND	ND										ND								ND			ND	ND					
Cadmium	FGL	5	0.02	0.2	ug/L								ND	ND										ND								ND			ND	ND					
Copper	FGL	1300	0.13	0.5	ug/L								0.003	0.009										ND								ND			0.0219	0.012					
Lead	FGL	15	0.11	0.2	ug/L								0.0003	ND										ND								ND			0.00104	0.0007					
Nickel	FGL	100	0.16	0.5	ug/L								ND	ND										ND								ND			0.00121	0.005					
Selenium	FGL	50	0.1	1	ug/L								ND	ND										ND								ND			ND	ND					
Zinc	FGL		2.3	20	ug/L								0.01	0.06										0.03								ND			0.0161	0.01					
Molybdenum	FGL	10	0.07	0.5	ug/L																											ND			ND	0.001					

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan.'06	Feb.'06	Mar.'06	Apr.'06	May'06	June'06	July'06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan.'07	Feb.'07	Mar.'07	Apr.'07	May'07	June'07	07/05/07	Aug.'07	Sept.'07	Oct.'07	Nov.'07	Dec.'07	Jan.'08	Feb.'08	03/05/08	Apr.'08	May'08	06/18/08	07/30/08	Aug.'08	Sept.'08	Oct.'08	Nov.'08	Dec.'08
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Hardness	FGL		1	1	mg/L								4.99	4.99										57.3								82			7	9.98					
Atrazine	FGL	1	0.07	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Cyanazine	FGL	1	0.09	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Simazine	FGL	4	0.08	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Methamidophos	APPL	0.35	0.01	0.2	ug/L								ND	ND										ND								ND			ND	ND					
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L								ND	ND										ND								ND			ND	ND					
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L								ND	ND										ND								ND			ND	ND					
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Dicofol	APPL/FGL		0.01	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Bifenthrin	CRG		0.006	0.02	ug/L								ND	ND										ND								ND			ND						
Cyfluthrin	CRG		0.003	0.03	ug/L								ND	ND										ND								ND			ND						
Cypermethrin	CRG		0.004	0.05	ug/L								ND	ND										ND								ND			ND						
Esfenvalerate	CRG		0.002	0.02	ug/L								ND	ND										ND								ND			ND						
Fenpropthrin			0.006	0.02	ug/L																																				
Lamba cyhalothrin	CRG		0.02	0.02	ug/L								ND	ND										ND								ND			ND						
Permethrin	CRG		0.009	0.02	ug/L								ND	ND										ND								ND			ND						
Aldicarb	APPL	3	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Carbaryl	APPL	2.53	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Carbofuran	APPL	0.5	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Diuron	APPL	2	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Linuron	APPL	1.4	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Methiocarb	APPL	5	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Methomyl	APPL	0.52	0.05	0.07	ug/L								ND	ND										ND								ND			ND	ND					
Oxamyl	APPL	50	0.2	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L								ND	ND										ND								ND			ND	ND					

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results											
						Jan.'06	Feb.'06	Mar.'06	Apr.'06	May'06	June'06	July'06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan.'07	Feb.'07	Mar.'07	Apr.'07	May'07	June'07	07/05/07	Aug.'07	Sept.'07	Oct.'07	Nov.'07	Dec.'07	Jan.'08	Feb.'08	03/05/08	Apr.'08	May'08	06/18/08	07/30/08	Aug.'08	Sept.'08	Oct.'08	Nov.'08	Dec.'08
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND										ND								ND			ND	ND					
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L								0.014	ND										ND								ND			ND	0.013					
Demeton-S	APPL		0.01	0.1	ug/L																											ND			ND	ND					
Diazinon	APPL	0.1	0.004	0.02	ug/L								ND	ND										ND								ND			ND	ND					
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																											ND			ND	ND					
Dimethoate	APPL		0.08	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Disulfoton	APPL	0.05	0.02	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Malathion	APPL	0.1	0.05	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Methidathion	APPL	0.7	0.04	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Molinate	FGL	13	0.13	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Phorate	APPL	0.7	0.072	0.1	ug/L								ND	ND										ND								ND			ND	ND					
Phosmet	APPL	140	0.06	0.2	ug/L								ND	ND										ND								ND			ND	ND					
Thiobencarb	FGL	3.1	0.06	0.5	ug/L								ND	ND										ND								ND			ND	ND					
Glyphosate	FGL	700	4	5	ug/L								ND	ND										ND								ND			ND	ND					
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L								ND	ND										ND								ND			ND	ND					
Trifluralin	APPL	5	0.036	0.05	ug/L																											ND			ND	ND					
TSS	FGL		na	10	mg/L																											0			20	18					
TOC	FGL		0.13	0.5	mg/L								1.8	1.5										2.4								5			1.8	3					
E. coli	FGL	235		1.1	MPN								53	18										127								23			120	64					
Fecal Coliform	FGL	400		1.1	MPN								80	80										500								14			170	300					
Toxicity, minnow	ABC				96h								80	100										95								75[3]			90	95[3]					
Toxicity, water flea	ABC				48h								100	100										100								90[3]			100	100					
Toxicity, algae	ABC				48h								100	100										100								100			100	100					
Sediment Results					10d									95										97.5								92.5[3]			92.5[3]						
Test Result																																										
Control Result																																										

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

(5) No significant difference from control

Sample Month and Results												Sample Month and Results												Sample Month and Results											
Jan.'09	Feb.'09	Mar.'09	Apr.'09	05/11/9	June'09	07/15/09	08/21/09	Sept.'09	Oct.'09	Nov.'09	Dec.'09	Jan.'10	Feb.'10	09/09/10	04/21/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct.'10	Nov.'10	Dec.'10	01/19/11	02/14/11	03/15/11	04/14/11	05/14/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.'11	Dec.'11
				150		320	Standing Water					0	0	120	110	225	250	250						200	150	200	200	90	150	175	295	110	95	0	0
				52.6		87.8	40.8							199	53.8	55.4	83.3	24.8	31.1					167.8	98.2	67.5	142.5	71.3	59.8	20.04	22.4	21.6	22.4		
														199	53.8	55.4	83.3	24.8	31.1																
				7.21		8.03	8.87							8.5	7.59	7.46	7.17	7.13	6.93					7.64	8.32	7.72	7.97	7.2	7.52	7.44	7.95	7.19	7.14		
														8.5	7.59	7.46	7.17	7.13	6.93																
				17.4		27.7	56.9							13.2	13.3	18	21.3	21.6	21.7					11.2	12.8	13.9	12.1	14.7	20.3	19.1	19.3	21.4	21.9		
														13.2	13.3	18	21.3	21.6	24.1																
				8.9		8.27	8.92							11.79	9.77	9.27	8.47	7.73	8.22					10.35	9.54	9.85	10.01	9.32	8.21	8.45	8.57	8.17	7.7		
														11.79	9.77	9.27	8.47	7.73	8.22																
				38.1		50	ND							120	24.9	30.3	31.9	22.7	22.1					118	56.7	47.7	103	55.7	46.7	29.5	18.3	30.8	14.7		
				6.2		8.5	4							7.2	8.51	3.89	7.44	13.8	4.3					10.5	5.81	9.65	12.5	5.05	4.63	3	2.06	0.7	1.01		
				ND		ND	ND							0.2	0.04	0.04	ND	ND	ND					0.9	0.1	0.1	0.2	ND	ND	0.03	0.03	0.09	0.07		
				0.03		0.05	0.02							0.06	0.0588	0.0417	0.0475	0.0223	0.0115					0.15	0.0753	0.0449	0.103	0.039	0.0396	ND	0.0327	30.8	ND		
				ND		5.1	ND							ND	ND	0.103	ND	ND	ND					ND	0.063	0.084	ND	0.16	0.056	ND	ND	ND	0.198		
				ND		0.0366	ND							ND	ND	0.00101	ND	ND	ND					ND	0.0029	0.0011	ND	0.00068	0.00064	ND	ND	ND	0.00124		
				ND		ND	ND							1.54	0.401	ND	0.743	ND	0.695					0.147	0.29	0.149	0.113	0.444	ND	0.197	0.91	1.33	0.719		
				Slightly Turbid		Slightly Turbid	Clear							Turbid - Pale Brown	Greenish-Tan	Greenish Tan	Turbid - Slightly	Light Amber Brown	Greenish - Brown					100	15	15	65	14	13	13	12	9	10		
				0.0397		ND	ND							14.3	ND	0.036	ND	0.0435	0.0106					0.153	0.0356	ND	0.0718	0.0134	0.0326	ND	ND	ND	0.0517		
				0.00176		0.001	ND							1.499	0.837	1.57	1.27	1.17	1.1																
				ND		0.02	0.01							47.8	27.6	20.2	12.9	ND	8.17																
				ND		ND	ND							0.084	0.0996	ND	0.069	ND	ND																
				0.0066		0.004	0.006							3.12	3.72	6.06	6.09	14.2	5.04																
				0.00387		0.0006	0.0003							0.464	0.638	0.631	1.33	0.714	0.598																
				0.00223		0.001	ND							1.108	0.184	1.06	1.24	0.658	3.34																
				ND		ND	ND							ND	1.28	ND	ND	ND	ND																
				0.0242		ND	ND							51.8	9.05	5.76	16.8	8.87	21.7																
				ND		0.001	ND							1.88	1.5	1.07	0.866	ND	0.746																

Sample Month and Results												Sample Month and Results												Sample Month and Results											
Jan.'09	Feb.'09	Mar.'09	Apr.'09	05/11/9	June'09	07/15/09	08/21/09	Sept.'09	Oct.'09	Nov.'09	Dec.'09	Jan.'10	Feb.'10	09/09/10	04/21/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct.'10	Nov.'10	Dec.'10	01/19/11	02/14/11	03/15/11	04/14/11	05/14/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.'11	Dec.'11
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				9.98		33.2	7.49							75.4	14.6	16.8	19.4	8.46	6.33					67.4	37.9	28.4	61	24.3	23.1	6.85	11.3	7.6	7.69		
				ND		ND	ND							ND		ND	ND	ND	ND																
				ND		ND	ND							ND		ND	ND	ND	ND																
				ND		ND	ND							ND		ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND																					
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				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																

Sample Month and Results												Sample Month and Results												Sample Month and Results											
Jan.'09	Feb.'09	Mar.'09	Apr.'09	05/11/9	June'09	07/15/09	08/21/09	Sept.'09	Oct.'09	Nov.'09	Dec.'09	Jan.'10	Feb.'10	09/09/10	04/21/10	05/18/10	06/16/10	07/14/10	08/17/10	09/22/10	Oct.'10	Nov.'10	Dec.'10	01/19/11	02/14/11	03/15/11	04/14/11	05/14/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov.'11	Dec.'11
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	0.015	0.0067	ND	0.018	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
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				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				ND		ND	ND							ND	ND	ND	ND	ND	ND																
				10.7		19	7.49							6	9.55	14.6	9.25	23.7	6.1					7.68	4.65	12.7	18	6.05	7.47	8.25	3.5	2.19	2.2		
				2.74		2.6	2.6							5.8	2.15	2.81	2.32	0.668	1.35					6.87	3.81	2.82	4.01	3.01	2.28	1.54	2.32	1.1	0.888		
				74		129	40							55	142	108	155	133	83.3					30	30	50	1300	365.4	500	231	72.8	300	50		
				280		110	22							50	300	220	130	500	170					41.3	14.5	29.1	203	500	238.2	500	130	191.8	131.3		
				80[(5)]		100	100							100	100	100	95[(5)]	100	100					100	100	100	95[(5)]	100	100	100	15[(6)] *	100	95[(5)]		
				80[(5)]		100	100							100	100	100	95[(5)]	**100**	100					100	100	95[(5)]	100	100	100	100	100	100	100		
				100		100	100							100	100	100	100	100	100					100	100	100	100	100	100	100	100	100	100		
							87.5													87.5[(5)]															
																				0.65															

Sample Month and Results												Sample Month and Results												Maximum Sample Result	Date of Max Sample
Jan.'12	Feb.'12	Mar'.12	Apr.'12	May'12	June'12	July'12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Jan.'13	Feb.'13	Mar.'13	Apr.'13	May'13	June'13	July'13	Aug.'13	09/15/13	Oct.'13	Nov.'13	Dec.'13		
0	0	0	0	0	0	0	350	0				0	0	0	0	0	0	0	250	0	0	0	0	350	8/15/2012
							32.7												33.8					208	3/5/2008
																			33.8					199	3/9/2010
							6.96												7.45					8.87	8/21/2009
																			7.45					8.5	3/9/2010
							24.6												21.8					56.9	8/21/2009
																			21.8					24.1	8/17/2010
							7.31												8.4					12.1	3/5/2008
																			8.4					11.79	3/9/2010
							19.1												33					130	3/5/2008
							6.71												11.6					13.8	7/14/2010
							ND												ND					0.9	9/15/2011
							0.014												0.0397					30.8	9/15/2011
							0.338												ND					5.1	7/15/2010
							0.001700												ND					0.0366	7/15/2010
							0.357												0.522					1.54	3/9/2010
							8																	100	1/19/2011
							ND												0.0236					14.3	3/9/2010
																			1.55					1.57	5/15/2010
																			17					47.8	3/9/2010
																			ND					0.0996	4/21/2010
																			8.47					14.2	7/14/2010
																			0.615					1.33	6/16/2010
																			1.25					3.34	8/17/2010
																			0.178					1.28	4/21/2010
																			6.65					51.8	3/9/2010
																			1.26					1.88	3/9/2010

Sample Month and Results												Sample Month and Results													
Jan.'12	Feb.'12	Mar'.12	Apr.'12	May'12	June'12	July'12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Jan.'13	Feb.'13	Mar.'13	Apr.'13	May'13	June'13	July'13	Aug.'13	09/15/13	Oct.'13	Nov.'13	Dec.'13		
																								0	
							11												12.8					82	3/5/2008
																			ND					0	
																			ND					0	
																			ND					0	
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Sample Month and Results												Sample Month and Results													
Jan.'12	Feb.'12	Mar'.12	Apr.'12	May'12	June'12	July'12	08/15/12	Sept.'12	Oct.'12	Nov.'12	Dec.'12	Jan.'13	Feb.'13	Mar.'13	Apr.'13	May'13	June'13	July'13	Aug.'13	09/15/13	Oct.'13	Nov.'13	Dec.'13		
																			ND					0	
																			ND					0.018	7/14/2010
																			ND					0	
																			ND					0	
																			ND					0	
																			ND					0	
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																			ND					0	
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																			ND					0	
																			ND					0	
																			ND					0	
																			ND					0	
																								0	
																			21					21	Aug-13
							9.4												6.42					23.7	7/14/2010
							2.49												39.3					39.3	Aug-13
							46.5												500					1300	03/15/20100
							70												97.5					500	5/18/2011
							90(5)												95					100	8/1/2006
							100												100					100	8/1/2006
							100																	100	8/1/2006
																								97.5	7/5/2007
																								0.65	9/22/2010
																								0	

Deer Creek at Road 248

558DCR248 - Deer Creek at Road 248

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	Jul 10	08/17/10	Sept 10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/19/11	Aug '11	Sept '11	Oct '11	11/16/11	12/21/11	1/18/12	2/22/12	3/14/12	4/18/12	05/17/12	June '12	July '12	Aug. '12	Sept.'12	Oct'12	Nov'12	Dec'12
Flow	Field				cfs	0	0	40	25	25	8							35	22	100	40	75	35	5	0	0	0	12	9	8	10	10	40	6	0	0	0	0			
EC	Field	700			umhos/cm			214	198.5	180.6	181.3							199.4	215.9	174.4	163.9	147.5	172.2	208.5				257	266	283	252	250	177.9	216.8							
EC dup	FGL	700			umhos/cm			214	198.5	180.6	181.3																														
pH	Field	6.5-8.3			pH			8.12	8.06	7.81	7.99							7.99	8.14	7.88	8.13	7.7	8.09	8.14				8.24	8.4	8.53	8.46	8.24	8.24	8.34							
pH dup	FGL	6.5-8.3			pH			8.12	8.06	7.81	7.99																														
Temperature	Field				Celsius			9.1	18	17.9	29.1							15.2	16.1	22.5	18.1	14.1	30.7	29.5				18.1	12.7	11.7	15.3	20.5	20.1	26.1							
Temperature dup	FGL				Celsius			9.1	18	17.9	29.1																														
Dissolved Oxygen	Field	Min. 7.0			mg/L			11.07	8.61	8.36	7.3							9.5	9.47	8.19	9.1	9.12	7.01	7.2				9.2	9.89	11.11	10.02	8.99	8.59	7.58							
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L			11.07	8.61	8.36	7.3																														
TDS	FGL	450	4.4	10	mg/L			150	136	129	99.2							135	146	118	129	112	113	141				166	151	177	166	175	146	145							
Turbidity	FGL		0.035	0.1	NTU			4.3	8.2	4.04	3.99							7.26	5.16	12	6.84	9.34	2.7	3.72				4.03	1.58	6.06	2.48	6.08	9.62	2.33							
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L			0.6	0.06	0.05	0.03							1	0.4	0.6	0.6	0.1	0.1	0.1				0.2	0.04	0.05	0.1	0.03	0.2	0.1							
Orthophosphate-P	FGL		0.21	0.6	mg/L			0.09	0.0991	0.0773	0.124							0.117	0.14	0.154	0.154	0.143	0.103	0.215				0.0619	0.0587	0.0543	0.0494	0.0379	0.0552	0.0479							
Ammonia-N	FGL	1.5	0.12	0.5	mg/L			ND	0.282	0.264	0.108							ND	ND	0.162	ND	0.171	0.048	ND				ND	ND	ND	ND	ND	ND	ND							
Unionized Ammonia	FGL				mg/L			ND	0.0107	0.00568	ND							ND	ND	0.0056	ND	0.0022	0.0045	ND				ND	ND	ND	ND	ND	ND	ND							
TKN	FGL		0.267	0.5	mg/L			0.981	ND	0.791	0.88							ND	ND	0.103	0.343	0.272	ND	0.283				0.298	0.499	ND	0.352	0.327	0.405	ND							
Color	Field			1	APHA			Slightly Turbid	Brownish Turbid	Clear - Brownish Green	Clear - Slightly Turbid							50	5	70	65	15	43.3	14				12	12	9	14	12	43.3	22.5							
Phosphorus	FGL		8.1	50	ug/L			23.4	36	0.0727	0.0394							0.139	0.0859	0.112	0.125	0.0637	0.0944	0.0638				0.0522	0.0204	ND	ND	0.0272	0.014	0.022							
Arsenic	FGL	10	0.09	0.2	ug/L			2.205	2.36	2	2.15																														
Boron	FGL	700	5	10	ug/L			30.6	31.1	29.1	28.6																														
Cadmium	FGL	5	0.02	0.2	ug/L			ND	0.085	ND	0.035																														
Copper	FGL	1300	0.13	0.5	ug/L			2.82	1.58	2.56	2.29																														
Lead	FGL	15	0.11	0.2	ug/L			0.487	0.599	0.595	0.315																														
Nickel	FGL	100	0.16	0.5	ug/L			1.13	0.514	0.736	0.567																														
Selenium	FGL	50	0.1	1	ug/L			ND	0.299	ND	ND																														
Zinc	FGL		2.3	20	ug/L			34.5	11.1	7.86	4.86																														
Molybdenum	FGL	10	0.07	0.5	ug/L			5.39	4.97	4.4	4.41																														

