CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

ORDER NO. R5-2010-XXXX

NPDES NO. CA0081400

SIERRA PACIFIC INDUSTRIES, INC.
SHASTA LAKE DIVISION
SHASTA COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	Sierra Pacific Industries, Inc.
Name of Facility	Shasta Lake Division
Facility Address	3735 El Cajon Ave.
	Redding, CA 96019
	Shasta County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **minor** discharge.	

The discharge by Sierra Pacific Industries, Inc., Shasta Lake Division from the discharge points identified below are subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
D-001	Pond Water	40° 40' 30" N	122° 23' 05" W	Unnamed tributary to Churn Creek (Discharge Closed)
D-002	Pond Water	40° 40' 30" N	122° 23' 05" W	Unnamed tributary to Churn Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**Adoption Date**
This Order shall become effective on:	**Adoption Date**
This Order shall expire on:	**Expiration Date**
The Discharger shall file a complete Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

IT IS HEREBY ORDERED, that Order No. **R5-2003-0154** is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **Adoption Date.**

PAMELA C. CREEDON, Executive Officer

Table of Contents

SIERRA PACIFIC INDUSTRIES, INC. 1
I. FACILITY INFORMATION 3
II. FINDINGS 3
III. DISCHARGE PROHIBITIONS 10
IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS 11
A. Effluent Limitations – Discharge Point D-002 11
1. Final Effluent Limitations – Discharge Point D-002 11
2. Interim Effluent Limitations – Not Applicable 11
B. Land Discharge Specifications – Not Applicable 11
C. Reclamation Specifications – Not Applicable 11
V. RECEIVING WATER LIMITATIONS 11
A. Surface Water Limitations 11
C. Groundwater Limitations. 14
VI. PROVISIONS 14
A. Standard Provisions 14
B. Monitoring and Reporting Program (MRP) Requirements 19
C. Special Provisions 19
1. Reopener Provisions 19
2. Special Studies, Technical Reports and Additional Monitoring Requirements 20
3. Best Management Practices and Pollution Prevention 22
4. Construction, Operation and Maintenance Specifications 23
5. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable 24
6. Other Special Provisions 24
7. Compliance Schedules – Not Applicable 24
VII. COMPLIANCE DETERMINATION – NOT APPLICABLE 25

LIST OF TABLES

Table 1. Discharger Information ..... Cover
Table 2. Discharge Location ..... Cover
Table 3. Administrative Information ..... Cover
Table 4. Facility Information 3
Table 5. Basin Plan Beneficial Uses 6
Table 6. Final Effluent Limitations Discharge Point D-002. 11
Table 7. Salinity Evaluation and Minimization Plan 20

LIST OF ATTACHMENTS

ATTACHMENT A – DEFINITIONS A-1
ATTACHMENT B – MAP B-1
ATTACHMENT C – FLOW SCHEMATIC C-1
ATTACHMENT D – STANDARD PROVISIONS D-1
ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP) E-1
ATTACHMENT F – FACT SHEET F-1
ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS G-1
ATTACHMENT H – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDYH-1

I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	Sierra Pacific Industries, Inc.
Name of Facility	Shasta Lake Division
Facility Address	3735 El Cajon Ave.
	Redding, CA 96019
	Shasta County
Facility Contact, Title, and Phone	John Phillips, Division Manager (530) 275-8851 Mary Bennett (530) 275-8851
Mailing Address	3735 El Cajon Ave.
	Redding, CA 96019
Type of Facility	SIC Code 2421 – Sawmills & Planing Mills
Facility Design Flow	Not Applicable

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Water Board), finds:

A. Background. Sierra Pacific Industries, Inc., Shasta Lake Division (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2003-0154 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081400. The Discharger submitted a Report of Waste Discharge (RWD), dated 9 April 2008 and applied for a NPDES permit renewal to discharge an unspecified volume of commingled process water and storm water from the Facility. The application was deemed complete on 23 April 2008.

