

ATTACHMENT 4

Preliminary Draft Report Staff Recommendations For Agricultural Order February 1, 2010

Surface Water and Riparian Monitoring Sampling Parameters

Parameter	Units	Sample Type	Reporting Limit	Minimum Frequency
Flow	CFS ¹	Instantaneous	---	Monthly
Total Nitrogen (N)	mg/L	Grab	0.1 mg/L	"
Nitrate (N)	mg/L	"	0.1 mg/L	"
Total Ammonia (N)	mg/L	"	0.1 mg/L	"
TKN ² (N)	mg/L	"	0.1 mg/L	"
Orthophosphate (P)	mg/L	"	0.01 mg/L	"
Turbidity	NTUs	"	0.5 NTU	"
Temperature (air)	°C	"	---	"
Temperature (water)	°C	"	---	"
pH	pH Units	"	---	"
Color	Units	"	---	"
Dissolved Oxygen	mg/L	"	0.01 mg/L	"
Total Dissolved Solids	mg/L	"	10 mg/L	"
Algal Description ³	Visual observation	"	---	"
Chlorophyll a	ug/L	"	1.0 ug/L	"
Chloride	mg/L	"	10 mg/L	"
Sodium	mg/L	"	10 mg/L	"
Boron	mg/L	"	0.2 mg/L	"
Sulfate (SO ₄)	mg/L	"	10 mg/L	"
Alkalinity as CaCO ₃	mg/L	"	10 mg/L	"
Conductivity	µmho/cm	"	---	"
Fecal Coliform	MPN/100mL	Grab	10 MPN/100mL	"
Filamentous algae coverage	Percent cover	Visual estimate	---	"
Phenol	µg/L	Grab	0.05 mg/L	Once every five years
Water toxicity ⁴ <i>Ceriodaphnia dubia</i> (U.S. EPA Method 1002.0 7-day chronic survival and reproduction test) <i>Pimephales promelas</i> (U.S. EPA Method 1001.0 7-day chronic larval survival and growth test) <i>Selenastrum capricornutum</i>				Twice ⁵ during wet season coincident with storm events (Oct 15 through May 15) and twice during dry season (May 16 through Oct 14)

¹ Cubic feet per second. Should also report duration of flow.

² Total Kjeldahl Nitrogen

³ Narrative description of algae present at station shall include algal color, location with respect to stream banks and depth of water, appearance (filamentous, matting, attached, etc.), percent coverage of water surface).

Parameter	Units	Sample Type	Reporting Limit	Minimum Frequency
(U.S. EPA (Method 1003.0) 96-hour growth)				
Sediment toxicity ⁶ Hyalella azteca (10-day survival and growth test)		Composite		Spring (March 1 – April 30)
Benthic invertebrate assessment ⁷		California Rapid Bioassessment Protocols		Spring (March 1 – April 30), concurrent with sediment sampling
Aluminum	mg/L	Grab	5.0 mg/L	Once every five years, sediment sampling ^{8, 9}
Arsenic	mg/L	“	0.1 mg/L	
Beryllium	mg/L	“	0.1 mg/L	
Boron	mg/L	“	0.75 mg/L	
Cadmium	mg/L	“	0.004 mg/L	
Chromium	mg/L	“	0.05 mg/L	
Cobalt	mg/L	“	0.05 mg/L	
Copper	mg/L	“	0.01 mg/L	
Fluoride	mg/L	“	1.0 mg/L	
Iron	mg/L	“	5.0 mg/L	
Lead	mg/L	“	0.03 mg/L	
Lithium	mg/L	“	2.5 mg/L	
Manganese	mg/L	“	0.2 mg/L	
Mercury	mg/L	“	0.0002 mg/L	
Molybdenum	mg/L	“	0.01 mg/L	
Nickel	mg/L	“	0.1 mg/L	
Nitrate + Nitrite (N)	mg/L	“	100 mg/L	
Nitrite (N)	mg/L	“	10 mg/L	
Selenium	mg/L	“	0.02 mg/L	
Vanadium	mg/L	“	0.1 mg/L	
Zinc	mg/L	“	0.004 mg/L	
The following parameter(s) must be calculated				
Un-ionized Ammonia ¹⁰	mg/L	---	---	---

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⁴ 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.

⁵ When conducting stormwater toxicity analysis, submit all other Table 6 data for that event.

⁶ USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C.

⁷ California Aquatic Bioassessment Laboratory, 2003. California Stream Bioassessment Procedure. Water Pollution Control Laboratory, California Department of Fish and Game.

⁸ Basin Plan, 1994, Metals for Aquatic life

⁹ Basin Plan, 1994, Water Quality Objectives for Agricultural Water Use

¹⁰ Temperature and pH are to be measured in the field at the same time the Total Ammonia sample is collected. Results shall be used to calculate and report Un-ionized Ammonia concentrations.