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	Jul 10	08/17/10	Sept 10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/19/11	Aug '11	Sept '11	Oct '11	11/16/11	12/21/11	1/18/12	2/22/12	3/14/12	4/18/12	05/17/12	June '12	July '12	Aug. '12	Sept.'12	Oct'12	Nov'12	Dec'12
Methoxychlor	CRG	30	0.008	0.01	ug/L			ND	ND	ND	ND																														
Hardness	FGL		1	1	mg/L			75.8	63.9	57.8	57.8							67.9	78.6	66	59.1	51.5	63.6	67.2				94.5	86.4	89.7	91.1	84.5	65.1	81.2							
Atrazine	FGL	1	0.07	0.5	ug/L			ND	ND	ND	ND																														
Cyanazine	FGL	1	0.09	0.5	ug/L			ND	ND	ND	ND																														
Simazine	FGL	4	0.08	0.5	ug/L			ND	ND	ND	ND																														
Methamidophos	APPL	0.35	0.01	0.2	ug/L			ND	ND	ND	ND																														
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L			ND	ND	ND	ND																														
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L			ND	ND	ND	ND																														
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L			ND	ND	ND	ND																														
Dicofol	APPL/FGL		0.01	0.1	ug/L			ND	ND	ND	ND																														
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L			ND	ND	ND	ND																														
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L			ND	ND	ND	ND																														
Bifenthrin	CRG		0.006	0.02	ug/L			ND					ND																												
Cyfluthrin	CRG		0.003	0.03	ug/L			ND					ND																												
Cypermethrin	CRG		0.004	0.05	ug/L			ND					ND																												
Esfenvalerate	CRG		0.002	0.02	ug/L			1.2					ND																												
Fenpropthrin			0.006	0.02	ug/L								ND																												
Lamba cyhalothrin	CRG		0.02	0.02	ug/L			ND					ND																												
Permethrin	CRG		0.009	0.02	ug/L			ND					ND																												
Aldicarb	APPL	3	0.2	0.4	ug/L			ND	ND	ND	ND																														
Carbaryl	APPL	2.53	0.05	0.07	ug/L			ND	ND	ND	ND																														
Carbofuran	APPL	0.5	0.05	0.07	ug/L			ND	ND	ND	ND																														
Diuron	APPL	2	0.2	0.4	ug/L			ND	ND	ND	ND																														
Linuron	APPL	1.4	0.2	0.4	ug/L			ND	ND	ND	ND																														
Methiocarb	APPL	5	0.2	0.4	ug/L			ND	ND	ND	ND																														
Methomyl	APPL	0.52	0.05	0.07	ug/L			ND	ND	ND	ND																														
Oxamyl	APPL	50	0.2	0.4	ug/L			ND	ND	ND	ND																														
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L			ND	ND	ND	ND																														

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/16/10	Jul 10	08/17/10	Sept 10	Oct 10	Nov 10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/19/11	Aug '11	Sept '11	Oct '11	11/16/11	12/21/11	1/18/12	2/22/12	3/14/12	4/18/12	05/17/12	June '12	July '12	Aug. '12	Sept.'12	Oct'12	Nov'12	Dec'12
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L			ND	ND	ND	ND																														
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L			ND	ND	ND	ND																														
Demeton-S	APPL		0.01	0.1	ug/L			ND	ND	ND	ND																														
Diazinon	APPL	0.1	0.004	0.02	ug/L			ND	ND	ND	ND																														
Dichlorvos	APPL	0.085	0.02	0.1	ug/L			ND	ND	ND	ND																														
Dimethoate	APPL	1	0.08	0.1	ug/L			ND	ND	ND	ND																														
Disulfoton	APPL	0.05	0.02	0.1	ug/L			ND	ND	ND	ND																														
Malathion	APPL	0.1	0.05	0.1	ug/L			ND	ND	ND	ND																														
Methidathion	APPL	0.7	0.04	0.1	ug/L			ND	ND	ND	ND																														
Molinate	FGL	13	0.13	0.5	ug/L			ND																																	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L			ND	ND	ND	ND																														
Phorate	APPL	0.7	0.072	0.1	ug/L			ND	ND	ND	ND																														
Phosmet	APPL	140	0.06	0.2	ug/L			ND	ND	ND	ND																														
Thiobencarb	FGL	3.1	0.06	0.5	ug/L			ND																																	
Glyphosate	FGL	700	4	5	ug/L			ND	ND	ND	ND																														
Paraquat	N Coast	3.2	0.21	0.4	ug/L			ND	ND	ND	ND																														
Trifluralin	APPL	5	0.036	0.05	ug/L			ND	ND	ND	ND																														
TSS	FGL		na	10	mg/L			574	29.6	120	9.62							10	9.35	22.4	21.2	21.4	8.64	24				13.5	4.75	16	11.4	23.1	20.8	6.57							
TOC	FGL		0.13	0.5	mg/L			7.2	5.27	4.82	3.62							5.38	4.3	4.98	4.98	4.23	3.22	2.55				2.4	1.65	1.82	1.86	2.11	5.73	3							
E. coli	FGL	235		1.1	MPN			276	1990	921	308							80	80	500	80	1203.3	800	547.5				1700	387.3	137.6	224.7	700	980.4	700							
Fecal Coliform	FGL	400		1.1	MPN			140	5000	1300	500							103.9	81.3	290.9	206	500	613	300				1986.3	230	230	230	2419.2	700	1119.9							
Toxicity, minnow	ABC				96h			100	95[5]	100	100							100	95[5]	100	95[5]	100	100	95[5]				100	100	100	95[5]	95[5]	100	100							
Toxicity, water flea	ABC				48h			100	100	100	100							100	100	95[5]	100	100	100	100				100	100	100	100	90[5]	100	100							
Toxicity, algae	ABC				48h			100	100	100	100							100	100	100	100	100	100	100				100	100	100	100	100	100	100							
Hyalella Azteca					10d								100																												
TOC													0.2																												
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

{5} No significant difference from control

558DCR248 - Deer Creek at Road 248

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	2/19/13	3/19/13	April '13	May '13	June '13	July '13	Aug '13	Sept '13	Oct '13	Nov '13	Dec '13	Maximum Sample Result	Date of Max Sample
Flow	Field				cfs	0	8	4	4	0	0	0	0	0	0	0	0	100	3/15/2011
EC	Field	700			umhos/cm		267	256	284									284	Apr-13
EC dup	FGL	700			umhos/cm		267	256	279									279	Apr-13
pH	Field	6.5-8.3			pH		8.4	8.89	8.73									8.89	3/19/2013
pH dup	FGL	6.5-8.3			pH		8.4	8.89	8.84									8.89	3/19/2013
Temperature	Field				Celsius		12.6	25.6	20.9									30.7	6/15/2011
Temperature dup	FGL				Celsius		12.6	25.6	20.7									29.1	6/16/2010
Dissolved Oxygen	Field	Min. 7.0			mg/L		10.66	8.88	9.37									11.11	1/18/2012
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L		10.66	8.88	9.37									11.07	3/9/2010
TDS	FGL	450	4.4	10	mg/L		158	166	398									398	Apr-14
Turbidity	FGL		0.035	0.1	NTU		5.24	2.88	5.25									12	3/15/2011
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L		0.05	ND	0.04									1	1/19/2011
Orthophosphate-P	FGL		0.21	0.6	mg/L		0.0403	0.043	0.0282									0.215	7/19/2011
Ammonia-N	FGL	1.5	0.12	0.5	mg/L		ND	ND	ND									0.282	4/20/2010
Unionized Ammonia	FGL				mg/L		ND	ND	ND									0.0107	4/20/2010
TKN	FGL		0.267	0.5	mg/L		0.443	0.478	0.843									0.981	3/9/2010
Color	Field			1	APHA													70	3/15/2011
Phosphorus	FGL		8.1	50	ug/L		ND	ND	0.0501									36	4/20/2010
Arsenic	FGL	10	0.09	0.2	ug/L		1.71	1.98	1.93									2.36	4/20/2010
Boron	FGL	700	5	10	ug/L		37.4	93.7	61.7									93.7	3/19/2013
Cadmium	FGL	5	0.02	0.2	ug/L		0.032	0.056	0.047									0.085	3/9/2010
Copper	FGL	1300	0.13	0.5	ug/L		2.03	3.82	2.96									3.82	3/19/2013
Lead	FGL	15	0.11	0.2	ug/L		0.584	3.42	5.43									5.43	Apr-13
Nickel	FGL	100	0.16	0.5	ug/L		0.654	3.84	1.46									3.84	3/19/2013
Selenium	FGL	50	0.1	1	ug/L		ND	ND	ND									0.299	4/20/2010
Zinc	FGL		2.3	20	ug/L		14.8	23.5	12.8									34.5	3/9/2010
Molybdenum	FGL	10	0.07	0.5	ug/L		8.15	7.72	8.15									8.15	2/19/2013

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	2/19/13	3/19/13	April '13	May '13	June '13	July '13	Aug '13	Sept '13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG	30	0.008	0.01	ug/L													0	
Hardness	FGL		1	1	mg/L		95.5	84.8	90.5									95.5	2/19/2013
Atrazine	FGL	1	0.07	0.5	ug/L		ND	ND	ND									0	
Cyanazine	FGL	1	0.09	0.5	ug/L		ND	ND	ND									0	
Simazine	FGL	4	0.08	0.5	ug/L		ND	ND	ND									0	
Methamidophos	APPL	0.35	0.01	0.2	ug/L		ND	ND	ND									0	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L		ND	ND	ND									0	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L		ND	ND	ND									0	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L		ND	ND	ND									0	
Dicofol	APPL/FGL		0.01	0.1	ug/L		ND	ND	ND									0	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L		ND	ND	ND									0	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L		ND	ND	ND									0	
Bifenthrin	CRG		0.006	0.02	ug/L			ND										0	
Cyfluthrin	CRG		0.003	0.03	ug/L			ND										0	
Cypermethrin	CRG		0.004	0.05	ug/L			ND										0	
Esfenvalerate	CRG		0.002	0.02	ug/L			ND										1.2	3/9/2010
Fenpropthrin			0.006	0.02	ug/L			ND										0	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L			ND										0	
Permethrin	CRG		0.009	0.02	ug/L			ND										0	
Aldicarb	APPL	3	0.2	0.4	ug/L		ND	ND	ND									0	
Carbaryl	APPL	2.53	0.05	0.07	ug/L		ND	ND	ND									0	
Carbofuran	APPL	0.5	0.05	0.07	ug/L		ND	ND	ND									0	
Diuron	APPL	2	0.2	0.4	ug/L		ND	ND	ND									0	
Linuron	APPL	1.4	0.2	0.4	ug/L		ND	ND	ND									0	
Methiocarb	APPL	5	0.2	0.4	ug/L		ND	ND	ND									0	
Methomyl	APPL	0.52	0.05	0.07	ug/L		ND	ND	ND									0	
Oxamyl	APPL	50	0.2	0.4	ug/L		ND	ND	ND									0	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L		ND	ND	ND									0	

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	2/19/13	3/19/13	April '13	May '13	June '13	July '13	Aug '13	Sept '13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L		ND	ND	ND									0	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L		ND	ND	ND									0	
Demeton-S	APPL		0.01	0.1	ug/L		ND	ND	ND									0	
Diazinon	APPL	0.1	0.004	0.02	ug/L		ND	ND	ND									0	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L		ND	ND	ND									0	
Dimethoate	APPL	1	0.08	0.1	ug/L		ND	ND	ND									0	
Disulfoton	APPL	0.05	0.02	0.1	ug/L		ND	ND	ND									0	
Malathion	APPL	0.1	0.05	0.1	ug/L		ND	ND	ND									0	
Methidathion	APPL	0.7	0.04	0.1	ug/L		ND	ND	ND									0	
Molinate	FGL	13	0.13	0.5	ug/L													0	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L		ND	ND	ND									0	
Phorate	APPL	0.7	0.072	0.1	ug/L		ND	ND	ND									0	
Phosmet	APPL	140	0.06	0.2	ug/L		ND	ND	ND									0	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L													0	
Glyphosate	FGL	700	4	5	ug/L		ND	ND	ND									0	
Paraquat	N Coast	3.2	0.21	0.4	ug/L		ND	ND	ND									0	
Trifluralin	APPL	5	0.036	0.05	ug/L		ND	ND	ND									0	
TSS	FGL		na	10	mg/L		9.4	9.35	15.1									574	3/9/2010
TOC	FGL		0.13	0.5	mg/L		3.94	4.91	3.64									7.2	3/9/2010
E. coli	FGL	235		1.1	MPN		300	155.3	>2419.2									1990	4/20/2010
Fecal Coliform	FGL	400		1.1	MPN		344.1	300	2300									5000	4/20/2010
Toxicity, minnow	ABC				96h		100	100	100									100	3/9/2010
Toxicity, water flea	ABC				48h		100	100	100									100	3/9/2010
Toxicity, algae	ABC				48h		100	100	100									100	3/9/2010
Hyalella Azteca					10d			72.5[5]										100	8/17/2010
TOC								ND										0.2	8/17/2010
Control Result																		0	

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control

{5} No significant difference from control

Deer Creek at Road 176

558DCR178 - Deer Creek at Road 176

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	April 08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	Oct 09	Nov 09	Dec 09
						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Flow	Field				cfs								235	120						75				150										265		200	115				
EC	Field	700			umhos/cm								21	20.2						50.4				35.5										110.5		31.2	30.3				
EC dup	FGL	700			umhos/cm																																					
pH	Field	6.5-8.3			pH								7.1	7.1						7.81				7.6										7.33		7.36	7.54				
pH dup	FGL	6.5-8.3			pH																																					
Temperature	Field				Celsius								22	23.7						15.7				26.9										17.7		23.4	24.3				
Temperature dup	FGL				Celsius																																					
Dissolved Oxygen	Field	Min. 7.0			mg/L								8.2	7.4						8.9				9.9										8.5		8.21	7.69				
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																																					
TDS	FGL	450	4.4	10	mg/L								ND	1.5						ND				29										19.8		18.3	30				
Turbidity	FGL		0.035	0.1	NTU								1.3	0.8						2.8				2.5										12.5		10.1	1.9				
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND	ND						0.2				ND										ND		ND	ND				
Orthophosphate-P	FGL		0.21	0.6	mg/L								ND	ND						ND				ND										0.02		0.0187	ND				
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								ND	ND						ND				ND										ND		ND	ND				
Unionized Ammonia	FGL				mg/L															ND				ND										ND		ND	ND				
TKN	FGL		0.267	0.5	mg/L								1.2	ND						ND				0.6										0.202		0.439	ND				
Color	Field			1	APHA								5	10						25				Slightly Turbid										Slightly Turbid		Slightly Turbid	Clear				
Phosphorus	FGL		8.1	50	ug/L								ND	ND						ND				ND										0.014		ND	ND				
Arsenic	FGL	10	0.09	0.2	ug/L								ND	ND						ND				ND										0.0018		0.00135	0.002				
Boron	FGL	700	5	10	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cadmium	FGL	5	0.02	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
Copper	FGL	1300	0.13	0.5	ug/L								0.006	0.008						0.0267				0.008										0.00504		0.0058	0.006				
Lead	FGL	15	0.11	0.2	ug/L								0.0004	0.0002						ND				0.0006										0.00112		0.00708	0.0004				
Nickel	FGL	100	0.16	0.5	ug/L								ND	ND						ND				0.001										ND		ND	ND				
Selenium	FGL	50	0.1	1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Zinc	FGL		2.3	20	ug/L								ND	0.07						ND				ND										0.01		0.0217	0.01				
Molybdenum	FGL	10	0.07	0.5	ug/L															ND				ND										ND		ND	ND				

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	April 08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	Oct 09	Nov 09	Dec 09
						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Hardness	FGL		1	1	mg/L								4.99	4.99						9				7.49										9.98		4.99	4.99				
Atrazine	FGL	1	0.07	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cyanazine	FGL	1	0.09	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Simazine	FGL	4	0.08	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methamidophos	APPL	0.35	0.01	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dicofol	APPL/FGL		0.01	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Bifenthrin	CRG		0.006	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cyfluthrin	CRG		0.003	0.03	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cypermethrin	CRG		0.004	0.05	ug/L								ND	ND						ND				ND										ND		ND	ND				
Esfenvalerate	CRG		0.002	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Fenpropthrin			0.006	0.02	ug/L																																					
Lamba cyhalothrin	CRG		0.02	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Permethrin	CRG		0.009	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Aldicarb	APPL	3	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Carbaryl	APPL	2.53	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Carbofuran	APPL	0.5	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Diuron	APPL	2	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Linuron	APPL	1.4	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methiocarb	APPL	5	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methomyl	APPL	0.52	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Oxamyl	APPL	50	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	April 08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	Oct 09	Nov 09	Dec 09
						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Demeton-S	APPL		0.01	0.1	ug/L															ND				ND										ND		ND	ND				
Diazinon	APPL	0.1	0.004	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dichlorvos	APPL	0.085	0.02	0.1	ug/L															ND				ND										ND		ND	ND				
Dimethoate	APPL		0.08	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Disulfoton	APPL	0.05	0.02	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Malathion	APPL	0.1	0.05	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methidathion	APPL	0.7	0.04	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Molinate	FGL	13	0.13	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Phorate	APPL	0.7	0.072	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Phosmet	APPL	140	0.06	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
Thiobencarb	FGL	3.1	0.06	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Glyphosate	FGL	700	4	5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Trifluralin	APPL	5	0.036	0.05	ug/L															ND				ND										ND		ND	ND				
TSS	FGL		na	10	mg/L															0				13										32.5		21	2.4				
TOC	FGL		0.13	0.5	mg/L								2	1.5						1.5				1.7										2.41		1.53	1.7				
E. coli	FGL	235		1.1	MPN								63	22						44				156										28		18	22				
Fecal Coliform	FGL	400		1.1	MPN								80	80						30				50										50		50	70				
Toxicity, minnow	ABC				96h								90	100						90				$95^{(5)}$										$75^{(5)}$		100	100				
Toxicity, water flea	ABC				48h								100	**100**						100				100										$75^{(5)}$		$75^{(5)}$	100				
Toxicity, algae	ABC				48h								100	100						100				100										100		100	100				
Sediment Results					10d									97.5						97.5				67.5													92.5				
Test Result																																									
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