For the purposes of this Order, references to the "Discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The Discharger owns and operates a 100-million board foot sawmill complex in conjunction with a wood burning boiler for generation of steam for kiln heating (hereinafter Facility), in the City of Shasta Lake, Shasta County, in Section 36, T33N, R5W, MDB&M, as shown on Attachment B. (Assessor's Parcel No. 006-030-34).

The Facility consists of a paved log yard, sawmill, sorter/stacker, planer, various storage sheds, drying kilns, boiler, bone yard, maintenance shop, and an office. During the summer months, the Discharger utilizes an average of 0.17 million gallons per day (mgd) of reclaimed treated domestic wastewater from the City of Shasta Lake

Wastewater Treatment Facility for log sprinkling. The excess log yard runoff enters return ditches and a recycle pond. While sprinkling, the log yard is operated as a closed loop system. The Discharger has completed paving of 100% of the log yard. During precipitation periods, the log sprinkling is stopped and log yard runoff is directed into a 25-acre retention pond. When the retention pond reaches maximum storage capacity, pond water is discharged through discharge point D-002 (see table on cover page) to an the unnamed tributary of Churn Creek, a water of the United States and a tributary to the Sacramento River via Churn Creek, within the Redding Hydrologic Unit, Enterprise Flat Hydrologic Area (508.10) as defined by the interagency hydrologic map for the Sacramento Hydrologic Basin prepared by the Department of Water Resources (1986). A previous discharge location (D-001) has been sealed. Discharge from D-001 is not currently permitted. Attachment B provides topographic maps of the Facility and surrounding area. Attachment C provides a flow schematic of the Facility.

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through H are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (CFR)[1] require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet federal technology-based requirements base on Timber Products Processing Point Source Category 40 CFR Part 429 and Best Practical Control Technology (BPT) in accordance with Part 125, section 125.3.

40 CFR Part 429 contains effluent limitation guidelines for the timber products processing point source category that are divided into sixteen subcategories. Specifically, Subpart A (Barking Subcategory), Subpart I (Wet Storage Subcategory),

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

and Subpart K (Sawmills and Planing Mills Subcategory) are applicable. Any existing point source subject to these subparts shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT): there shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-based Effluent Limitations. Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (revised February 2007), for the Sacramento and San Joaquin River Basins* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Sacramento River (from Shasta Dam to Colusa Basin Drain) and its unlisted tributaries, including Churn Creek and its tributaries, are as follows: municipal and domestic supply (MUN); agricultural supply, including stock watering (AGR); industrial service supply (IND), hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation, including aesthetic enjoyment; commercial and sport fishing (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm migration of aquatic organisms (MIGR); cold migration of aquatic organisms (MIGR); warm spawning, reproduction, and/or early development (SPWN); cold spawning, reproduction, and /or early development (SPWN); wildlife habitat (WILD); and navigation (NAV).

Table 5. Basin Plan Beneficial Uses

Discharge Points	Receiving Water Name	Beneficial Use(s)
D-002 D-001 (Closed)	Unnamed tributary to Churn Creek	Existing: Municipal and domestic water supply (MUN). Agricultural supply, including stock watering (AGR); Industry Service Supply (IND) and Power Generation (POW); Contact (REC-1) and non-contact (REC-2) water recreation; Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm and Cold Migration of Aquatic Organisms (MIGR); Warm and Cold Spawning, Reproduction, and/or early Development (SPWN); Wildlife habitat (WILD); Navigation (NAV).

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*"

1. The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

   The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. **Compliance Schedules and Interim Requirements. –** In general, an NPDES permit must include final effluent limitations that are consistent with Clean Water Act section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See *In the Matter of Waste Discharge Requirements for Avon Refinery* (State Board Order WQ 2001-06 at pp. 53-55). See also *Communities for a Better Environment et al. v. State Water Resources Control Board*, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (See Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with the United States Environmental Protection Agency policies and administrative decisions. See, e.g., Whole Effluent Toxicity (WET) Control Policy. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation that exceeds one year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not include compliance schedules and interim effluent limitations.