(5) No significant difference from control

558DCR178 - Deer Creek at Road 176

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/17/10	Field Dup 06/17/10	07/14/10	Field Dup 07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	Sample Month and Results: 01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11
Flow	Field				cfs			5	45	170	120		120							40	48	85	85	175	195	190	160	120	90	0	0
EC	Field	700			umhos/cm			211	81	52.2	30.4		22.3		20.5					176	48.9	138.2	126.4	66.4	39.5/69.5	17.47	22.4	21.5	21.7		
EC dup	FGL	700			umhos/cm			211	81	52.2	30.1		22.3		20.5																
pH	Field	6.5-8.3			pH			8.17	7.63	7.64	7.41		6.98		7.22					8	8.07	7.92	8.21	7.59	7.71	7.6	7.56	7.27	7.27		
pH dup	FGL	6.5-8.3			pH			8.17	7.63	7.64	7.38		6.98		7.22																
Temperature	Field				Celsius			10.3	17.4	16.4	24.9		19.4		25.9					11.3	13.7	14.7	12.4	14.9	21.1	20.6	21.7	20.9	20.6		
Temperature dup	FGL				Celsius			10.3	17.4	16.4	19.8		19.4		25.9																
Dissolved Oxygen	Field	Min. 7.0			mg/L			10.57	9.01	8.96	8.48		8.49		7.64					10.3	10.63	9.89	9.86	9.26	8.38	8.23	8.09	8.23	8.63		
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L			10.57	9.01	8.96	8.64		8.49		7.64																
TDS	FGL	450	4.4	10	mg/L			130	43.9	39	21.4	21.3	17.6	14.2	21					112	36.3	98.4	102	51.9	45.3	30.9	14.4	33.3	ND		
Turbidity	FGL		0.035	0.1	NTU			6.4	2.2	2.14	5.99	8.02	3.18	4.47	2.06					16.1	4.91	12.4	6.26	4.39	3.14	3.33	1.19	1.29	1.5		
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L			0.5	ND	0.04	ND	ND	ND	ND	ND					1.1	ND	0.5	0.4	0.05	0.3	0.03	0.04	0.05	0.05		
Orthophosphate-P	FGL		0.21	0.6	mg/L			0.1	0.0409	0.0409	0.0347	0.0272	0.019	0.0177	0.0115					0.137	0.056	0.159	0.134	0.0769	0.0319	0.154	0.0292	0.014	0.0105		
Ammonia-N	FGL	1.5	0.12	0.5	mg/L			ND	ND	ND	ND	ND	ND	ND	ND					ND	ND	0.086	0.084	0.158	0.055	0.048	ND	ND	0.188		
Unionized Ammonia	FGL				mg/L			ND	ND	ND	ND		ND		ND					ND	ND	0.0019	0.003	0.0017	0.0012	0.00078	ND	ND	0.00144		
TKN	FGL		0.267	0.5	mg/L			0.819	ND	0.462	0.895	0.914	ND	ND	0.569					ND	ND	0.206	ND	0.402	ND	0.245	0.774	0.246	0.751		
Color	Field			1	APHA			Slightly Turbid	Clear Greenish	Clear - Greenish Tan	Clear - Greenish		Clear - Greenish		Clear - Pale Greenish					150	5	10	60	13	13	12	12	8	10		
Phosphorus	FGL		8.1	50	ug/L			0.0114	ND	0.028	0.188	0.106	0.0264	0.0605	ND					0.268	0.0718	0.054	0.129	0.0209	0.0352	ND	ND	ND	ND		
Arsenic	FGL	10	0.09	0.2	ug/L			2.042	2.26	1.71	1.48	1.52	1.04	1.04	1.4																
Boron	FGL	700	5	10	ug/L			29.1	24.5	19	10.9	20.8	ND	ND	8.88																
Cadmium	FGL	5	0.02	0.2	ug/L			0.044	0.084	ND	0.033	0.078	ND	0.035	0.023																
Copper	FGL	1300	0.13	0.5	ug/L			3.57	2.48	6.53	11.3	10.4	15.1	14.4	4.1																
Lead	FGL	15	0.11	0.2	ug/L			0.395	0.364	0.751	0.649	0.495	0.493	0.508	1.13																
Nickel	FGL	100	0.16	0.5	ug/L			0.955	0.105	1.28	1.33	1.14	ND	ND	1.05																
Selenium	FGL	50	0.1	1	ug/L			ND	ND	ND	0.117	0.188	ND	ND	0.345																
Zinc	FGL		2.3	20	ug/L			10.9	8.13	8.68	8.92	10.5	5.71	7.13	25.2																
Molybdenum	FGL	10	0.07	0.5	ug/L			5.47	1.66	1.03	0.837	0.902	ND	ND	0.821																

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/17/10	Field Dup 06/17/10	07/14/10	Field Dup 07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	Sample Month and Results: 01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Hardness	FGL		1	1	mg/L			71.9	13.2	14.7	9.55	9.01	6.36	5.88	6.11					64.6	18.7	52.8	48.8	22.4	13.3	10.1	10.2	7.1	7.31		
Atrazine	FGL	1	0.07	0.5	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Cyanazine	FGL	1	0.09	0.5	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Simazine	FGL	4	0.08	0.5	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Methamidophos	APPL	0.35	0.01	0.2	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Dicofol	APPL/FGL		0.01	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Bifenthrin	CRG		0.006	0.02	ug/L			ND																							
Cyfluthrin	CRG		0.003	0.03	ug/L			ND																							
Cypermethrin	CRG		0.004	0.05	ug/L			ND																							
Esfenvalerate	CRG		0.002	0.02	ug/L			1.6																							
Fenpropthrin			0.006	0.02	ug/L																										
Lamba cyhalothrin	CRG		0.02	0.02	ug/L			ND																							
Permethrin	CRG		0.009	0.02	ug/L			ND																							
Aldicarb	APPL	3	0.2	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Carbaryl	APPL	2.53	0.05	0.07	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Carbofuran	APPL	0.5	0.05	0.07	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Diuron	APPL	2	0.2	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Linuron	APPL	1.4	0.2	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Methiocarb	APPL	5	0.2	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Methomyl	APPL	0.52	0.05	0.07	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Oxamyl	APPL	50	0.2	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan 10	Feb 10	03/09/10	04/20/10	05/18/10	06/17/10	Field Dup 06/17/10	07/14/10	Field Dup 07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	Sample Month and Results: 01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L			0.022	0.007	ND	0.008	0.0074	ND	ND	ND																
Demeton-S	APPL		0.01	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Diazinon	APPL	0.1	0.004	0.02	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Dichlorvos	APPL	0.085	0.02	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Dimethoate	APPL		0.08	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Disulfoton	APPL	0.05	0.02	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Malathion	APPL	0.1	0.05	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Methidathion	APPL	0.7	0.04	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Molinate	FGL	13	0.13	0.5	ug/L			ND																							
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Phorate	APPL	0.7	0.072	0.1	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Phosmet	APPL	140	0.06	0.2	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Thiobencarb	FGL	3.1	0.06	0.5	ug/L			ND																							
Glyphosate	FGL	700	4	5	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
Trifluralin	APPL	5	0.036	0.05	ug/L			ND	ND	ND	ND	ND	ND	ND	ND																
TSS	FGL		na	10	mg/L			3	4	21	21.4	17.9	32.8	28.4	6.35					17.5	6.2	13.9	23.5	16.3	6.63	9.54	7.2	3.01	3.35		
TOC	FGL		0.13	0.5	mg/L			7.9	2.38	2.8	1.78	1.7	0.581	0.522	1.43					5.82	2.84	4.34	3.92	2.88	2.3	2.13	1.33	2.36	1.09		
E. coli	FGL	235		1.1	MPN			119	66.3	65.7	41.3	44.8	33.6	21.6	118					50	50	300	110	307.6	300	23.1	11	30	80		
Fecal Coliform	FGL	400		1.1	MPN			300	30	80	80	110	23	50	110					62	65.7	325.5	13.9	170	105	13	8	23.8	23.3		
Toxicity, minnow	ABC				96h			100	100	100	100		100		100					100	100	100	100	75[3]	100	100	20[6]	100	95[3]		
Toxicity, water flea	ABC				48h			100	100	100	100		**100**		100					100	100	100	100	95[3]	100	100	90[3]	100	100		
Toxicity, algae	ABC				48h			100	100	100	100		100		100					100	100	100	100	100	100	100	100	100	100		
Sediment Results					10d											77.5[3]		75[3]													
Test Result																ND															
Control Result																															

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.17

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.17

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.14

(5) No significant difference from control

558DCR178 - Deer Creek at Road 176

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan '12	Feb '12	March '12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13	Maximum Sample Result	Date of Max Sample
						Sample Month and Results									Sample Month and Results													
Flow	Field				cfs	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	175	0	0	0	0	265	5/11/2009
EC	Field	700			umhos/cm				189.8													29.9					211	3/9/2010
EC dup	FGL	700			umhos/cm																	29.9					211	3/9/2010
pH	Field	6.5-8.3			pH				8.28													7.49					8.28	4/18/2012
pH dup	FGL	6.5-8.3			pH																	7.49					8.17	3/9/2010
Temperature	Field				Celsius				19.3													24.3					26.9	7/9/2008
Temperature dup	FGL				Celsius																	24.3					25.9	8/17/2010
Dissolved Oxygen	Field	Min. 7.0			mg/L				8.47													8.1					10.63	2/14/2011
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																	8.1					10.57	3/9/2010
TDS	FGL	450	4.4	10	mg/L				146													26.9					146	4/18/2012
Turbidity	FGL		0.035	0.1	NTU				9.24													7.7					16.1	4/19/2011
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L				0.2													ND					1.1	1/19/2011
Orthophosphate-P	FGL		0.21	0.6	mg/L				0.0783													0.0207					0.159	3/15/2011
Ammonia-N	FGL	1.5	0.12	0.5	mg/L				ND													ND					0.188	10/18/2011
Unionized Ammonia	FGL				mg/L				ND													ND					0.003	4/14/2011
TKN	FGL		0.267	0.5	mg/L				0.417													0.58					1.2	Aug-06
Color	Field			1	APHA				60																		150	1/19/2011
Phosphorus	FGL		8.1	50	ug/L				0.0652													ND					0.268	1/19/2011
Arsenic	FGL	10	0.09	0.2	ug/L																	1.59					2.26	4/20/2010
Boron	FGL	700	5	10	ug/L																	17					29.1	3/9/2010
Cadmium	FGL	5	0.02	0.2	ug/L																	ND					0.084	4/20/2010
Copper	FGL	1300	0.13	0.5	ug/L																	9.36					15.1	7/14/2010
Lead	FGL	15	0.11	0.2	ug/L																	0.578					1.13	8/17/2010
Nickel	FGL	100	0.16	0.5	ug/L																	1.25					1.33	6/17/2010
Selenium	FGL	50	0.1	1	ug/L																	0.165					0.345	8/17/2010
Zinc	FGL		2.3	20	ug/L																	5.66					25.2	8/17/2010
Molybdenum	FGL	10	0.07	0.5	ug/L																	1.38					5.47	3/9/2010

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan '12	Feb '12	March '12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
						Sample Month and Results									Sample Month and Results													
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																						0	
Hardness	FGL		1	1	mg/L				65.2													10.7					71.9	3/9/2010
Atrazine	FGL	1	0.07	0.5	ug/L																	ND					0	
Cyanazine	FGL	1	0.09	0.5	ug/L																	ND					0	
Simazine	FGL	4	0.08	0.5	ug/L																	ND					0	
Methamidophos	APPL	0.35	0.01	0.2	ug/L																	ND					0	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L																	ND					0	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L																	ND					0	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L																	ND					0	
Dicofol	APPL/FGL		0.01	0.1	ug/L																	ND					0	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L																	ND					0	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L																	ND					0	
Bifenthrin	CRG		0.006	0.02	ug/L																		ND				0	
Cyfluthrin	CRG		0.003	0.03	ug/L																		ND				0	
Cypermethrin	CRG		0.004	0.05	ug/L																		ND				0	
Esfenvalerate	CRG		0.002	0.02	ug/L																		ND				1.6	3/9/2010
Fenpropthrin			0.006	0.02	ug/L																		ND				0	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L																		ND				0	
Permethrin	CRG		0.009	0.02	ug/L																		ND				0	
Aldicarb	APPL	3	0.2	0.4	ug/L																	ND					0	
Carbaryl	APPL	2.53	0.05	0.07	ug/L																	ND					0	
Carbofuran	APPL	0.5	0.05	0.07	ug/L																	ND					0	
Diuron	APPL	2	0.2	0.4	ug/L																	ND					0	
Linuron	APPL	1.4	0.2	0.4	ug/L																	ND					0	
Methiocarb	APPL	5	0.2	0.4	ug/L																	ND					0	
Methomyl	APPL	0.52	0.05	0.07	ug/L																	ND					0	
Oxamyl	APPL	50	0.2	0.4	ug/L																	ND					0	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L																	ND					0	

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan '12	Feb '12	March '12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
						Sample Month and Results									Sample Month and Results													
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																	ND					0	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L																	ND					0.022	3/9/2010
Demeton-S	APPL		0.01	0.1	ug/L																	ND					0	
Diazinon	APPL	0.1	0.004	0.02	ug/L																	ND					0	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																	ND					0	
Dimethoate	APPL		0.08	0.1	ug/L																	ND					0	
Disulfoton	APPL	0.05	0.02	0.1	ug/L																	ND					0	
Malathion	APPL	0.1	0.05	0.1	ug/L																	ND					0	
Methidathion	APPL	0.7	0.04	0.1	ug/L																	ND					0	
Molinate	FGL	13	0.13	0.5	ug/L																	ND					0	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L																	ND					0	
Phorate	APPL	0.7	0.072	0.1	ug/L																	ND					0	
Phosmet	APPL	140	0.06	0.2	ug/L																	ND					0	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L																	ND					0	
Glyphosate	FGL	700	4	5	ug/L																	ND					0	
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L																	ND					0	
Trifluralin	APPL	5	0.036	0.05	ug/L																	ND					0	
TSS	FGL		na	10	mg/L				12.5													18.2					32.8	7/14/2010
TOC	FGL		0.13	0.5	mg/L				6.63													3.65					7.9	3/9/2010
E. coli	FGL	235		1.1	MPN				866.4															19.9			866.4	4/18/2012
Fecal Coliform	FGL	400		1.1	MPN				700															220			700	4/18/2012
Toxicity, minnow	ABC				96h				100															97.5			100	3/9/2010
Toxicity, water flea	ABC				48h				100															100			100	3/9/2010
Toxicity, algae	ABC				48h				100															100			100	3/9/2010
Sediment Results					10d																						97.5	Sep-06
Test Result																											0	
Control Result																											0	

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.17

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.17

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.14

{5} No significant difference from control

Deer Creek at Road 120

558DCR120 - Deer Creek at Road 120

Sample Month and Results

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May'06	June'06	July'06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	Apr.08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	March 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	10/22/09	Nov 09	Dec 09
Flow	Field				cfs								58	20						7				100										150		35	65				
EC	Field	700			umhos/cm								20.1	24.1						50.6				39.7										111.8		32.2	30.6				
EC dup	FGL	700			umhos/cm																																				
pH	Field	6.5-8.3			pH								7.1	7						7.22				7.43										7.27		7.68	7.75				
pH dup	FGL	6.5-8.3			pH																																				
Temperature	Field				Celsius								23.9	26.4						16.4				32.2										18.4		28.6	28.9				
Temperature dup	FGL				Celsius																																				
Dissolved Oxygen	Field	Min. 7.0			mg/L								8.2	7.9						9.8				8.1										8.7		8.36	7.89				
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																																				
TDS	FGL	450	4.4	10	mg/L								ND	ND						ND				35										40.3		24.3	20				
Turbidity	FGL		0.035	0.1	NTU								2.2	1.4						3.1				4.2										9		8.67	2.4				
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND	ND						0.3				ND										ND		ND	ND				
Orthophosphate-P	FGL		0.21	0.6	mg/L								ND	ND						ND				ND										0.05		0.0175	ND				
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								ND	ND						ND				ND										ND		ND	ND				
Unionized Ammonia	FGL				mg/L															ND				ND										ND		ND	ND				
TKN	FGL		0.267	0.5	mg/L								0.9	ND						ND				0.06										0.259		1.65	ND				
Color	Field			1	APHA								10	10						25				Turbid										Slightly Turbid		Turbid	Slightly Turbid				
Phosphorus	FGL		8.1	50	ug/L								0.02	ND						ND				ND										0.0106		ND	ND				
Arsenic	FGL	10	0.09	0.2	ug/L								ND	ND						ND				ND										0.00172		0.00165	0.002				
Boron	FGL	700	5	10	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cadmium	FGL	5	0.02	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
Copper	FGL	1300	0.13	0.5	ug/L								0.008	0.01						ND				0.005										0.0043		0.00582	0.006				
Lead	FGL	15	0.11	0.2	ug/L								0.0003	0.0002						ND				0.0005										0.00083		0.000394	0.0003				
Nickel	FGL	100	0.16	0.5	ug/L								ND	ND						ND				0.001										ND		ND	ND				
Selenium	FGL	50	0.1	1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Zinc	FGL		2.3	20	ug/L								0.01	0.06						ND				0.01										0.0112		0.0195	0.01				
Molybdenum	FGL	10	0.07	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				

Sample Month and Results

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	April 08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	March 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	10/22/09	Nov 09	Dec 09
Methoxychlor	CRG	30	0.008	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Hardness	FGL		1	1	mg/L								4.99	4.99						11				9.98										9.98		7.49	7.49				
Atrazine	FGL	1	0.07	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cyanazine	FGL	1	0.09	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Simazine	FGL	4	0.08	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methamidophos	APPL	0.35	0.01	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dicofol	APPL/FGL		0.01	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Bifenthrin	CRG		0.006	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cyfluthrin	CRG		0.003	0.03	ug/L								ND	ND						ND				ND										ND		ND	ND				
Cypermethrin	CRG		0.004	0.05	ug/L								ND	ND						ND				ND										ND		ND	ND				
Esfenvalerate	CRG		0.002	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Fenpropthrin			0.006	0.02	ug/L																																				
Lamba cyhalothrin	CRG		0.02	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Permethrin	CRG		0.009	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Aldicarb	APPL	3	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Carbaryl	APPL	2.53	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Carbofuran	APPL	0.5	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Diuron	APPL	2	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Linuron	APPL	1.4	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methiocarb	APPL	5	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methomyl	APPL	0.52	0.05	0.07	ug/L								ND	ND						ND				ND										ND		ND	ND				
Oxamyl	APPL	50	0.2	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				

Sample Month and Results

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan.'06	Feb.'06	March'06	April '06	May '06	June '06	July '06	Aug.'06	Sept.'06	Oct.'06	Nov.'06	Dec.'06	Jan 08	Feb 08	03/05/08	April 08	May 08	June 08	07/09/08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	March 09	Apr 09	05/11/09	June 09	07/21/09	08/26/09	Sept 09	10/22/09	Nov 09	Dec 09
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND	ND						ND				ND										ND		ND	ND				
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L								0.014	ND						ND				ND										0.031		0.022	ND				
Demeton-S	APPL		0.01	0.1	ug/L															ND				ND										ND		ND	ND				
Diazinon	APPL	0.1	0.004	0.02	ug/L								ND	ND						ND				ND										ND		ND	ND				
Dichlorvos	APPL	0.085	0.02	0.1	ug/L															ND				ND										ND		ND	ND				
Dimethoate	APPL		0.08	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Disulfoton	APPL	0.05	0.02	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Malathion	APPL	0.1	0.05	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Methidathion	APPL	0.7	0.04	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Molinate	FGL	13	0.13	0.5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Phorate	APPL	0.7	0.072	0.1	ug/L								ND	ND						ND				ND										ND		ND	ND				
Phosmet	APPL	140	0.06	0.2	ug/L								ND	ND						ND				ND										ND		ND	ND				
Thiobencarb	FGL	3.1	0.06	0.5	ug/L								ND	ND						ND				ND										ND		0.121	ND				
Glyphosate	FGL	700	4	5	ug/L								ND	ND						ND				ND										ND		ND	ND				
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L								ND	ND						ND				ND										ND		ND	ND				
Trifluralin	APPL	5	0.036	0.05	ug/L															ND				ND										ND		ND	ND				
TSS	FGL		na	10	mg/L															0				10										19.7		9	2.4				
TOC	FGL		0.13	0.5	mg/L								1.9	1.5						1.7				2.3										2.22		2.02	1.2				
E. coli	FGL	235		1.1	MPN								190	30						2				3										45		10	2				
Fecal Coliform	FGL	400		1.1	MPN								1700	50						2				130										500		80	28				
Toxicity, minnow	ABC				96h								85	100						100				90(5)										85(5)		100	100				
Toxicity, water flea	ABC				48h								100	100						95(5)				100										80(5)		75(5)	100				
Toxicity, algae	ABC				48h								100	100						100				100										100		100	100				
Sediment Results					10d									100						32.5				95(5)															100		
Test Result																																									
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

{5} No significant difference from control

{6} Significant Effect

558DCR120 - Deer Creek at Road 120

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	03/11/10	04/21/10	05/18/10	Jun 10	07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11	Jan '12	Feb '12	March'12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Oct'12	Nov.'12	Dec.'12
Flow	Field				cfs			Pockets of Water	20	120		75						20	35	50	40	85	95	120	95	85	65	0	0	0	0	0	5	0	0	0	0	0			
EC	Field	700			umhos/cm			198.4	58.4	50.4		24.3	23.8					130.1	53.7	147.7	138.2	64	42.1	18.61	20.77	23.6	22.2						216.9								
EC dup	FGL	700			umhos/cm			198.4	58.4	50.4		24.3	23.8																												
pH	Field	6.5-8.3			pH			8.7	7.4	7.48		7.14	8.14					8.01	9	8.8	8.72	7.48	7.75	7.51	7.3	7.11	7.08						8.35								
pH dup	FGL	6.5-8.3			pH			8.7	7.4	7.48		7.14	8.13																												
Temperature	Field				Celsius			16.6	18.9	18.5		25.5	29.5					11.9	15.4	23.8	20.2	15.2	22.5	21.7	22.6	23.5	21.7						21								
Temperature dup	FGL				Celsius			16.6	18.9	18.5		25.5	29.5																												
Dissolved Oxygen	Field	Min. 7.0			mg/L			10.39	7.7	9.46		7.81	8.24					10.2	10.42	8.58	10.07	9.38	8.26	8.44	8.21	7.85	7.73						7.86								
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L			10.39	7.7	9.46		7.81	8.24																												
TDS	FGL	450	4.4	10	mg/L			150	29	57.6		20.7	21.7					146	33.1	113	113	57	46	25.9	19.4	30.7	24.7						160								
Turbidity	FGL		0.035	0.1	NTU			4.1	3.68	5.27		4.45	1.93					25.6	6.49	10.2	9.96	8.18	9.61	2.85	1.47	1.2	1.17						5.36								
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L			ND	ND	ND		ND	ND					1.1	ND	0.4	0.3	0.05	0.04	ND	0.05	0.05	0.07						0.2								
Orthophosphate-P	FGL		0.21	0.6	mg/L			0.04	0.0758	0.0368		0.0245	0.0101					0.142	0.0672	0.132	0.158	0.0895	0.101	0.164	0.0256	0.0192	ND						0.0776								
Ammonia-N	FGL	1.5	0.12	0.5	mg/L			ND	ND	0.068		ND	ND					ND	0.049	0.065	ND	0.16	0.049	ND	ND	ND	ND						ND								
Unionized Ammonia	FGL				mg/L			ND	ND	ND		ND	ND					ND	0.011	0.016	ND	0.0013	0.0013	ND	ND	ND	ND						ND								
TKN	FGL		0.267	0.5	mg/L			ND	0.306	0.257		ND	0.692					0.13	ND	ND	0.121	0.453	ND	0.18	0.616	0.519	0.887						0.768								
Color	Field			1	APHA			Turbid - Pale Brown	Clear- Greenish Tan	Clear - Greenish Brown		Fairly Clear	Greenish to Clear					150	13	30	65	14	15	13	12	9	10						60								
Phosphorus	FGL		8.1	50	ug/L			ND	43.5	0.0114		0.037	ND					0.282	0.035	0.0745	0.105	0.0502	0.033	ND	ND	ND	ND						0.0121								
Arsenic	FGL	10	0.09	0.2	ug/L			2	1.68	1.55		0.965	1.16																												
Boron	FGL	700	5	10	ug/L			ND	25.8	18.9		ND	9.06																												
Cadmium	FGL	5	0.02	0.2	ug/L			ND	0.147	0.032		ND	0.028																												
Copper	FGL	1300	0.13	0.5	ug/L			6	6.45	5.71		26.2	4																												
Lead	FGL	15	0.11	0.2	ug/L			0.4	0.697	0.604		0.46	0.608																												
Nickel	FGL	100	0.16	0.5	ug/L			1	ND	0.841		3.55	0.418																												
Selenium	FGL	50	0.1	1	ug/L			ND	ND	ND		ND	ND																												
Zinc	FGL		2.3	20	ug/L			ND	15.6	5.8		5.3	12.4																												
Molybdenum	FGL	10	0.07	0.5	ug/L			6	1.41	1.07		ND	0.898																												

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	Mar 10	04/21/10	05/18/10	Jun 10	07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11	Jan '12	Feb '12	March'12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Oct'12	Nov.'12	Dec.'12
Methoxychlor	CRG	30	0.008	0.01	ug/L			ND	ND	ND		ND	ND																												
Hardness	FGL		1	1	mg/L			66.4	15.7	13.7		7.53	6.56					68.7	24.5	51.5	52.2	22.5	15	6.24	8.9	8.02	7.9						77.1								
Atrazine	FGL	1	0.07	0.5	ug/L			ND	ND	ND		ND	ND																												
Cyanazine	FGL	1	0.09	0.5	ug/L			ND	ND	ND		ND	ND																												
Simazine	FGL	4	0.08	0.5	ug/L			ND	ND	ND		ND	ND																												
Methamidophos	APPL	0.35	0.01	0.2	ug/L			ND	ND	ND		ND	ND																												
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L			ND	ND	ND		ND	ND																												
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L			ND	ND	ND		ND	ND																												
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L			ND	ND	ND		ND	ND																												
Dicofol	APPL/FGL		0.01	0.1	ug/L			ND	ND	ND		ND	ND																												
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L			ND	ND	ND		ND	ND																												
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L			ND	ND	ND		ND	ND																												
Bifenthrin	CRG		0.006	0.02	ug/L			ND																																	
Cyfluthrin	CRG		0.003	0.03	ug/L			ND																																	
Cypermethrin	CRG		0.004	0.05	ug/L			ND																																	
Esfenvalerate	CRG		0.002	0.02	ug/L			0.9																																	
Fenpropthrin			0.006	0.02	ug/L																																				
Lamba cyhalothrin	CRG		0.02	0.02	ug/L			ND																																	
Permethrin	CRG		0.009	0.02	ug/L			ND																																	
Aldicarb	APPL	3	0.2	0.4	ug/L			ND	ND	ND		ND	ND																												
Carbaryl	APPL	2.53	0.05	0.07	ug/L			ND	ND	ND		ND	ND																												
Carbofuran	APPL	0.5	0.05	0.07	ug/L			ND	ND	ND		ND	ND																												
Diuron	APPL	2	0.2	0.4	ug/L			ND	ND	ND		ND	ND																												
Linuron	APPL	1.4	0.2	0.4	ug/L			ND	ND	ND		ND	ND																												
Methiocarb	APPL	5	0.2	0.4	ug/L			ND	ND	ND		ND	ND																												
Methomyl	APPL	0.52	0.05	0.07	ug/L			ND	ND	ND		ND	ND																												
Oxamyl	APPL	50	0.2	0.4	ug/L			ND	ND	ND		ND	ND																												
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L			ND	ND	ND		ND	ND																												

						Sample Month and Results												Sample Month and Results												Sample Month and Results											
Constituent	Field/Lab	WQTL	MDL	PQL	Units	Jan 10	Feb 10	Mar 10	04/21/10	05/18/10	Jun 10	07/14/10	08/17/10	09/22/10	Oct 10	11/29/10	Dec 10	01/19/11	02/14/11	03/15/11	04/14/11	05/18/11	06/15/11	07/17/11	08/17/11	09/15/11	10/18/11	Nov '11	Dec '11	Jan '12	Feb '12	March'12	4/18/12	May '12	June '12	July '12	Aug.'12	Sept.'12	Oct'12	Nov.'12	Dec.'12
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L			ND	ND	ND		ND	ND																												
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L			0.079	0.008	ND		0.013	ND																												
Demeton-S	APPL		0.01	0.1	ug/L			ND	ND	ND		ND	ND																												
Diazinon	APPL	0.1	0.004	0.02	ug/L			ND	ND	ND		ND	ND																												
Dichlorvos	APPL	0.085	0.02	0.1	ug/L			ND	ND	ND		ND	ND																												
Dimethoate	APPL		0.08	0.1	ug/L			ND	ND	ND		ND	ND																												
Disulfoton	APPL	0.05	0.02	0.1	ug/L			ND	ND	ND		ND	ND																												
Malathion	APPL	0.1	0.05	0.1	ug/L			ND	ND	ND		ND	ND																												
Methidathion	APPL	0.7	0.04	0.1	ug/L			ND	ND	ND		ND	ND																												
Molinate	FGL	13	0.13	0.5	ug/L			ND																																	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L			ND	ND	ND		ND	ND																												
Phorate	APPL	0.7	0.072	0.1	ug/L			ND	ND	ND		ND	ND																												
Phosmet	APPL	140	0.06	0.2	ug/L			ND	ND	ND		ND	ND																												
Thiobencarb	FGL	3.1	0.06	0.5	ug/L			ND																																	
Glyphosate	FGL	700	4	5	ug/L			ND	ND	2.57		ND	ND																												
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L			ND	ND	ND		ND	ND																												
Trifluralin	APPL	5	0.036	0.05	ug/L			ND	ND	ND		ND	ND																												
TSS	FGL		na	10	mg/L			4	5.67	6.4		4.56	2.1					23.7	9.1	7.45	12.4	11.2	14	6.21	3.55	2.02	1.85						4.6								
TOC	FGL		0.13	0.5	mg/L			9.9	3.02	2.66		0.789	1.87					5.71	2.85	4.37	4.13	2.83	2.39	1.89	1.35	1.94	1.21						7.99								
E. coli	FGL	235		1.1	MPN			76	344	140		126	8.6					30	23	80	23	290.9	500	62	7.4	230	230						50.4								
Fecal Coliform	FGL	400		1.1	MPN			30	500	230		80	80					90.7	21.3	56.3	132	300	261.3	23	8	14.8	44.1						50								
Toxicity, minnow	ABC				96h			100	100	100		100	100					100	100	100	100	100	95[5]	100	65[6]	100	100						100								
Toxicity, water flea	ABC				48h			100	95[5]	100		**100**	95[5]					100	100	100	100	100	100	100	95[5]	100	100						100								
Toxicity, algae	ABC				48h			100	100	100		100	100					100	100	100	100	100	100	100	100	100	100						100								
Sediment Results					10d									12.5[6]		92.5																									
Test Result														0.32																											
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cel

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cel

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cel

{5} No significant difference from control

{6} Significant Effect

558DCR120 - Deer Creek at Road 120

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13	Maximum Sample Result	Date of Max Sample
Flow	Field				cfs	0	0	0	0	0	0	0	120	0	0	0	0	150	5/11/2009
EC	Field	700			umhos/cm								35					216.9	4/18/2012
EC dup	FGL	700			umhos/cm								35					198.4	3/11/2010
pH	Field	6.5-8.3			pH								7.38					9	2/14/2011
pH dup	FGL	6.5-8.3			pH								7.38					8.7	3/11/2010
Temperature	Field				Celsius								26.8					32.2	7/9/2008
Temperature dup	FGL				Celsius								26.8					29.5	8/17/2010
Dissolved Oxygen	Field	Min. 7.0			mg/L								7.17					10.42	2/14/2011
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L								7.17					10.39	3/11/2010
TDS	FGL	450	4.4	10	mg/L								35.8					160	4/18/2012
Turbidity	FGL		0.035	0.1	NTU								6.48					25.6	1/19/2011
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L								ND					1.1	1/19/2011
Orthophosphate-P	FGL		0.21	0.6	mg/L								0.0207					0.164	7/17/2011
Ammonia-N	FGL	1.5	0.12	0.5	mg/L								ND					0.16	5/18/2011
Unionized Ammonia	FGL				mg/L								ND					0.016	3/15/2011
TKN	FGL		0.267	0.5	mg/L								0.531					1.65	7/21/2009
Color	Field			1	APHA													150	1/19/2011
Phosphorus	FGL		8.1	50	ug/L								0.01					43.5	4/21/2010
Arsenic	FGL	10	0.09	0.2	ug/L								1.44					2	3/11/2010
Boron	FGL	700	5	10	ug/L								15.7					25.8	4/21/2010
Cadmium	FGL	5	0.02	0.2	ug/L								ND					0.147	4/21/2010
Copper	FGL	1300	0.13	0.5	ug/L								9.58					26.2	7/14/2010
Lead	FGL	15	0.11	0.2	ug/L								0.52					0.697	4/21/2010
Nickel	FGL	100	0.16	0.5	ug/L								0.847					3.55	7/14/2010
Selenium	FGL	50	0.1	1	ug/L								0.154					0.154	Aug-13
Zinc	FGL		2.3	20	ug/L								7.21					15.6	4/21/2010
Molybdenum	FGL	10	0.07	0.5	ug/L								1.23					6	3/11/2010

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG	30	0.008	0.01	ug/L													0	
Hardness	FGL		1	1	mg/L								12.8					77.1	4/18/2012
Atrazine	FGL	1	0.07	0.5	ug/L								ND					0	
Cyanazine	FGL	1	0.09	0.5	ug/L								ND					0	
Simazine	FGL	4	0.08	0.5	ug/L								ND					0	
Methamidophos	APPL	0.35	0.01	0.2	ug/L								ND					0	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L								ND					0	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L								ND					0	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L								ND					0	
Dicofol	APPL/FGL		0.01	0.1	ug/L								ND					0	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L								ND					0	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L								ND					0	
Bifenthrin	CRG		0.006	0.02	ug/L								ND					0	
Cyfluthrin	CRG		0.003	0.03	ug/L								ND					0	
Cypermethrin	CRG		0.004	0.05	ug/L								ND					0	
Esfenvalerate	CRG		0.002	0.02	ug/L								ND					0.9	Mar-10
Fenpropthrin			0.006	0.02	ug/L								ND					0	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L								ND					0	
Permethrin	CRG		0.009	0.02	ug/L								ND					0	
Aldicarb	APPL	3	0.2	0.4	ug/L								ND					0	
Carbaryl	APPL	2.53	0.05	0.07	ug/L								ND					0	
Carbofuran	APPL	0.5	0.05	0.07	ug/L								ND					0	
Diuron	APPL	2	0.2	0.4	ug/L								ND					0	
Linuron	APPL	1.4	0.2	0.4	ug/L								ND					0	
Methiocarb	APPL	5	0.2	0.4	ug/L								ND					0	
Methomyl	APPL	0.52	0.05	0.07	ug/L								ND					0	
Oxamyl	APPL	50	0.2	0.4	ug/L								ND					0	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L								ND					0	

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results: Jan '13	Feb '13	March '13	April '13	May '13	June '13	July '13	Aug '13	9/5/13	Oct '13	Nov '13	Dec '13		
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L								ND					0	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L								ND					0.079	Mar-10
Demeton-S	APPL		0.01	0.1	ug/L								ND					0	
Diazinon	APPL	0.1	0.004	0.02	ug/L								ND					0	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L								ND					0	
Dimethoate	APPL		0.08	0.1	ug/L								ND					0	
Disulfoton	APPL	0.05	0.02	0.1	ug/L								ND					0	
Malathion	APPL	0.1	0.05	0.1	ug/L								ND					0	
Methidathion	APPL	0.7	0.04	0.1	ug/L								ND					0	
Molinate	FGL	13	0.13	0.5	ug/L													0	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L								ND					0	
Phorate	APPL	0.7	0.072	0.1	ug/L								ND					0	
Phosmet	APPL	140	0.06	0.2	ug/L								ND					0	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L													0.121	7/21/2009
Glyphosate	FGL	700	4	5	ug/L								ND					2.57	5/18/2010
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L								ND					0	
Trifluralin	APPL	5	0.036	0.05	ug/L								ND					0	
TSS	FGL		na	10	mg/L								8					23.7	1/19/2011
TOC	FGL		0.13	0.5	mg/L								4.29					9.9	Mar-10
E. coli	FGL	235		1.1	MPN								21.1					500	5/18/2011
Fecal Coliform	FGL	400		1.1	MPN								500					1700	Aug-06
Toxicity, minnow	ABC				96h								95					100	Sep-06
Toxicity, water flea	ABC				48h								100					100	Aug-06
Toxicity, algae	ABC				48h								100					100	Aug-06
Sediment Results					10d													100	Aug-06
Test Result																		0.32	9/22/2010
Control Result																		0	