L. Alaska Rule. On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and Water Quality Based Effluent Limitations (WQBELs) for individual pollutants. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are more stringent than required by the CWA. The rationale for including these limitations is explained in the Fact Sheet. In addition, the Regional Water Board has considered the factors in Water Code section 13241 in establishing these requirements.

WQBEL have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutants WQBEL were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR section 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more

stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in Order R5-2003-0154. As discussed in detail in the Fact Sheet, Section IV.D.3, previous effluent limitations for cadmium and bis-2-ethylhexylphthalate have been removed.

P. Monitoring and Reporting. Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

R. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, V.B, and VI.C of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

S. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

T. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings, is prohibited.

B. Discharge except when a minimum 10:1 (receiving water to effluent) flow dilution is achieved between the upstream receiving water (R-1) and the effluent is prohibited.

C. Discharge from D-001 (previous discharge location), is prohibited.

D. The direct discharge of recycled water from log sprinkling and discharge of recycle pond water to surface waters or surface water drainage courses is prohibited.

E. The direct discharge of reclaimed water to surface waters or surface water drainage courses is prohibited.

F. Discharge of boiler blowdown and other process water, designated for discharge to the sanitary sewer, to surface water drainage courses is prohibited.

G. The by-pass or overflow of wastewater to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

H. The discharge of ash, bark, sawdust, wood, debris, or any other wastes recognized as originating from the facility to surface waters or surface water drainage courses is prohibited.

I. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

J. The discharge of hazardous or toxic substances, including storm water treatment chemicals, grinding aid, solvents or petroleum products (i.e., oil, grease, gasoline, and diesel) to surface waters or groundwater is prohibited.

K. Discharge of wastes classified as “hazardous” as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., or “designated”, as defined in Section 13173 of the California Water Code is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point D-002

1. Final Effluent Limitations – Discharge Point D-002

a. The Discharger shall maintain compliance with the following effluent limitations specified in Table 6 below at Discharge Point D-002, with compliance measured at Monitoring Location EFF-002 as described in the attached MRP (Attachment E):

Table 6. Final Effluent Limitations Discharge Point D-002.

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH [1]	standard units				6.0[1]	9.0[1]
Settleable Solids	mL/L	0.1 [2]		0.2		
Total Suspended Solids	mg/L			100		
Copper, total recoverable	ug/L	1.82		3.64		
Lead, total recoverable	ug/L	0.32		0.63		
Zinc, total recoverable	ug/L	5.33		10.69		

(1) Except for discharges associated with a 10-year 24-hour rainfall event, or greater.
(2) For calculating Average Monthly, use Zero for Non-Detects (<0.1).

b. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. 70%, minimum for any one bioassay; and
ii. 90%, median for any three or more consecutive bioassays.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on the Basin Plan water quality objectives contained in the Basin Plan and are required as part of this Order. The discharge shall not cause the following in the unnamed tributary of Churn Creek:

1. **Biostimulatory Substances**. Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

2. **Chemical Constituents**. Chemical constituents to be present in concentrations that adversely affect beneficial uses.

3. **Color**. Discoloration that causes nuisance or adversely affects beneficial uses.

4. **Dissolved Oxygen**:

   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
   c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

5. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

6. **Oil and Grease**. Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

7. **pH**. The pH to be depressed below 6.5, raised above 8.5, nor changed by more than 0.5 units. An averaging period may be applied when determining compliance with the pH limitation.

8. **Pesticides**:

   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods prescribed in *Standard Methods for the Examination of Water and Wastewater, 18th Edition*, or other equivalent methods approved by the Executive Officer.
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR §131.12.).
   e. Pesticide concentrations to exceed the lowest levels technically and economically achievable.
   f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
   g. Thiobencarb to be present in excess of 1.0 ug/L.

9. **Radioactivity**:

   a. Radionuclides to be present in concentrations that are harmful/deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
   b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

10. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

11. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

12. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

13. **Taste and Odors**. Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses/or to domestic or municipal water supplies.