Minnow and Water flea results as percent survival, Algae as percent growth

(1) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cel

(2) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cel

(3) TIE study conducted

(4) Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cel

(5) No significant difference from control

(6) Significant Effect

White River

White River at Road 208

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results												
						Jan'06	Feb'06	Mar'06	04/12/06	May'06	June'06	July'06	Aug'06	Sept'06	Oct'06	Nov'06	Dec'06	Jan'07	Feb'07	Mar'07	Apr'07	May'07	June'07	July'07	Aug'07	Sept'07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	Mar'08	Apr'08	May'08	June'08	July'08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08	Jan'09
Flow	Field				cfs																																					
EC	Field	700			umhos/cm																																					
EC dup	FGL	700			umhos/cm																																					
pH	Field	6.5-8.3			pH				9.32																																	
pH dup	FGL	6.5-8.3			pH																																					
Temperature	Field				Celsius				22																																	
Temperature dup	FGL				Celsius																																					
Dissolved Oxygen	Field	Min. 7.0			mg/L				10.4																																	
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																																					
TDS	FGL	450	4.4	10	mg/L				210																																	
Turbidity	FGL		0.035	0.1	NTU				6																																	
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L				ND																																	
Orthophosphate-P	FGL		0.21	0.6	mg/L																																					
Ammonia-N	FGL	1.5	0.12	0.5	mg/L				ND																																	
Unionized Ammonia	FGL				mg/L																																					
TKN	FGL		0.267	0.5	mg/L																																					
Color	Field			1	APHA				15																																	
Phosphorus	FGL		8.1	50	ug/L				ND																																	
Arsenic	FGL	10	0.09	0.2	ug/L				ND																																	
Boron	FGL	700	5	10	ug/L				ND																																	
Cadmium	FGL	5	0.02	0.2	ug/L				ND																																	
Copper	FGL	1300	0.13	0.5	ug/L				ND																																	
Lead	FGL	15	0.11	0.2	ug/L				ND																																	
Nickel	FGL	100	0.16	0.5	ug/L				ND																																	
Selenium	FGL	50	0.1	1	ug/L				ND																																	
Zinc	FGL		2.3	20	ug/L				ND																																	
Molybdenum	FGL	10	0.07	0.5	ug/L																																					

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results												
						Jan'06	Feb'06	Mar'06	04/12/06	May'06	June'06	July'06	Aug'06	Sept'06	Oct'06	Nov'06	Dec'06	Jan'07	Feb'07	Mar'07	Apr'07	May'07	June'07	July'07	Aug'07	Sept'07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	Mar'08	Apr'08	May'08	June'08	July'08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08	Jan'09
Methoxychlor	CRG	30	0.008	0.01	ug/L																																					
Hardness	FGL		1	1	mg/L				88.7																																	
Atrazine	FGL	1	0.07	0.5	ug/L				ND																																	
Cyanazine	FGL	1	0.09	0.5	ug/L				ND																																	
Simazine	FGL	4	0.08	0.5	ug/L				ND																																	
Methamidophos	APPL	0.35	0.01	0.2	ug/L				ND																																	
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L				ND																																	
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L				ND																																	
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L				ND																																	
Dicofol	APPL/FGL		0.01	0.1	ug/L				ND																																	
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L				ND																																	
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L				ND																																	
Bifenthrin	CRG		0.006	0.02	ug/L				0.005																																	
Cyfluthrin	CRG		0.003	0.03	ug/L				0.005																																	
Cypermethrin	CRG		0.004	0.05	ug/L				0.005																																	
Esfenvalerate	CRG		0.002	0.02	ug/L				0.005																																	
Fenpropthrin			0.006	0.02	ug/L				0.01																																	
Lamba cyhalothrin	CRG		0.02	0.02	ug/L				0.01																																	
Permethrin	CRG		0.009	0.02	ug/L				0.005																																	
Aldicarb	APPL	3	0.2	0.4	ug/L				0.766																																	
Carbaryl	APPL	2.53	0.05	0.07	ug/L																																					
Carbofuran	APPL	0.5	0.05	0.07	ug/L				0.849																																	
Diuron	APPL	2	0.2	0.4	ug/L				1.46																																	
Linuron	APPL	1.4	0.2	0.4	ug/L				1.8																																	
Methiocarb	APPL	5	0.2	0.4	ug/L				0.885																																	
Methomyl	APPL	0.52	0.05	0.07	ug/L				0.944																																	
Oxamyl	APPL	50	0.2	0.4	ug/L				1.45																																	
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L																																					

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results												Sample Month and Results												Sample Month and Results												
						Jan'06	Feb'06	Mar'06	04/12/06	May'06	June'06	July'06	Aug'06	Setp'06	Oct'06	Nov'06	Dec'06	Jan'07	Feb'07	Mar'07	Apr'07	May'07	June'07	July'07	Aug'07	Sept'07	Oct'07	Nov'07	Dec'07	Jan'08	Feb'08	Mar'08	Apr'08	May'08	June'08	July'08	Aug'08	Sept'08	Oct'08	Nov'08	Dec'08	Jan'09
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L				ND																																	
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L				1.96																																	
Demeton-S	APPL		0.01	0.1	ug/L				ND																																	
Diazinon	APPL	0.1	0.004	0.02	ug/L				ND																																	
Dichlorvos	APPL	0.085	0.02	0.1	ug/L				ND																																	
Dimethoate	APPL		0.08	0.1	ug/L				ND																																	
Disulfoton	APPL	0.05	0.02	0.1	ug/L				ND																																	
Malathion	APPL	0.1	0.05	0.1	ug/L				ND																																	
Methidathion	APPL	0.7	0.04	0.1	ug/L				ND																																	
Molinate	FGL	13	0.13	0.5	ug/L				ND																																	
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L				ND																																	
Phorate	APPL	0.7	0.072	0.1	ug/L				ND																																	
Phosmet	APPL	140	0.06	0.2	ug/L				ND																																	
Thiobencarb	FGL	3.1	0.06	0.5	ug/L				ND																																	
Glyphosate	FGL	700	4	5	ug/L				ND																																	
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L				ND																																	
Trifluralin	APPL	5	0.036	0.05	ug/L				ND																																	
TSS	FGL		na	10	mg/L				ND																																	
TOC	FGL		0.13	0.5	mg/L				8.9																																	
E. coli	FGL	235		1.1	MPN				ND																																	
Fecal Coliform	FGL	400		1.1	MPN				ND																																	
Toxicity, minnow	ABC				96h				ND																																	
Toxicity, water flea	ABC				48h				ND																																	
Toxicity, algae	ABC				48h				ND																																	
Sediment Results					10d				ND																																	
Test Result																																									
Control Result																																									

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176 million cells/ml actual, 0.200 million cells/ml required)

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170 million cells/ml actual, 0.200 million cells/ml required)

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142 million cells/ml actual, 0.200 million cells/ml required)

{5} No significant difference from control

{6} Significant Effect

White River at Road 208

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Feb'09	Mar'09	Apr'09	May'09	June'09	July'09	Aug'09	Sept'09	Oct'09	Nov'09	Dec'09	Jan'10	Feb'10	Mar'10	Apr'10	May'10	June'10	July'10	Aug'10	Sept'10	Oct'10	Nov'10	Dec'10	01/06/11	Feb'11	03/16/11	04/15/11	May'11	June'11	July'11	Aug'11	Sept'11	Oct'11	Nov'11	Dec'11	Jan'12	Feb'12
Flow	Field				cfs																																				
EC	Field	700			umhos/cm																										272											
EC dup	FGL	700			umhos/cm																										276											
pH	Field	6.5-8.3			pH																								8.18		8.31	8.29										
pH dup	FGL	6.5-8.3			pH																											8.37											
Temperature	Field				Celsius																								9.3		16.4	18.6										
Temperature dup	FGL				Celsius																											18.3											
Dissolved Oxygen	Field	Min. 7.0			mg/L																								10.64			8.94										
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L																										9.03	8.97										
TDS	FGL	450	4.4	10	mg/L																								180		200	211										
Turbidity	FGL		0.035	0.1	NTU																								55.8		72.1	86.9										
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L																								2.9		0.7	0.9										
Orthophosphate-P	FGL		0.21	0.6	mg/L																																						
Ammonia-N	FGL	1.5	0.12	0.5	mg/L																								ND		0.69	0.143										
Unionized Ammonia	FGL				mg/L																								ND		0	0.0093										
TKN	FGL		0.267	0.5	mg/L																										50											
Color	Field			1	APHA																																						
Phosphorus	FGL		8.1	50	ug/L																								0.32		0.341	0.334										
Arsenic	FGL	10	0.09	0.2	ug/L																																						
Boron	FGL	700	5	10	ug/L																																						
Cadmium	FGL	5	0.02	0.2	ug/L																																						
Copper	FGL	1300	0.13	0.5	ug/L																																						
Lead	FGL	15	0.11	0.2	ug/L																																						
Nickel	FGL	100	0.16	0.5	ug/L																																						
Selenium	FGL	50	0.1	1	ug/L																																						
Zinc	FGL		2.3	20	ug/L																																						
Molybdenum	FGL	10	0.07	0.5	ug/L																																						

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Feb'09	Mar'09	Apr'09	May'09	June'09	July'09	Aug'09	Sept'09	Oct'09	Nov'09	Dec'09	Jan'10	Feb'10	Mar'10	Apr'10	May'10	June'10	July'10	Aug'10	Sept'10	Oct'10	Nov'10	Dec'10	01/06/11	Feb'11	03/16/11	04/15/11	May'11	June'11	July'11	Aug'11	Sept'11	Oct'11	Nov'11	Dec'11	Jan'12	Feb'12
Methoxychlor	CRG	30	0.008	0.01	ug/L																																						
Hardness	FGL		1	1	mg/L																										109	105										
Atrazine	FGL	1	0.07	0.5	ug/L																																						
Cyanazine	FGL	1	0.09	0.5	ug/L																																						
Simazine	FGL	4	0.08	0.5	ug/L																																						
Methamidophos	APPL	0.35	0.01	0.2	ug/L																																						
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L																																						
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L																																						
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L																																						
Dicofol	APPL/FGL		0.01	0.1	ug/L																																						
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L																																						
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L																																						
Bifenthrin	CRG		0.006	0.02	ug/L																																						
Cyfluthrin	CRG		0.003	0.03	ug/L																																						
Cypermethrin	CRG		0.004	0.05	ug/L																																						
Esfenvalerate	CRG		0.002	0.02	ug/L																																						
Fenpropthrin			0.006	0.02	ug/L																																						
Lamba cyhalothrin	CRG		0.02	0.02	ug/L																																						
Permethrin	CRG		0.009	0.02	ug/L																																						
Aldicarb	APPL	3	0.2	0.4	ug/L																																						
Carbaryl	APPL	2.53	0.05	0.07	ug/L																																						
Carbofuran	APPL	0.5	0.05	0.07	ug/L																																						
Diuron	APPL	2	0.2	0.4	ug/L																																						
Linuron	APPL	1.4	0.2	0.4	ug/L																																						
Methiocarb	APPL	5	0.2	0.4	ug/L																																						
Methomyl	APPL	0.52	0.05	0.07	ug/L																																						
Oxamyl	APPL	50	0.2	0.4	ug/L																																						
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L																																						

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Feb'09	Mar'09	Apr'09	May'09	June'09	July'09	Aug'09	Sept'09	Oct'09	Nov'09	Dec'09	Jan'10	Feb'10	Mar'10	Apr'10	May'10	June'10	July'10	Aug'10	Sept'10	Oct'10	Nov'10	Dec'10	01/06/11	Feb'11	03/16/11	04/15/11	May'11	June'11	July'11	Aug'11	Sept'11	Oct'11	Nov'11	Dec'11	Jan'12	Feb'12
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L																																						
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L																																						
Demeton-S	APPL		0.01	0.1	ug/L																																						
Diazinon	APPL	0.1	0.004	0.02	ug/L																																						
Dichlorvos	APPL	0.085	0.02	0.1	ug/L																																						
Dimethoate	APPL		0.08	0.1	ug/L																																						
Disulfoton	APPL	0.05	0.02	0.1	ug/L																																						
Malathion	APPL	0.1	0.05	0.1	ug/L																																						
Methidathion	APPL	0.7	0.04	0.1	ug/L																																						
Molinate	FGL	13	0.13	0.5	ug/L																																						
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L																																						
Phorate	APPL	0.7	0.072	0.1	ug/L																																						
Phosmet	APPL	140	0.06	0.2	ug/L																																						
Thiobencarb	FGL	3.1	0.06	0.5	ug/L																																						
Glyphosate	FGL	700	4	5	ug/L																																						
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L																																						
Trifluralin	APPL	5	0.036	0.05	ug/L																																						
TSS	FGL		na	10	mg/L																								91		73.3	75										
TOC	FGL		0.13	0.5	mg/L																								8.7		6.3	6.2										
E. coli	FGL	235		1.1	MPN																																						
Fecal Coliform	FGL	400		1.1	MPN																																						
Toxicity, minnow	ABC				96h																																						
Toxicity, water flea	ABC				48h																																						
Toxicity, algae	ABC				48h																																						
Sediment Results					10d																																						
Test Result																																										
Control Result																																										

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142

{5} No significant difference from control

{6} Significant Effect

White River at Road 208

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results									Maximum Sample Result	Date of Max Sample
						Mar'12	04/13/12	May'12	June'12	July'12	Aug'12	Sept'12	Oct'12	Nov'12	Dec'12	
Flow	Field				cfs											0	
EC	Field	700			umhos/cm											272	4/15/2011
EC dup	FGL	700			umhos/cm											276	4/15/2011
pH	Field	6.5-8.3			pH		8.25									9.32	4/12/2006
pH dup	FGL	6.5-8.3			pH											8.37	4/15/2011
Temperature	Field				Celsius		23.95									23.95	4/13/2012
Temperature dup	FGL				Celsius											18.3	4/15/2011
Dissolved Oxygen	Field	Min. 7.0			mg/L		7.9									10.64	4/12/2006
Dissolved Oxygen dup	FGL	Min. 7.0			mg/L											9.03	3/16/2011
TDS	FGL	450	4.4	10	mg/L											211	4/15/2011
Turbidity	FGL		0.035	0.1	NTU											86.9	4/15/2011
Nitrate + Nitrite as N	FGL	10	0.01	0.2	mg/L											2.9	1/6/2011
Orthophosphate-P	FGL		0.21	0.6	mg/L											0	
Ammonia-N	FGL	1.5	0.12	0.5	mg/L											0.69	3/16/2011
Unionized Ammonia	FGL				mg/L											0.0093	4/15/2011
TKN	FGL		0.267	0.5	mg/L											50	3/16/2011
Color	Field			1	APHA											15	4/12/2006
Phosphorus	FGL		8.1	50	ug/L											0.341	3/16/2011
Arsenic	FGL	10	0.09	0.2	ug/L											0	
Boron	FGL	700	5	10	ug/L											0	
Cadmium	FGL	5	0.02	0.2	ug/L											0	
Copper	FGL	1300	0.13	0.5	ug/L											0	
Lead	FGL	15	0.11	0.2	ug/L											0	
Nickel	FGL	100	0.16	0.5	ug/L											0	
Selenium	FGL	50	0.1	1	ug/L											0	
Zinc	FGL		2.3	20	ug/L											0	
Molybdenum	FGL	10	0.07	0.5	ug/L											0	

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results										
						Mar'12	04/13/12	May'12	June'12	July'12	Aug'12	Sept'12	Oct'12	Nov'12	Dec'12	
Methoxychlor	CRG	30	0.008	0.01	ug/L											0
Hardness	FGL		1	1	mg/L		97									109
Atrazine	FGL	1	0.07	0.5	ug/L											0
Cyanazine	FGL	1	0.09	0.5	ug/L											0
Simazine	FGL	4	0.08	0.5	ug/L											0
Methamidophos	APPL	0.35	0.01	0.2	ug/L											0
DDE	CRG/FGL	0.00059	0.004	0.01	ug/L											0
DDT	CRG/FGL	0.00059	0.007	0.01	ug/L											0
DDD	CRG/FGL	0.00083	0.003	0.01	ug/L											0
Dicofol	APPL/FGL		0.01	0.1	ug/L											0
Dieldrin	CRG/FGL	0.00014	0.005	0.01	ug/L											0
Endrin	CRG/FGL	0.76	0.007	0.01	ug/L											0
Bifenthrin	CRG		0.006	0.02	ug/L											0.005
Cyfluthrin	CRG		0.003	0.03	ug/L											0.005
Cypermethrin	CRG		0.004	0.05	ug/L											0.005
Esfenvalerate	CRG		0.002	0.02	ug/L											0.005
Fenropthrin			0.006	0.02	ug/L											0.01
Lamba cyhalothrin	CRG		0.02	0.02	ug/L											0.01
Permethrin	CRG		0.009	0.02	ug/L											0.005
Aldicarb	APPL	3	0.2	0.4	ug/L											0.766
Carbaryl	APPL	2.53	0.05	0.07	ug/L											0
Carbofuran	APPL	0.5	0.05	0.07	ug/L											0.849
Diuron	APPL	2	0.2	0.4	ug/L											1.46
Linuron	APPL	1.4	0.2	0.4	ug/L											1.8
Methiocarb	APPL	5	0.2	0.4	ug/L											0.885
Methomyl	APPL	0.52	0.05	0.07	ug/L											0.944
Oxamyl	APPL	50	0.2	0.4	ug/L											1.45
Azinphosmethyl	APPL	0.01	0.02	0.1	ug/L											0

Constituent	Field/Lab	WQTL	MDL	PQL	Units	Sample Month and Results										
						Mar'12	04/13/12	May'12	June'12	July'12	Aug'12	Sept'12	Oct'12	Nov'12	Dec'12	
Methoxychlor	CRG/FGL	30	0.008	0.01	ug/L											0
Chlorpyrifos	APPL	0.015	0.003	0.02	ug/L											1.96
Demeton-S	APPL		0.01	0.1	ug/L											0
Diazinon	APPL	0.1	0.004	0.02	ug/L											0
Dichlorvos	APPL	0.085	0.02	0.1	ug/L											0
Dimethoate	APPL		0.08	0.1	ug/L											0
Disulfoton	APPL	0.05	0.02	0.1	ug/L											0
Malathion	APPL	0.1	0.05	0.1	ug/L											0
Methidathion	APPL	0.7	0.04	0.1	ug/L											0
Molinate	FGL	13	0.13	0.5	ug/L											0
Parathion, methyl	APPL	0.08	0.075	0.1	ug/L											0
Phorate	APPL	0.7	0.072	0.1	ug/L											0
Phosmet	APPL	140	0.06	0.2	ug/L											0
Thiobencarb	FGL	3.1	0.06	0.5	ug/L											0
Glyphosate	FGL	700	4	5	ug/L											0
Paraquat	N Coast-FGL	3.2	0.21	0.4	ug/L											0
Trifluralin	APPL	5	0.036	0.05	ug/L											0
TSS	FGL		na	10	mg/L											91
TOC	FGL		0.13	0.5	mg/L											8.9
E. coli	FGL	235		1.1	MPN											0
Fecal Coliform	FGL	400		1.1	MPN											0
Toxicity, minnow	ABC				96h											0
Toxicity, water flea	ABC				48h											0
Toxicity, algae	ABC				48h											0
Sediment Results					10d											0
Test Result																0
Control Result																0

Minnow and Water flea results as percent survival, Algae as percent growth

{1} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.176

{2} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.170

{3} TIE study conducted

{4} Test failed to meet EPA Acceptability Criteria (insufficient growth in control, 0.142

{5} No significant difference from control

{6} Significant Effect

APPENDIX C: MONITORING STATION PHOTOGRAPHS


PLANO BRIDGE
AT TULE RIVER
MONITORING
STATION

Porter Slough at Road 192, July 2014 20140715 09 01

TULE RIVER AT ROAD 144 MONITORING STATION

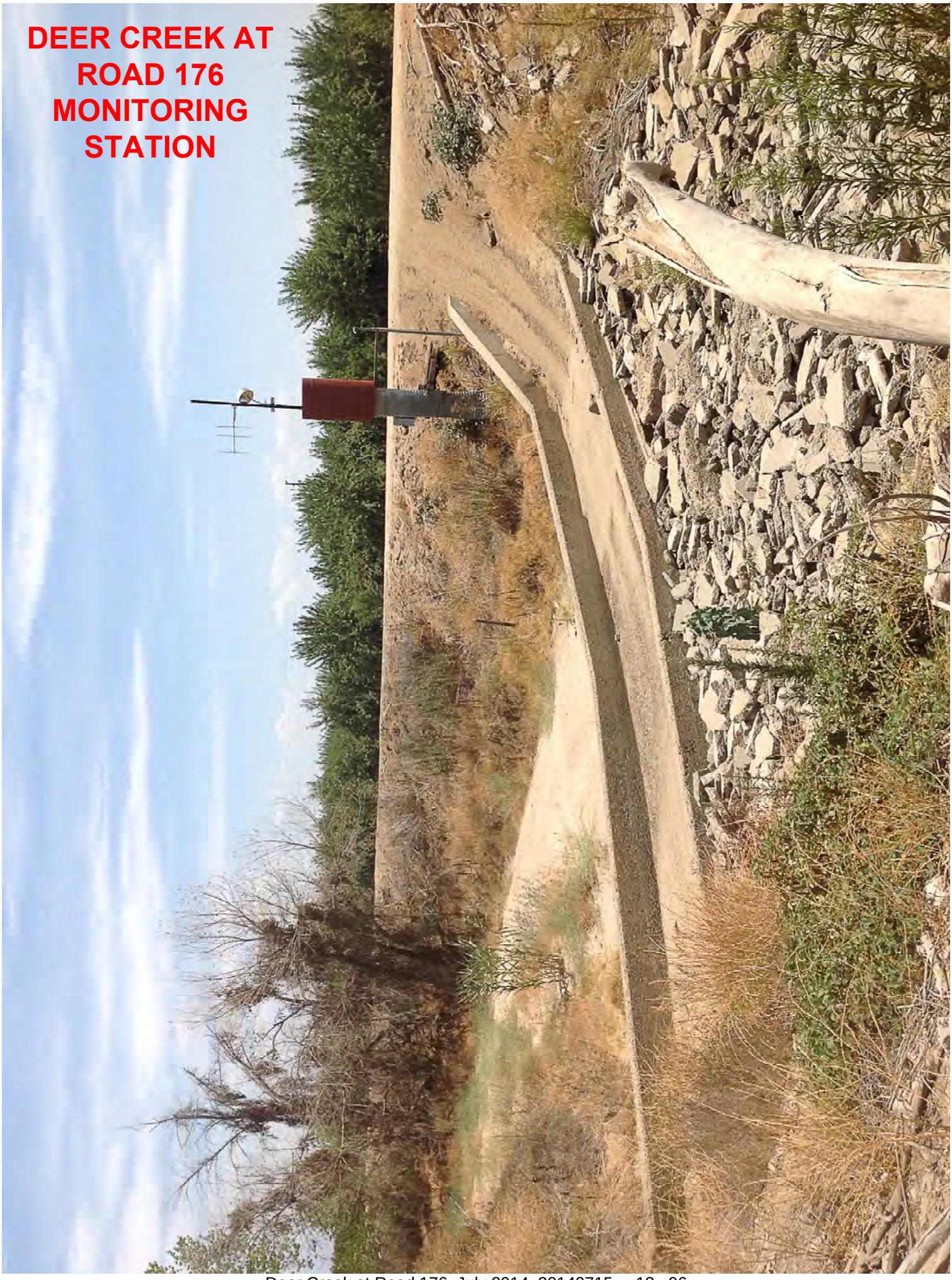
Tule River at Road 144, July 2014 20140715 08 29

Tule River at Road 92, July 2014 20140715 15 46

DEER CREEK AT ROAD 248 MONITORING STATION

Deer Creek at Road 248, July 2014 20140715 12 39

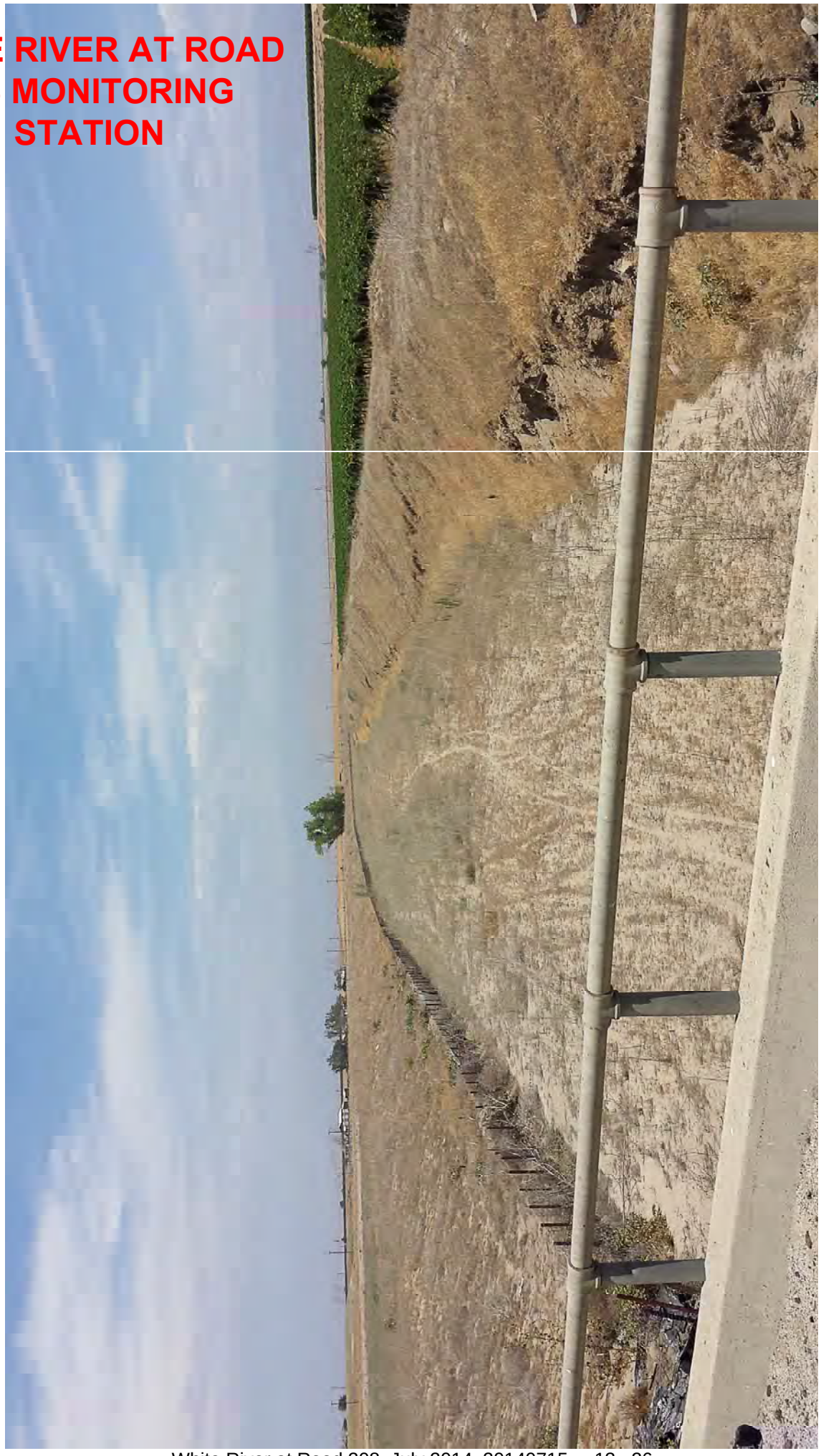
DEER CREEK AT ROAD 176 MONITORING STATION



Deer Creek at Road 176, July 2014 20140715 13 06

DEER CREEK AT ROAD 120 MONITORING STATION

WHITE RIVER AT ROAD 208 MONITORING STATION



White River at Road 208, July 2014 20140715 13 26

WHITE RIVER AT ROAD 128 MONITORING STATION

White River at Road 128, July 2014 20140715 13 56

APPENDIX D: TULE BASIN WATER QUALITY COALITION MONITORING PARAMETERS

TBWQC MONITORING PARAMETERS

	Measured Paramenter	Matrix	Numeric Threshold or Trigger Limit	Units
Field Measurements	Estimated Flow (cfs)[1]	Water	1	cfs
	Photo Documentation[1]	Site		
	Conductivity (us/cm)[1]	Water	450	us/cm
	Temperature (degrees Celcius)[1]	Water		
	pH[1]	Water	6.5 - 8.3	
	Dissolved Oxygen (mg/L)[1]	Water	7	mg/L
Drinking Water	E. Coli[1]	Water	235	MPN/100 ml
	Total Organic Carbon (TOC)[1]	Water	NA	
General Phys.	Hardness (as $CaCO_3$)[1]	Water	NA	
	Total Suspended Solids (TSS)[1]	Water	NA	
	Turbidity[1]	Water	varies	
Metals	Arsenic (total)	Water	10	ug/L
	Boron (total)	Water	1000	ug/L
	Cadmium (total and dissolved)**	Water	5	ug/L
	Copper (total and dissolved)**	Water	1000	ug/L
	Lead (total and dissolved)**	Water	15	ug/L
	Molybdenum (total)	Water	10	ug/L
	Nickel (total and dissolved)**	Water	100	ug/L
	Selenium (total)	Water	50	ug/L
	Zinc (total and dissolved)**	Water	5000	ug/L
Nutrients	Total Ammonia (as N)[1]	Water	varies	ug/L
	Unionized Ammonia (calculated value)[1]	Water	varies	ug/L
	Nitrogen, Nitrate + Nitrite[1]	Water	10	mg/L
	Soluble Orthophosphate	Water	NA	
Pesticides	Methoxychlor	Water	0.03	ug/L
	Atrazine	Water	1	ug/L
	Cyanazine	Water	1	ug/L
	Simazine	Water	4	ug/L
	Methamidophos	Water	0.35	ug/L
	DDE	Water	0.00059	ug/L
	DDT	Water	0.00059	ug/L
	DDD	Water	0.00083	ug/L
	Dicofol	Water	NA	ug/L
	Dieldrin	Water	0.00014	ug/L
	Endrin	Water	0.036	ug/L
	Bifenthrin	Water	NA	ug/L
	Cyfluthrin	Water	NA	ug/L
	Cypermethrin	Water	NA	ug/L
	Esfenvalerate	Water	NA	ug/L
	Fenpropthrin	Water	NA	ug/L
	Lamba cyhalothrin	Water	NA	ug/L
	Permethrin	Water	NA	ug/L
	Aldicarb	Water	3	ug/L
	Carbaryl	Water	2.53	ug/L
	Carbofuran	Water	0.5	ug/L
	Diuron	Water	2	ug/L
	Linuron	Water	1.4	ug/L
	Methiocarb	Water	0.5	ug/L

Pesticides	Methomyl	Water	0.52	ug/L
	Oxamyl	Water	50	ug/L
	Azinphosmethyl	Water	0.01	ug/L
	Chlorpyrifos	Water	0.015	ug/L
	Demeton-S	Water	NA	ug/L
	Diazinon	Water	0.1	ug/L
	Dichlorvos	Water	0.085	ug/L
	Dimethoate	Water	1	ug/L
	Disulfoton	Water	0.05	ug/L
	Malathion	Water	0.1	ug/L
	Methidathion	Water	0.7	ug/L
	Molinate	Water	13	ug/L
	Parathion, methyl	Water	0.08	ug/L
	Phorate	Water	0.7	ug/L
	Phosmet	Water	140	ug/L
	Thiobencarb	Water	3.1	ug/L
	Glyphosate	Water	700	ug/L
	Paraquat	Water	3.2	ug/L
	Trifluralin	Water	5	ug/L
Water Toxicity	*Ceriodaphnia dubia (water flea)*[1]	Water	*50% or greater difference mortality from ambient sample*	
	Pimephales promelas (fathead minnow)[1]	Water		
	Selenastrum capricornutun (green algae)[1]	Water	*50% or greater reduction in growth in ambient sample*	
	Toxicity Identification Evaluation (TIE)	Water	*Within 48 hours of a water toxicity exceedance, perform Phase 1 TIE analysis*	
Sediment Toxicity	*Hyalella azteca*	Sediment	*< 80% organism survivial compared to control*	
Pesticides and Sediment Parameters*	Bifenthrin	Sediment		
	Cyfluthrin	Sediment		
	Cypemethrin	Sediment		
	Deltamethrin	Sediment		
	Esfenvalerate/Fenvalerate	Sediment		
	Fenpropathrin	Sediment		
	Lamba cyhalothrin	Sediment		
	Permethrin	Sediment		
	Piperonyl butoxide (PBO)	Sediment		
	Chlorpyrifos	Sediment		
	Total Organic Carbon	Sediment		
	Grain Size	Sediment		

[1] *- Core Monitoring parameter. The first year of Core monitoring must also include any parameter that exceeded a water quality objective during previous assessment period.*

** - For sediment samples measuring significant toxicity and < 80% organism survival compared to the control, the sediment pesticide analysis will be performed.*

*** - Hardness samples shall be collected when sampling for these metals*

APPENDIX E: TULARE COUNTY PESTICIDE USE DATA

2013 Pesticide Application - Tule Basin Water Quality Coalition

(Pesticide Use reported on areas more than 1,000 acres)

Product Name	Area Treated	Units
ROUNDUP POWERMAX HERBICIDE	349,831	ACRES
PHT LATRON B-1956	139,257.8	ACRES
PRO 90	136,671.9	ACRES
DELEGATE WG	120,993.0	ACRES
MICROTHIOL DISPERSS	91,695.6	ACRES
ALCO CITRUS FIX	80,670.1	ACRES
SHARK EW	77,150.6	ACRES
GOAL 2XL	71,866.6	ACRES
DUSTING SULFUR	68,687.0	ACRES
PRO AMS PLUS	68,341.6	ACRES
LORSBAN ADVANCED	66,953.0	ACRES
DUPONT EXPRESS HERBICIDE (WITH TOTALSOL SOLUBLE GRANULES)	66,887.2	ACRES
HOOK	65,185.0	ACRES
INTREPID 2F	62,824.6	ACRES
38-F DRIFT RETARDANT ADDITIVE	61,160.7	ACRES
SCANNER	60,905.2	ACRES
BASIC COPPER 53	55,166.8	ACRES
EXIT	51,106.5	ACRES
MOVENTO	50,034.5	ACRES
ZEAL(R) MITICIDE(1)	46,946.3	ACRES
VINTRE	45,817.0	ACRES
DUPONT ALTACOR (CA)	45,741.2	ACRES
WESTERN LIME - HIGH CALCIUM HYDRATED LIME	45,647.0	ACRES
AXIAL XL HERBICIDE	43,130.7	ACRES
CHOICE WEATHER MASTE	41,231.5	ACRES
TREEVIX POWERED BY KIXOR HERBICIDE	38,712.7	ACRES
EPI-MEK 0.15 EC	38,398.9	ACRES
KUMULUS DF	35,796.6	ACRES
DUPONT ALTACOR INSECT CONTROL	35,714.8	ACRES
PHT 415 SUPREME SPRA	35,074.7	ACRES
BOND MAX	35,045.0	ACRES
ABBA 0.15 EC	35,007.3	ACRES
COP-O-ZINC	34,317.3	ACRES
OROCIT - CA	33,983.7	ACRES
ALION HERBICIDE	33,599.3	ACRES
ET HERBICIDE/DEFOLIANT	32,880.4	ACRES
VULCAN	31,360.3	ACRES
HONCHO PLUS HERBICIDE	30,600.7	ACRES
ONAGER MITICIDE	30,593.0	ACRES
PROWL(R) H2O HERBICI	30,556.2	ACRES
RALLY 40 WSP	30,149.4	ACRES
LATRON B-1956	29,906.0	ACRES
OROCIT-CA	29,778.9	ACRES
VANGARD WG	29,470.8	ACRES
GLY STAR PLUS	28,764.6	ACRES
TREEVIX(TM) HERBICID	28,620.2	ACRES
PROWL H2O HERBICIDE	28,324.6	ACRES
ONAGER	28,093.3	ACRES
GLY STAR ORIGINAL	27,219.3	ACRES
FLINT FUNGICIDE	27,049.6	ACRES
ALECTO 41S	26,661.3	ACRES
PRISTINE(R) FUNGICID	26,558.2	ACRES
NUFARM RHOMENE MCPA BROADLEAF HERBICIDE	26,435.2	ACRES
PARAZONE 3SL	26,252.7	ACRES
TRIPLELINE FOAM-AWAY	26,214.5	ACRES
GRAMOXONE SL 2.0	26,132.6	ACRES
NO FOAM B	25,513.3	ACRES
PENETRATOR	25,500.3	ACRES
LOCK-ON INSECTICIDE	25,171.1	ACRES
DUPONT KOCIDE 3000 F	25,119.3	ACRES
PROGIBB(R) 4% PLANT	24,899.7	ACRES
ZEAL MITICIDE(1)	24,834.2	ACRES
BRITZ B-85	24,596.2	ACRES
HIGH CALCIUM HYDRATE	24,345.5	ACRES
CHEMSTAR HIGH CALCIU	23,659.1	ACRES
ACTARA	23,279.3	ACRES
PHT ENTRY	22,993.2	ACRES
PHT WATER-GUARD RT	22,654.9	ACRES
QUINTEC	22,432.6	ACRES
CHATEAU HERBICIDE SW	21,644.8	ACRES
SPECIAL ELECTRIC	21,452.5	ACRES
PRO-GIBB 4% PLANT GROWTH REGULATOR SOLUTION	21,314.9	ACRES
BAYTHROID XL	20,684.3	ACRES
PHT 415 SUPREME SPRAY OIL	20,315.1	ACRES
MIST-CONTROL (REVISED FORMULA)	20,041.3	ACRES