14. **Temperature**. The natural temperature to be increased by more than 5°F (3C). or higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

15. **Toxicity**. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

16. **Turbidity**. Waters shall be free in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributed to controllable water quality factors shall not exceed the following limits:
    a. Where natural turbidity is less than 1 Nephelometric turbidity Unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2 NTUs.
    b. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
    c. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    d. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
    e. More than 10 percent where natural turbidity is greater than 100 NTUs.

    Turbidity (NTU) shall be determined by (1) individual samples or (2) by samples taken over an appropriate averaging period.

C. Groundwater Limitations.

This Order does not require the Discharger to conduct groundwater monitoring. There is no current evidence to indicate that pond water discharges from the facility pose any unusual threat to groundwater quality. Groundwater monitoring is conducted at the closed landfill located immediately adjacent to the retention pond. If any information becomes available indicating adverse groundwater impacts from the pond operation, a groundwater investigation may be required.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order. Some of these Standard Provisions are not applicable to sawmills.

2. The Discharger shall comply with the following provisions:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, Division 3, Chapter 26.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;

      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

      iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

      iv. a material change in the character, location, or volume of discharge.

      The causes for modification include:

      - *New regulations.* New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

      - *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

- *Change in sludge use or disposal practice.* Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

   i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

   ii. controls any pollutant limited in the Order.

   The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

   i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.

   iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision VI.A.2.m.

   The technical report shall:

   i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

   ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

   iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

k. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Regional Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report.

l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

m. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211).

o. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (530) 224-4845 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

   To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

r. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA.

s. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

t. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

u. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

v. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

w. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

x. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211)

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including:

   i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

   ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and re-issuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Constituent Study**. This Order requires the Discharger to conduct monitoring for aluminum, iron, manganese, sulfate, and chloride as outlined in the Monitoring and Reporting Program (Attachment E). If the Regional Water Board determines that implementation of effluent limitations is appropriate and necessary, this Order may be reopened.

d. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for cadmium, copper, lead, and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Log Yard Flushing Study.** The Discharger shall develop a plan for conducting a Log yard Flushing study, to be approved by the Regional Water Board. The Plan shall be submitted to the Regional Water Board prior to the 2010/2011 wet season. The intent of the study is to establish the relationship between the volume of flush or amount of rainfall, and the concentrations of pollutants (e.g., tannins & lignins, EC, COD, and turbidity). Results of the study must be submitted to the Regional Water Board prior to the 2011/2012 wet season.

b. **Salinity Evaluation and Minimization Plan**. The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the Facility. The plan shall be completed and submitted to the Regional Water Board within **1 year of the effective date of this Order** for the approval by the Executive Officer.

Table 7. Salinity Evaluation and Minimization Plan

Task	Compliance Date
1 - Submit Work plan and Time Schedule	Within 6 months of the effective date of the Order
2 - Begin Study	Within 3 months of Regional Water Board approval of Work plan and Time Schedule
3 - Complete Study	As established by Task 1
4 - Submit Summary Report	60 days following completion of Task 3 (no greater than 2 years after the effective date of this Order)

c. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Work Plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan. Within 90 days of the effective date of this Order,** the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at minimum:

a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;

b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and

c) A discussion of who will conduct the Toxicity Identification Evaluation, if necessary (i.e. an in-house expert or outside contractor).

ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrates a pattern of toxicity and requires the Discharger to initiate a TRE to address the effluent toxicity.

iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is **1 TUc** (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests every two weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

b) If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;

2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

3) A schedule for these actions.

d. **Storm Water Pollution Controls.**

i. Storm Water Pollution controls are covered under the General Industrial Storm Water Permit.

e. **Groundwater Monitoring.** - Not Applicable

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program (PMP).** The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health

advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: 1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or 2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the MRP.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Regional Water Board including:
(1) All PMP monitoring results for the previous year;
(2) A list of potential sources of the reportable priority pollutant(s);
(3) A summary of all actions undertaken pursuant to the control strategy; and
(4) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. Pond Operating Requirements.

i. The treatment facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
b) Weeds shall be minimized, and
c) Vegetation, debris, and dead algae shall not accumulate on the water surface.

iv. Freeboard in the retention pond shall not be less than 2 feet (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the retention pond , no overflow of the retention pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event.

5. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable

6. Other Special Provisions

a. Sediment, Sludge, Topsoil, and Overburden Management

i. Collected screenings, sludge and other solids removed from liquid wastes, including pond sediments, shall be disposed of in a proper manner approved by the Executive officer and consistent with the Consolidated Regulations for treatment, storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq.

ii. The storage of pond sediments shall be done in a manner to prevent nuisance, pollution or impairment of beneficial uses of the Churn Creek.

iii. Any proposed change in pond sediment or sludge disposal or storage practices shall be reported to the Executive Officer at least 90 days in advance of the change.

b. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, Section V.B.) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION – Not Applicable

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (u), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $u = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Averaging Period: a minimum of four samples per day from each upstream and downstream station for a period of up to 4 days during discharge. Samples collected for averaging must be spaced at least 3 hours apart.

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that, *"(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."* Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (*CV*) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include~~d~~, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through

pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - u)^2]/(n - 1))^{0.5}$$

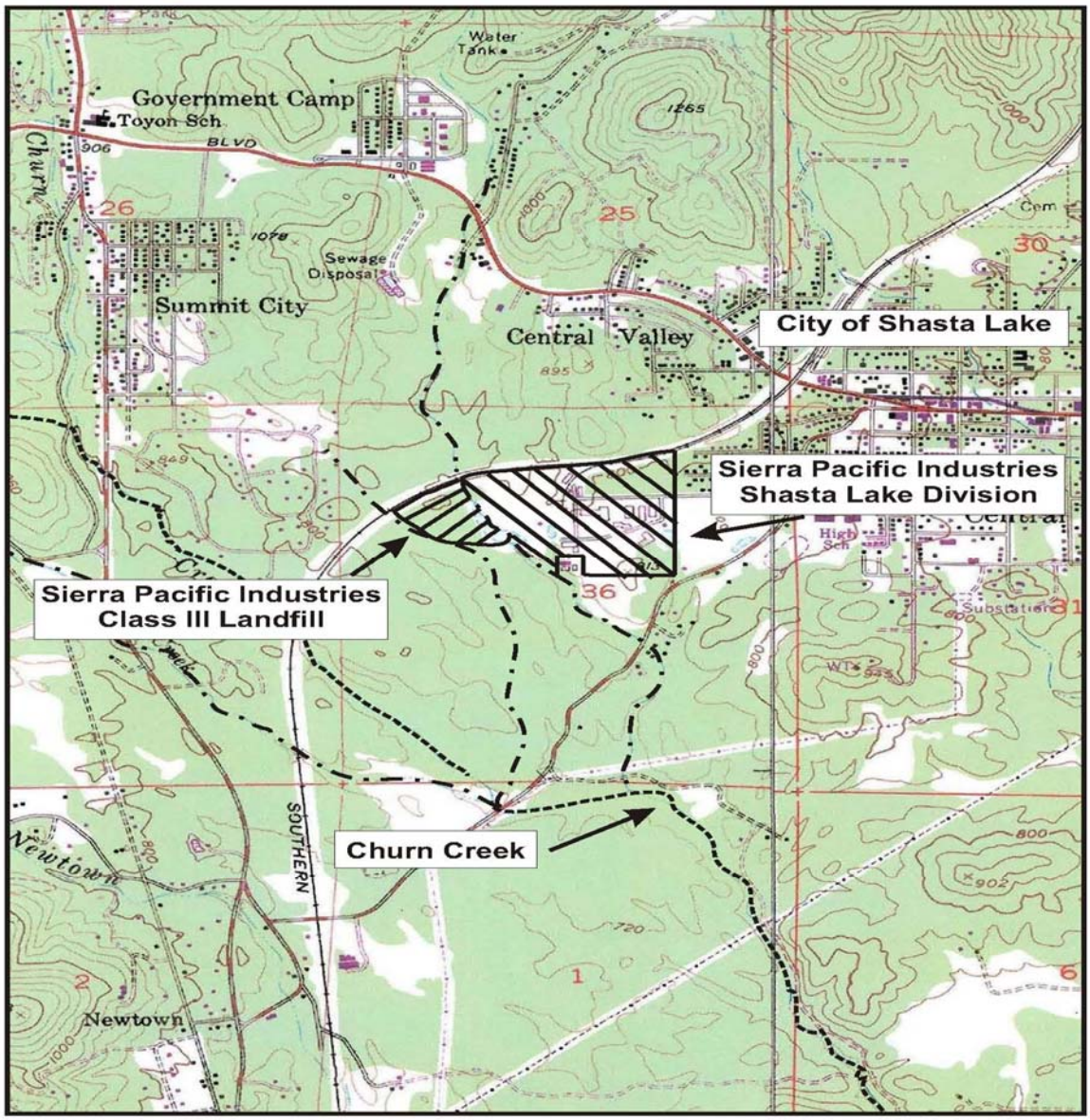
where:

x is the observed value;
u is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including

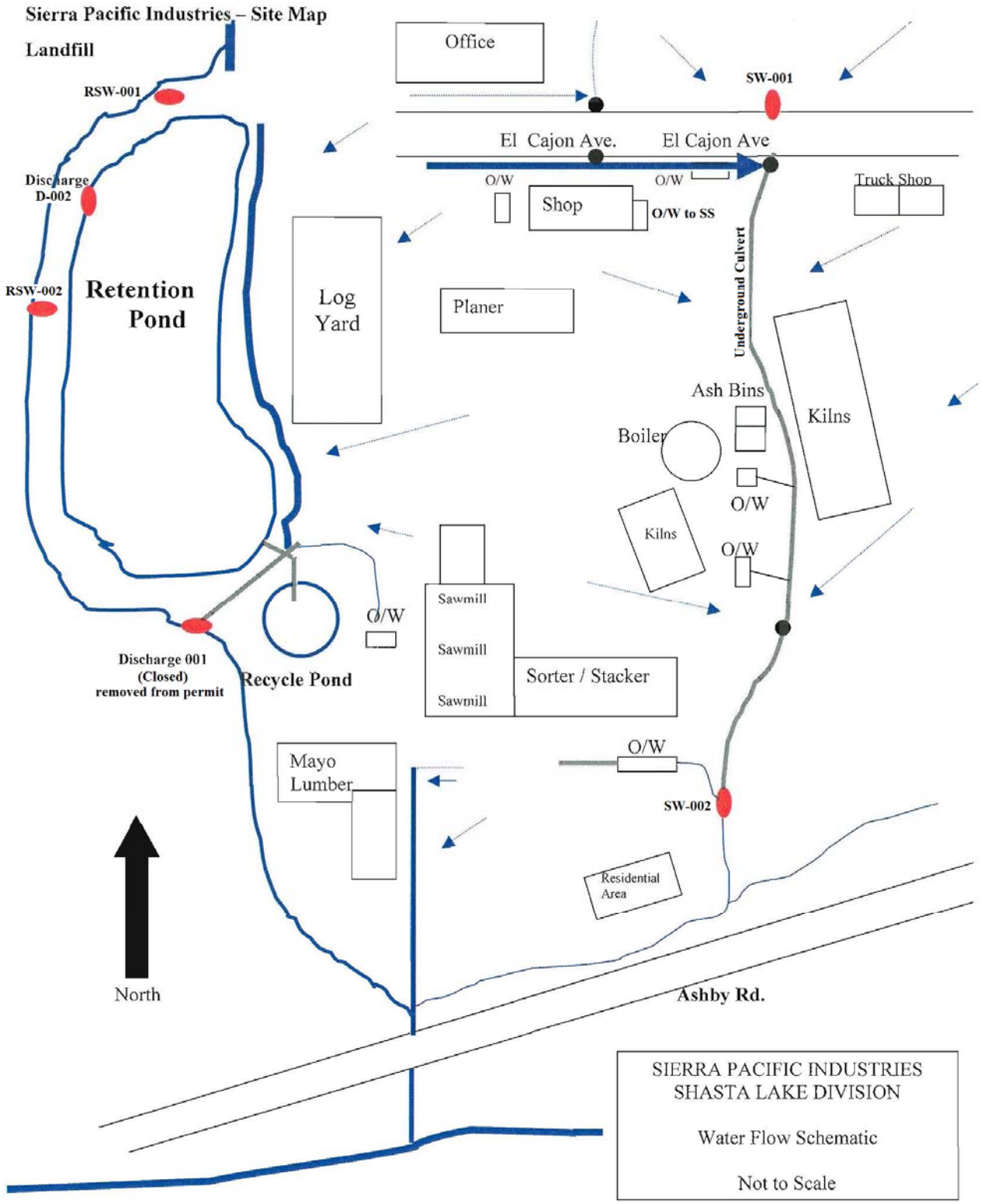
additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – TOPOGRAPHIC MAPS