Product Name	Area Treated	Units
PHT B-85	19,942.4	ACRES
PRO SILICONE 100	19,873.4	ACRES
MILLER NU FILM P	19,857.5	ACRES
WIL-DRY	19,793.0	ACRES
PROGIBB(R) 40% WATER	19,587.7	ACRES
IAP DUSTING SULFUR	19,540.1	ACRES
DUPONT MATRIX SG HER	19,399.4	ACRES
VENUE	19,380.9	ACRES
DUPONT MATRIX (CA) H	19,293.2	ACRES
FALGRO 4L	19,040.0	ACRES
PRISTINE FUNGICIDE	18,968.4	ACRES
VITICURE	18,735.8	ACRES
DUPONT ASANA XL INSE	18,633.1	ACRES
SULFUR DF	18,500.9	ACRES
GRAMOXONE INTEON	18,465.8	ACRES
BIFENTURE EC	18,389.1	ACRES
DUPONT MATRIX SG HERBICIDE	18,121.2	ACRES
COSAVET DF	17,826.0	ACRES
BFR LATRON B-1956	17,638.9	ACRES
ACTIVATOR 90	17,392.6	ACRES
PARADIGM	17,386.8	ACRES
ADMIRE PRO SYSTEMIC	17,234.8	ACRES
CHATEAU(R) HERBICIDE	17,146.1	ACRES
38-F	17,102.3	ACRES
HONCHO PLUS HERBICID	17,088.2	ACRES
DUPONT KOCIDE 3000 FUNGICIDE/BACTERICIDE	16,779.7	ACRES
CLARITY(R) HERBICIDE	16,747.8	ACRES
ESTEEM 0.86 EC INSECT GROWTH REGULATOR	16,350.2	ACRES
NEW CENTURY EXTEND-97	16,283.5	ACRES
SPRAY OIL 415	16,077.4	ACRES
COPPER SULFATE CRYST	15,934.0	ACRES
BELT SC INSECTICIDE	15,701.1	ACRES
FUJIMITE 5EC	15,441.9	ACRES
SPECIAL ELECTRIC REFINED SUPER-ADHESIVE DUSTING SULFUR	15,185.0	ACRES
MUSTANG INSECTICIDE	14,858.6	ACRES
GRAMOXONE SL	14,508.8	ACRES
SUCCESS	14,485.0	ACRES
S-K-H ORGANIC ADHESIVE ADJUVANT	14,419.3	ACRES
ZIRAM 76DF	14,196.6	ACRES
WIDESPREAD MAX	14,034.8	ACRES
GIBGRO 4LS	13,784.8	ACRES
ESTEEM(R) 0.86 EC IN	13,763.5	ACRES
PROKIL CRYOLITE 96	13,743.1	ACRES
TOMBSTONE HELIOS	13,610.1	ACRES
FIRST CHOICE NARROW	13,533.5	ACRES
S-K-H ORGANIC ADHESI	13,316.2	ACRES
EPI-MEK 0.15 EC MITICIDE/INSECTICIDE	13,299.0	ACRES
VENUE HERBICIDE	13,283.4	ACRES
WARHAWK	13,281.5	ACRES
DANITOL(R) 2.4 EC SP	13,254.2	ACRES
DIPEL(R) DF (CA & NY	13,222.2	ACRES
ACTARA (CA & NY)	13,214.8	ACRES
LI 700	13,120.2	ACRES
MONTEREY M.S.O.	12,721.5	ACRES
MONTANA 2F INSECTICI	12,717.3	ACRES
DU PONT ASANA XL INSECTICIDE	12,609.8	ACRES
BUFFER X-TRA	12,590.7	ACRES
BWC SPREADER 90	12,566.7	ACRES
AGRI-DEX	12,410.0	ACRES
DYNE-AMIC	11,984.4	ACRES
PHT PIERCE	11,895.9	ACRES
TILT (CA)	11,763.5	ACRES
FUJIMITE 5 EC	11,711.2	ACRES
MICRO SULF	11,601.1	ACRES
GROUNDED-CA	11,426.0	ACRES
DANITOL 2.4 EC SPRAY	11,316.2	ACRES
SILENCER	11,264.4	ACRES
BRITZ 415 SUPREME SPRAY OIL	11,238.9	ACRES
IAP SUMMER 415 SPRAY OIL	11,178.6	ACRES
QUASH(R) FUNGICIDE	11,142.9	ACRES
SURFLAN AS AG	10,943.9	ACRES
LATRON B-1956 SPREADER STICKER	10,906.6	ACRES
PHT 10-12-0 ZN	10,895.9	ACRES
IAP SUMMER 415 SPRAY	10,891.6	ACRES
MONTEREY NUTRIENT BUFFER 10-12-0 ZNP	10,885.9	ACRES
TILT	10,797.2	ACRES
WEATHER GARD COMPLET	10,749.1	ACRES
ABACUS	10,742.0	ACRES

Product Name	Area Treated	Units
COHERE (CA)	10,675.5	ACRES
DUPONT ALTACOR INSEC	10,669.6	ACRES
CLARITY HERBICIDE	10,510.4	ACRES
QUASH FUNGICIDE	10,447.0	ACRES
IAP ORGANIC SUMMER 415 SPRAY OIL	10,275.5	ACRES
ROVRAL BRAND 4 FLOWA	10,252.2	ACRES
TOMBSTONE	10,207.0	ACRES
ASSAIL 70 WP	10,186.0	ACRES
MONTANA 2F INSECTICIDE	10,140.6	ACRES
PHT ESCALATE (CA)	10,036.5	ACRES
CHEMSTAR HIGH CALCIUM HYDRATED LIME	10,001.6	ACRES
CHLORPYRIFOS 4E AG	9,958.9	ACRES
UMBRELLA	9,911.0	ACRES
LAMBDA-CY EC INSECTICIDE-RUP	9,882.2	ACRES
BWC CROP OIL	9,848.3	ACRES
DIPEL DF BIOLOGICAL INSECTICIDE	9,672.8	ACRES
SOVRAN(R) FUNGICIDE	9,533.6	ACRES
ENVIDOR 2 SC MITICID	9,441.1	ACRES
TEBUCON 45 DF	9,421.6	ACRES
KALO MODIFIED VEGETABLE OIL	9,284.0	ACRES
OMNI OIL 6E	9,218.9	ACRES
MAKAZE	9,109.5	ACRES
INSPIRE SUPER	9,107.7	ACRES
PHT ESCALATE	9,072.9	ACRES
ADMIRE PRO SYSTEMIC PROTECTANT	9,072.2	ACRES
ET HERBICIDE/DEFOLIA	8,830.0	ACRES
LORSBAN-4E	8,829.5	ACRES
INDUCE (CA)	8,802.8	ACRES
ROUNDUP WEATHERMAX H	8,765.7	ACRES
RIVERDALE DRI-CLEAN HERBICIDE	8,663.2	ACRES
PROGIBB 40% WATER SOLUBLE GRANULES	8,590.3	ACRES
LEVERAGE 360 INSECTI	8,581.9	ACRES
NORDOX 75 WG	8,540.2	ACRES
PARROT DF	8,537.6	ACRES
OXYSTAR 2E	8,500.9	ACRES
LAMBDA-CY AG	8,326.6	ACRES
ASSAIL 70WP INSECTICIDE	8,315.6	ACRES
MICROTHIOL DISPERSS MICRONIZED WETTABLE SULFUR	8,204.7	ACRES
PRO-TRON	8,201.9	ACRES
MACHO 2.0 FL	8,183.0	ACRES
PH-D WATER DISPERSABLE GRANULES	8,068.0	ACRES
ASPERGILLUS FLAVUS A	8,060.6	ACRES
ETHEPHON 2	8,051.9	ACRES
MSO CONCENTRATE WITH	8,007.1	ACRES
SECURE	7,740.5	ACRES
APPLAUD 70 DF INSECT GROWTH REGULATOR	7,709.4	ACRES
CAYUSE PLUS	7,652.7	ACRES
MCP AMINE 4	7,644.5	ACRES
ABACUS AGRICULTURAL MITICIDE/INSECTICIDE	7,635.7	ACRES
DUPONT EXPRESS HERBI	7,617.3	ACRES
DELIVER BIOLOGICAL INSECTICIDE	7,447.8	ACRES
FLAT TOP MC	7,378.4	ACRES
BIFENTURE EC AGRICULTURAL INSECTICIDE	7,357.2	ACRES
APPLAUD INSECT GROWT	7,248.5	ACRES
S-K-H AGRICULTURAL ADHESIVE	7,203.4	ACRES
TOMBSTONE HELIOS INSECTICIDE	7,142.3	ACRES
SIMAZINE 90DF	7,125.2	ACRES
DRI-CLEAN	7,106.5	ACRES
WETCIT	7,019.2	ACRES
RODENT BAIT DIPHACIN	7,008.0	ACRES
STATUS HERBICIDE	6,941.0	ACRES
PHT O/S BLEND	6,882.8	ACRES
R-11(R) SPREADER-ACT	6,878.0	ACRES
PERM-UP 3.2 EC	6,873.0	ACRES
BWC SPREADER-90	6,872.5	ACRES
FANFARE ES	6,871.5	ACRES
MUSTANG	6,831.3	ACRES
PHT AD-WET 90 CA	6,816.0	ACRES
GF-120 NF NATURALYTE FRUIT FLY BAIT	6,799.9	ACRES
MICROTHIOL SPECIAL MICRONIZED WETTABLE SULFUR	6,797.3	ACRES
GINSTAR EC COTTON DEFOLIANT	6,754.2	ACRES
PHT SILGLOW	6,743.6	ACRES
REAPER 0.15 EC	6,661.0	ACRES
METTLE 125 ME	6,565.7	ACRES
415 SPRAY OIL	6,558.9	ACRES
STATUS(R) HERBICIDE	6,497.7	ACRES
ACCESS	6,468.2	ACRES
WEEVIL-CIDE TABLETS	6,417.8	ACRES

Product Name	Area Treated	Units
SCALA BRAND SC (CA &	6,412.3	ACRES
FIRST CHOICE NARROW RANGE 415 SPRAY OIL	6,408.3	ACRES
COMITE	6,382.6	ACRES
CSC 80% THIOSPERSE	6,365.3	ACRES
PHT SUPREME SPRAY OI	6,234.6	ACRES
MACHO 4.0	6,215.7	ACRES
415 SUPERIOR SPRAY O	6,213.8	ACRES
IAP 440 SPRAY OIL	6,169.0	ACRES
INTEGRO MAGNETIC SULFUR DUST	6,116.9	ACRES
NU-COP HB	6,102.7	ACRES
QUADRIS TOP (CA)	6,053.8	ACRES
DRI-CLEAN HERBICIDE	6,028.5	ACRES
ISOMATE-OFM TT	6,024.5	ACRES
POUNCE 1.5 G	5,953.7	ACRES
ELEVATE 50WDG	5,901.9	ACRES
LEVERAGE 360 INSECTICIDE	5,853.7	ACRES
AXIAL XL (WARNING)	5,773.7	ACRES
BRITZ INTENSIFY	5,749.0	ACRES
AGRI-MEK SC	5,738.7	ACRES
ENVIDOR 2 SC MITICIDE	5,692.7	ACRES
BRIGADE WSB INSECTICIDE/MITICIDE	5,672.5	ACRES
PRO C.O.C.	5,665.5	ACRES
GRAMOXONE SL 2.0 (CA	5,643.3	ACRES
MSO CONCENTRATE	5,641.1	ACRES
SONATA	5,548.7	ACRES
MCPA AMINE 4	5,537.2	ACRES
SURFLAN A.S. AGRICULTURAL HERBICIDE	5,519.1	ACRES
ROUNDUP WEATHERMAX HERBICIDE	5,509.4	ACRES
DUPONT FONTELIS FUNG	5,423.6	ACRES
EXTEND-97	5,324.7	ACRES
CARBINE 50WG	5,271.2	ACRES
IN-PLACE	5,260.0	ACRES
DU PONT MATRIX HERBICIDE	5,247.2	ACRES
PRO CROP OIL	5,237.5	ACRES
GALIGAN 2E	5,187.8	ACRES
CORNERSTONE PLUS	5,159.9	ACRES
IAP ORGANIC SUMMER 4	5,158.3	ACRES
DREXEL DIMETHOATE 4EC	5,115.9	ACRES
CUPROFIX ULTRA 40 DI	5,107.4	ACRES
WARRIOR II WITH ZEON	5,105.3	ACRES
DUPONT AVAUNT INSECT	5,056.6	ACRES
NUFARM RHOMENE MCPA	5,047.9	ACRES
OROBOOST	5,026.0	ACRES
FASTEN	5,014.6	ACRES
MIST-CONTROL (REVISE	5,004.9	ACRES
WILBUR-ELLIS SPRAY SULFUR	4,974.0	ACRES
PHT BUFFER	4,966.9	ACRES
MICROSULF	4,963.5	ACRES
MOVENTO (CA)	4,943.9	ACRES
TWINLINE FUNGICIDE	4,912.8	ACRES
MICROMITE 80WGS	4,873.8	ACRES
SOVRAN FUNGICIDE	4,849.0	ACRES
GEM 500 SC (CA) FUNG	4,846.2	ACRES
RECKON 280SL HERBICIDE	4,777.3	ACRES
MSO ULTRA	4,760.8	ACRES
ALTREVIN(TM) FIRE AN	4,727.1	ACRES
SURROUND WP CROP PROTECTANT	4,708.3	ACRES
KALIGREEN	4,668.0	ACRES
IMIDAN 70-W (CA & NY	4,661.0	ACRES
ACRAMITE 50WS (023/0	4,645.9	ACRES
PYGANIC CROP PROTECT	4,617.8	ACRES
WILBUR-ELLIS DUSTING SULFUR	4,616.0	ACRES
PROVINCE INSECTICIDE	4,588.2	ACRES
DELIVER	4,580.0	ACRES
CHEMINOVA DIMETHOATE 4E	4,567.0	ACRES
SEIZE(TM) 35 WP INSE	4,565.7	ACRES
NEVADO 4F	4,555.6	ACRES
ACIDIPHACTANT	4,548.5	ACRES
NU-LURE INSECT BAIT	4,522.3	ACRES
NU-COP 50 DF	4,504.4	ACRES
GOALTENDER	4,476.6	ACRES
RALLY 40W AGRICULTURAL FUNGICIDE IN WATER SOLUBLE POUCHES (WITHDRAWN)	4,454.4	ACRES
LAMCAP	4,424.0	ACRES
PERMETHRIN 3.2EC	4,420.2	ACRES
PINDAR GT	4,413.6	ACRES
CENTAUR WDG INSECT G	4,411.5	ACRES
MAX-IT	4,376.4	ACRES
SWITCH 62.5WG	4,323.4	ACRES

Product Name	Area Treated	Units
BELAY(R) INSECTICIDE	4,272.0	ACRES
R-11 SPREADER-ACTIVATOR	4,253.9	ACRES
BUCCANEER GLYPHOSATE HERBICIDE	4,249.7	ACRES
BIOLINK SPREADER-STI	4,246.1	ACRES
MAXIMIZER CROP OIL CONCENTRATE	4,243.2	ACRES
QUEST (CA)	4,225.9	ACRES
PERM-UP 3.2 EC INSECTICIDE	4,223.7	ACRES
KINETIC	4,213.3	ACRES
SNIPER	4,210.0	ACRES
ORYZALIN 4 A.S.	4,208.8	ACRES
ESTEEM(R) ANT BAIT	4,190.3	ACRES
PENNCAP-M MICROENCAPSULATED INSECTICIDE	4,173.0	ACRES
ADIOS(R)	4,171.0	ACRES
DREXEL IMITATOR PLUS	4,137.9	ACRES
CARZOL SP	4,128.2	ACRES
RAPTOR HERBICIDE	4,119.9	ACRES
ALION (CA) HERBICIDE	4,050.4	ACRES
MCPA-4 AMINE	3,999.8	ACRES
MAD DOG (CA)	3,977.9	ACRES
YELLOW JACKET WETTAB	3,948.0	ACRES
GOVERN 4E INSECTICIDE	3,922.4	ACRES
NUFOS 4E	3,904.5	ACRES
DUPONT FONTELIS FUNGICIDE	3,847.0	ACRES
RED-TOP DUSTING SULFUR	3,813.9	ACRES
ENTRUST	3,802.1	ACRES
PITCH 0.86 EC	3,796.4	ACRES
ASSAIL 30SG INSECTICIDE	3,793.5	ACRES
INTEGRO MAGIC SULFUR	3,785.0	ACRES
COMITE (046/111511)	3,757.2	ACRES
BSP LIME SULFUR SOLU	3,743.8	ACRES
CLEAN CROP SPRAY OIL 415	3,703.0	ACRES
QUEST	3,697.8	ACRES
VIGILANT 4SC	3,665.4	ACRES
MAKAZE (CA)	3,631.9	ACRES
BRITZ MAGIC SULFUR DUST	3,550.5	ACRES
ACTIVATE PLUS	3,548.8	ACRES
PHT NATURAL OIL BLEND	3,520.6	ACRES
CARBINE 50WG INSECTICIDE	3,513.6	ACRES
REIGN	3,487.4	ACRES
MAGNIFY	3,485.4	ACRES
OBERON 2SC INSECTICIDE/MITICIDE	3,463.4	ACRES
SUSTAIN	3,415.9	ACRES
ENTRUST SC	3,385.3	ACRES
PRINCEP CALIBER 90	3,372.8	ACRES
LUNA EXPERIENCE (CA)	3,333.2	ACRES
GEM 500 SC FUNGICIDE	3,323.6	ACRES
BRIGADE WSB	3,314.9	ACRES
415 SUPERIOR SPRAY OIL	3,294.6	ACRES
ZIRAM 76DF FUNGICIDE	3,257.7	ACRES
MONTANA 4F INSECTICIDE	3,245.6	ACRES
WHIRLWIND	3,219.7	ACRES
RETAIN PLANT GROWTH REGULATOR SOLUBLE POWDER	3,215.0	ACRES
SONOMA 40WSP	3,192.2	ACRES
ASSAIL 30SG	3,164.7	ACRES
NEXTER MITICIDE/INSECTITIDE	3,133.3	ACRES
RNA ACTIVATOR 85	3,123.0	ACRES
DIMILIN 2L (056/0418	3,072.3	ACRES
ESTEEM ANT BAIT	3,067.8	ACRES
INTEGRO MAGIC SULFUR DUST	3,065.7	ACRES
HONCHO HERBICIDE	3,063.6	ACRES
COTTONQUIK	3,030.7	ACRES
ABOUND FLOWABLE	2,994.3	ACRES
GLY-4 HERBICIDE	2,979.5	ACRES
DIMETHOATE 4E	2,964.0	ACRES
41-A	2,950.8	ACRES
INDUCE	2,939.4	ACRES
MSO CONCENTRATE WITH LECI-TECH	2,937.9	ACRES
SURROUND WP CROP PRO	2,934.2	ACRES
AZA-DIRECT	2,918.8	ACRES
CROP OIL CONCENTRATE	2,917.9	ACRES
LAMBDA-CY EC AGRICUL	2,916.0	ACRES
SERENADE ASO	2,878.1	ACRES
PURSUIT(R) HERBICIDE	2,856.1	ACRES
TEBUSTAR 45WSP	2,850.7	ACRES
ADIOS COTTON DEFOLIANT	2,817.8	ACRES
MANZATE PRO-STICK	2,802.1	ACRES
ETHEPHON 2SL	2,786.8	ACRES
NEXTER MITICIDE/INSECTICIDE	2,773.4	ACRES

Product Name	Area Treated	Units
CHECKMATE OFM-SL+	2,772.2	ACRES
CROPSMART GLYPHOSATE 41 PLUS	2,771.3	ACRES
LUNA EXPERIENCE	2,768.5	ACRES
TELONE II	2,760.9	ACRES
BRITZ SILGLOW	2,747.8	ACRES
MONTEREY BASIC COPPER SULFATE	2,747.6	ACRES
DREXEL SIMAZINE 90DF	2,746.3	ACRES
CONSTANT BUPH-ER	2,743.0	ACRES
MAXIMIZER	2,742.1	ACRES
TRI-FOL(R)	2,731.2	ACRES
DIURON 4L HERBICIDE	2,683.9	ACRES
ROVRAL 4 FLOWABLE	2,675.1	ACRES
TRAXION	2,672.5	ACRES
GF-120 NF NATURALYTE	2,671.8	ACRES
NORDOX 30/30 WG	2,668.0	ACRES
FOAM FIGHTER	2,652.4	ACRES
CLETHODIM 2E	2,642.6	ACRES
POINTBLANK	2,621.0	ACRES
TOUCHDOWN HITECH	2,620.6	ACRES
PROPICON 3.6EC	2,617.9	ACRES
YUKON (CA & NY)	2,606.1	ACRES
KARMEX DF	2,604.9	ACRES
PH-D(R) WDG	2,593.1	ACRES
CENTAUR WDG INSECT GROWTH REGULATOR	2,592.8	ACRES
GOVERN 4E	2,592.3	ACRES
ULTRA FLOURISH (CA)	2,590.8	ACRES
PRO BUPHER	2,578.3	ACRES
DUPONT CORAGEN INSECT CONTROL	2,570.7	ACRES
METAREX 4% SNAIL AND SLUG BAIT	2,565.0	ACRES
TACTIC	2,559.2	ACRES
CROSSHAIR	2,536.7	ACRES
BSP LIME SULFUR SOLUTION	2,525.8	ACRES
NEXTER	2,514.8	ACRES
IMIDAN 70-W	2,510.0	ACRES
ARROW 2 EC HERBICIDE	2,508.4	ACRES
BUMPER 41.8 EC	2,499.1	ACRES
COHERE	2,497.3	ACRES
BRITZ 415 SUPREME SP	2,494.6	ACRES
GF-120 FRUIT FLY BAIT	2,487.0	ACRES
NEVADO 4F (CA)	2,472.3	ACRES
KIMZALL PLANT GROWTH REGULATOR	2,446.2	ACRES
KIMZALL	2,442.7	ACRES
DUPONT KOCIDE 2000 F	2,434.0	ACRES
PRO-GIBB 4% LIQUID CONCENTRATE	2,413.0	ACRES
NU-COP 50DF	2,412.2	ACRES
PROPICURE 3.6F	2,411.6	ACRES
BELAY INSECTICIDE	2,403.1	ACRES
BRITZ SUPREME SPRAY OIL	2,400.0	ACRES
MEPIQUAT (CA)	2,397.5	ACRES
SERENADE MAX	2,396.5	ACRES
PENNCAP-M	2,393.7	ACRES
METAREX 4% SNAIL AND	2,373.4	ACRES
SCALA BRAND SC FUNGICIDE	2,358.0	ACRES
TEBUSTAR 45 WSP	2,354.9	ACRES
IPRODIONE 4L AG	2,349.5	ACRES
IAP ORGANIC 440 SPRAY OIL	2,333.6	ACRES
DU PONT STEWARD INSECTICIDE	2,325.0	ACRES
ROCKET DL	2,316.2	ACRES
PHT NATURAL OIL BLEN	2,295.0	ACRES
MANA ALIAS 4F	2,291.9	ACRES
ROUNDUP ORIGINAL HERBICIDE	2,291.5	ACRES
GALIGAN 2E OXYFLUORFEN HERBICIDE	2,283.7	ACRES
COTTONQUIK COTTON HARVEST AID/DEFOLIANT	2,281.9	ACRES
MEPICHLOR 4.2% LIQUI	2,277.5	ACRES
BADGE X2	2,277.2	ACRES
BWC HERBICIDE ENHANC	2,235.2	ACRES
CUTOUT COTTON DEFOLIANT	2,216.0	ACRES
IAP 415 SUMMER SPRAY OIL	2,210.7	ACRES
ETHREL BRAND ETHEPHON PLANT REGULATOR	2,209.5	ACRES
DEADLINE M-PS	2,187.4	ACRES
DUPONT MATRIX FNV HERBICIDE	2,184.5	ACRES
NORDOX	2,176.9	ACRES
PURSUIT HERBICIDE	2,165.0	ACRES
OMNI OIL 6-E	2,158.4	ACRES
WEATHER GARD COMPLETE	2,156.0	ACRES
ACRAMITE 50WS	2,145.3	ACRES
ELEVATE 50 WDG FUNGICIDE	2,134.3	ACRES
GRANDEVO	2,129.6	ACRES

Product Name	Area Treated	Units
ENVIDOR 2 SC (CA & P	2,117.7	ACRES
RETAIN(R) PLANT GROW	2,116.9	ACRES
PARROT 4L	2,106.0	ACRES
FUSILADE DX	2,092.1	ACRES
WARRIOR II WITH ZEON TECHNOLOGY	2,090.0	ACRES
PHT 440 SUPREME SPRA	2,082.1	ACRES
MEPIQUAT CHLORIDE 4.2% LIQUID	2,080.6	ACRES
PRINCEP CALIBER 90 HERBICIDE	2,072.3	ACRES
MICROMITE 80WGS (010	2,071.3	ACRES
NEW CENTURY DEPLOY	2,067.2	ACRES
MILLER NU FILM 17	2,056.5	ACRES
GLY-4 PLUS HERBICIDE	2,044.2	ACRES
SILWET L-77 SURFACTANT	2,036.1	ACRES
TOPSIN M WSB	2,019.2	ACRES
PENNCOZEB 75DF	2,016.5	ACRES
VULCAN (EPA 080912/R	2,002.0	ACRES
UNICORN DF	2,002.0	ACRES
MALATHION 8 AQUAMUL	1,987.3	ACRES
PHT GUIDE-IT	1,985.8	ACRES
MANZATE PRO-STICK FUNGICIDE	1,985.4	ACRES
ETHREL PLANT REGULATOR	1,984.8	ACRES
DUPONT KROVAR I DF H	1,984.7	ACRES
OMNI SUPREME SPRAY	1,980.8	ACRES
RALLY 40W AGRICULTURAL FUNGICIDE IN WATER-SOLUBLE POUCHES	1,980.1	ACRES
REX LIME SULFUR SOLU	1,978.1	ACRES
MONTEREY SUPER 7	1,975.9	ACRES
GF-120 NATURALYTE* FRUIT FLY BAIT	1,974.0	ACRES
SILWET L-77 SURFACTA	1,973.0	ACRES
DREXEL DIMETHOATE 2.67	1,966.0	ACRES
POAST(R) HERBICIDE	1,958.1	ACRES
K-27 KNAPP NONIONIC SPREADER AND STICKER FOR AGRICULTURAL SPRAYS	1,933.8	ACRES
RIDOMIL GOLD SL (CA	1,930.8	ACRES
CHAMP FORMULA 2 FLOWABLE	1,925.1	ACRES
PROTONE(R) SG PLANT	1,914.1	ACRES
SCALA BRAND SC (CA,	1,889.8	ACRES
COP-O-ZINC 25-25	1,887.3	ACRES
DREXEL CARBARYL 5% B	1,886.2	ACRES
DREXEL DIMETHOATE 4E	1,879.9	ACRES
DUPONT STEADFAST Q H	1,866.6	ACRES
LUNA SENSATION	1,864.2	ACRES
38-F DRIFT RETARDANT	1,855.0	ACRES
ROVRAL BRAND 4 FLOWABLE FUNGICIDE	1,849.3	ACRES
RAPTOR(R) HERBICIDE	1,846.0	ACRES
CLETHODIM 2EC HERBICIDE	1,836.2	ACRES
OXYFLO 2EC	1,822.7	ACRES
CHECKMATE PUFFER OFM	1,817.9	ACRES
SUPER SPREAD MSO (CA	1,810.7	ACRES
RIVERDALE MCPA-4 AMINE	1,805.0	ACRES
DURHAM METALDEHYDE GRANULES 3.5	1,803.8	ACRES
NEW CENTURY BUFFER X-TRA	1,802.4	ACRES
COURIER 40SC INSECT GROWTH REGULATOR	1,795.9	ACRES
SYL-TAC(R)	1,755.1	ACRES
LAMBDA-CY 1EC	1,752.0	ACRES
TOLEDO 45WP	1,745.8	ACRES
APOLLO SC	1,740.0	ACRES
PERMETHRIN 3.2EC (CA	1,737.0	ACRES
CLINCH	1,736.8	ACRES
ASPERGILLUS FLAVUS AF36	1,735.2	ACRES
HELENA BRAND PENETRATOR 3	1,730.4	ACRES
TRIFLUREX HFP	1,727.0	ACRES
ETHREL BRAND ETHEPHO	1,725.2	ACRES
EPI-MEK 0.15 EC MITI	1,715.7	ACRES
GOAL 2XL HERBICIDE	1,708.0	ACRES
REAPER ADVANCE	1,706.6	ACRES
CMR HERBICIDE ACTIVATOR	1,705.0	ACRES
DUSTING SULFUR 98	1,664.0	ACRES
REGALIA (CAUTION)	1,661.0	ACRES
APPLAUD INSECT GROWTH REGULATOR	1,651.9	ACRES
AMIGO	1,642.9	ACRES
PRINCEP 4L	1,628.6	ACRES
INDAR 2F	1,627.5	ACRES
AGRISOLUTIONS CORNERSTONE PLUS HERBICIDE	1,622.2	ACRES
PARITY HERBICIDE	1,616.6	ACRES
DREXEL DIURON 80 HERBICIDE	1,608.2	ACRES
LIBERATE	1,602.3	ACRES
M.A.P.CO. BRAND POLY-FOLIANT LIQUID DEFOLIANT	1,589.0	ACRES
MONTEREY NUTRIENT BU	1,587.0	ACRES
ABOUND FLOWABLE (CA	1,571.9	ACRES

Product Name	Area Treated	Units
SPRAY AIDE	1,569.5	ACRES
WRANGLER INSECTICIDE	1,568.0	ACRES
GLYFOS HERBICIDE	1,560.7	ACRES
LORSBAN 15G	1,558.4	ACRES
SELECT MAX(R) HERBIC	1,546.5	ACRES
AGRISOLUTIONS CORNERSTONE PLUS	1,545.8	ACRES
TOLEDO 45WP AGRICULTURAL FUNGICIDE	1,545.0	ACRES
LIBERTY 280 SL HERBICIDE	1,543.0	ACRES
MONTANA 4F	1,539.5	ACRES
VIVANDO(TM) FUNGICID	1,537.0	ACRES
BUCCANEER PLUS GLYPHOSATE HERBICIDE	1,531.0	ACRES
DUPONT LANNATE SP IN	1,530.2	ACRES
INTENSITY ONE	1,525.9	ACRES
BUMPER 41.8EC (PROPICONAZOLE) FUNGICIDE	1,519.5	ACRES
DIPHACINONE RODENT B	1,512.7	ACRES
DU PONT KROVAR I DF HERBICIDE	1,509.5	ACRES
WRANGLER	1,508.0	ACRES
KENTAN DF	1,501.0	ACRES
TOPSIN M 70WP	1,499.0	ACRES
BRITZ CITRUS SUPREME SPRAY OIL	1,484.6	ACRES
SEIZE 35 WP INSECT GROWTH REGULATOR	1,480.5	ACRES
STA-PUT PLUS	1,480.3	ACRES
MILLER NU-FILM-P	1,477.8	ACRES
ZORO MITICIDE/INSECTICIDE	1,461.1	ACRES
FIRST CHOICE GAVICID	1,460.5	ACRES
TENKOZ PERMETHRIN 3.2 EC INSECTICIDE	1,460.1	ACRES
CROPSMART GLYPHOSATE	1,458.6	ACRES
YUKON HERBICIDE	1,450.0	ACRES
DIMILIN 2L	1,440.4	ACRES
VERATRAN D	1,436.0	ACRES
PURESPRAY GREEN (CA)	1,430.6	ACRES
CMR SPREADER/STICKER	1,430.0	ACRES
STRATEGO FUNGICIDE	1,423.5	ACRES
DEGESCH PHOSTOXIN TABLETS	1,397.0	ACRES
QUADRIS TOP FUNGICIDE	1,395.5	ACRES
HARVESTPRO	1,395.0	ACRES
CARZOL SP INSECTICIDE	1,390.0	ACRES
CHECKMATE VMB-XL	1,387.0	ACRES
OBERON 2 SC INSECTIC	1,385.6	ACRES
SWEEP	1,382.9	ACRES
SLUGGER 4.0	1,382.0	ACRES
KANEMITE 15 SC MITICIDE	1,370.3	ACRES
PROTOCOL	1,370.1	ACRES
SPRAY SULFUR	1,366.0	ACRES
PHT CROP OIL CONCENTRATE CA	1,362.4	ACRES
MEP STAR	1,361.0	ACRES
BRAVO WEATHER STIK	1,357.0	ACRES
FLINT	1,354.0	ACRES
MEPICHLOR 4.2% LIQUID	1,348.4	ACRES
IAP COPPER SULFUR 15	1,346.6	ACRES
DEPLOY	1,343.6	ACRES
RECKON 280SL	1,342.2	ACRES
MOTIVATE	1,336.5	ACRES
DREXEL CHLORPYRIFOS 4E-AG	1,328.3	ACRES
EXTINGUISH PROFESSIONAL FIRE ANT BAIT	1,324.5	ACRES
MUSTANG (CA)	1,322.1	ACRES
AGRI-FLEX MITICIDE/INSECTICIDE	1,321.3	ACRES
HERBIMAX	1,316.6	ACRES
RELY 280 HERBICIDE	1,315.3	ACRES
ABOUND FLOWABLE FUNGICIDE	1,311.2	ACRES
PROGIBB(R) PLUS 2X P	1,306.0	ACRES
PLATINUM 75SG	1,300.5	ACRES
PARAQUAT CONCENTRATE	1,287.3	ACRES
ALTREVIN FIRE ANT BAIT INSECTICIDE	1,287.0	ACRES
PARALLEL HERBICIDE	1,284.0	ACRES
MCP 4 AMINE HERBICIDE	1,280.1	ACRES
BUDPRO	1,277.5	ACRES
RODENT BAIT DIPHACINONE TREATED GRAIN 0.01	1,270.5	ACRES
MON-52249 HERBICIDE	1,267.0	ACRES
ORGANIC ADHESIVE ADJUVANT	1,265.7	ACRES
JMS STYLET-OIL	1,264.0	ACRES
HELENA PENETRATOR	1,247.2	ACRES
WARRIOR INSECTICIDE	1,237.7	ACRES
CSC DUSTING SULFUR	1,235.7	ACRES
TREFLAN TR-10	1,230.9	ACRES
BUCCANEER	1,224.5	ACRES
ORTHENE 97	1,210.1	ACRES
BSP SULFORIX	1,202.5	ACRES

Product Name	Area Treated	Units
SPRET	1,199.5	ACRES
LEAF LIFE GAVICIDE G	1,199.2	ACRES
DUPONT VELPAR L HERB	1,195.7	ACRES
ORIUS 20AQ	1,195.0	ACRES
REAPER ADVANCE (CA)	1,183.0	ACRES
ELITE 45 WP FOLIAR FUNGICIDE IN WATER SOLUBLE PACKETS	1,180.4	ACRES
IAP 470 DORMANT SPRA	1,177.5	ACRES
PHT INTENSIFY	1,170.8	ACRES
M-PEDE	1,165.9	ACRES
DORMEX(TM)	1,158.3	ACRES
CSC COPPER SULFUR DUST	1,156.9	ACRES
ALECTO 41 HL	1,155.8	ACRES
PENNCOZEB DF 75% DRY FLOWABLE FUNGICIDE	1,151.0	ACRES
RNA TRI-AD 73	1,147.0	ACRES
STERLING BLUE	1,139.0	ACRES
CHECKMATE OFM DISPEN	1,135.2	ACRES
MALATHION 8-E INSECTICIDE	1,134.3	ACRES
OSPREY HERBICIDE	1,132.7	ACRES
FUNGI-PHITE	1,120.0	ACRES
S-FENVALOSTAR	1,101.7	ACRES
AGRI-MEK 0.15 EC MITICIDE/INSECTICIDE	1,098.0	ACRES
DIMETHOATE 400	1,097.0	ACRES
AGRI-MEK 0.15 EC	1,094.8	ACRES
ECO-MATE ARMICARB O	1,082.8	ACRES
COMITE (043/111510)	1,077.3	ACRES
DREXEL IMITATOR(R) P	1,075.1	ACRES
ARROW 2 EC (CA)	1,068.6	ACRES
DURHAM METALDEHYDE G	1,067.8	ACRES
CLUTCH 50 WDG INSECTICIDE 1	1,066.0	ACRES
N-LARGE PREMIER	1,057.1	ACRES
SUNSPRAY 6E WESTERN	1,056.0	ACRES
SEVIN 5 BAIT	1,052.6	ACRES
ROUNDUP ORIGINAL MAX HERBICIDE	1,052.4	ACRES
CUPROFIX DISPERSS	1,052.0	ACRES
NUPRID 2SC	1,050.3	ACRES
GINSTAR EC (CA) COTT	1,043.7	ACRES
GLYPHOSATE 4 PLUS	1,030.4	ACRES
ASSAIL 70 WP INSECTICIDE	1,028.7	ACRES
M.O.C.	1,028.2	ACRES
RAMIK OATS KILLS GROUND SQUIRRELS	1,027.4	ACRES
SILICONE SUPER WETTER	1,026.5	ACRES
SLUG-FEST 4.0	1,023.0	ACRES
FIRST CHOICE ULTRA PRO	1,022.8	ACRES
SOLICAM DF	1,016.7	ACRES
BRITZ COPPER SULFUR 15-25 DUST	1,016.4	ACRES
YELLOW JACKET SPECIA	1,016.0	ACRES
DIURON 80 DF HERBICIDE	1,009.0	ACRES
MAESTRO 2EC	1,000.1	ACRES