PROJECT CITY U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Photorevised* *Not to scale*	Section 36, T33N, R5W, MDB&M SIERRA PACIFIC INDUSTRIES, INC. SHASTA LAKE DIVISION	N W E S

ATTACHMENT C – FLOW SCHEMATICS



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1))

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c))

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d))

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e))

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g))

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c))

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4))

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i))

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii))

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2))

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

    c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C))

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii))

5. Notice

    a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i))

    b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii))

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1))

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2))

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions, Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv))

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4))

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f))

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b))

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1))

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv))

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2))

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi))

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2))

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k))

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1))

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative

may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3))

5. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c))

6. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d))

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.22(l)(4))

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i))

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii))

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii))

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date.
(40 C.F.R. § 122.41(l)(5))

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i))

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A))

   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B))

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii))

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii))

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii))

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2))

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7))

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8))

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv))

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 C.F.R. § 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv))

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP) E-1
I. GENERAL MONITORING PROVISIONS E-1
II. MONITORING LOCATIONS E-2
III. INFLUENT MONITORING REQUIREMENTS - NOT APPLICABLE E-3
A. Monitoring Location - Not Applicable E-3
IV. EFFLUENT MONITORING REQUIREMENTS E-3
A. Monitoring Location EFF-002 ..... E-3
V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS E-5
VI. LAND DISCHARGE MONITORING REQUIREMENTS - NOT APPLICABLE E-8
VII. RECLAMATION MONITORING REQUIREMENTS E-8
VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER E-8
IX. OTHER MONITORING REQUIREMENTS E-10
A. Storm Water Monitoring (General) E-10
B. Pond Monitoring (PND-001 and PND-002) E-10
C. Precipitation Monitoring E-10
D. Aboveground Petroleum Storage Monitoring E-10
E. Ash Monitoring E-10
X. REPORTING REQUIREMENTS E-11
A. General Monitoring and Reporting Requirements E-11
B. Self Monitoring Reports (SMRs) E-13
C. Discharge Monitoring Reports (DMRs) E-16
D. Other Reports E-16

List of Tables

Table E-1. Monitoring Station Locations E-2
Table E-2. Effluent Monitoring Location EFF-002 ..... E-4
Table E-3. Chronic Toxicity Testing Dilution Series E-6
Table E-4. Receiving Water Monitoring Requirements RSW-001 ..... E-8
Table E-5. Receiving Water Monitoring Requirements RSW-002 ..... E-9
Table E-7. Retention Pond and Recycle Pond Monitoring Requirements E-10
Table E-8. Ash Monitoring Requirements E-11
Table E-9. Monitoring Periods and Reporting Schedule E-14

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Title 40 of the Code of Federal Regulations (CFR) section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CFR) Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and state regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the Department of Public Health (DPH, formally the Department of Health Services). In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the DPH. Laboratories that perform sample analyses shall be identified in all monitoring reports submitted to the Regional Water Board.

E. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

F. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

G. Laboratories analyzing monitoring samples shall be certified by DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

H. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

I. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.

J. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
D-001	EFF-001 (closed)	By-pass outfall from log yard recycle pond (closed and no longer used. Historical information only)
D-002	EFF-002	Outfall from the 25-acre Retention Pond (includes storm water from the log deck) Latitude 40° 40’ 30” N and Longitude 122° 23’ 05” W
	RSW-001	Unnamed tributary to Churn Creek, approximately 100’ above monitoring location EFF-002.
	RSW-002	Unnamed tributary to Churn Creek, approximately 50’ below monitoring location EFF-002.
	PND-001	25-acre Retention Pond
	PND-002	Log Yard Recycle Pond

III. INFLUENT MONITORING REQUIREMENTS - NOT APPLICABLE

A. Monitoring Location - Not Applicable

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-002

1. The Discharger shall monitor the outfall from the retention pond at Monitoring Location EFF-002. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-2. Effluent Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	cfs	Meter	Daily	
COD	mg/L	Grab	Weekly during discharge[1]	
Electrical Conductivity @ 25°C	umhos/cm	Grab	Weekly during discharge[1]	
pH	pH units	Grab	Weekly during discharge[1]	
Settleable Solids	mL/L	Grab	Weekly during discharge[1]	
Tannins & Lignins	mg/L	Grab	Weekly during discharge[1]	
Total Suspended Solids	mg/L	Grab	Weekly during discharge[1]	
Turbidity	NTU	Grab	Weekly during discharge[1]	
Hardness	mg/L	Grab	Weekly during discharge[1]	
Copper, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Lead, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Zinc, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Alkalinity	mg/L	Grab	Monthly during discharge[1]	
Oil & Grease	mg/L	Grab	Twice per year	
Aluminum	ug/L	Grab	Annually	
Iron	ug/L	Grab	Annually	
Manganese	ug/L	Grab	Annually	
Chloride	mg/L	Grab	Annually	
Sulfate	mg/L	Grab	Annually	
Total Dissolved Solids	mg/L	Grab	Annually	
Acute Toxicity	% Survival	Grab	Annually	
Priority Pollutant Metals [2, 3]	ug/L	Grab	Annually	
Chronic Toxicity	% Survival	Grab	Bi-annually	
Priority Pollutants [2,4]	ug/L	Grab	Bi-annually	

(1) Initial samples shall be collected during daylight hours during the first hour of the first discharge after the dry season and according to the sampling frequency thereafter.
(2) Detection limits shall be at or below the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
(3) Antimony, arsenic, beryllium, cadmium, chromium III, chromium IV, copper, lead, mercury (EPA Method 1669/1631), nickel, selenium, silver, thallium, zinc, and cyanide.
(4) Priority Pollutants – one set during 1st 2-years of the permit, and one set during the 2nd 2-years of the permit.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – the Discharger shall perform **annual** acute toxicity testing.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-002.

3. *Test Species* – Test species shall be rainbow trout (*Oncorhychus mykiss*).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. **Chronic Toxicity Testing**. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* – the Discharger shall perform **bi-annual** three species chronic toxicity testing. One set during 1st 2-years of the permit, and one set during the 2nd 2-years of the permit

2. *Sample Types* – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at effluent monitoring location EFF-002 as specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in the Monitoring and Reporting Program.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g. reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

- The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
- The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – The chronic toxicity testing shall be performed using 100% effluent and two controls. If toxicity is found in any effluent test, the Discharger must immediately retest using the dilution series identified in Table E-3, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

Table E-3. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

8. *Test Failure* –The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Provisions VI.C.2.c.iii)

C. **WET Testing Notification Requirements**. The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. **WET Testing Reporting Requirements**. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.

   b. The statistical methods used to calculate endpoints;

   c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

   d. The dates of sample collection and initiation of each toxicity test; and

   e. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE. (Note: items a through c, above, are only required when testing is performed using the full dilution series.)

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes (If applicable):

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS - NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS

Reclaimed water from the City of Shasta Lake WWTP is used in the summer months to offset potable water use for log sprinkling. The City of Shasta Lake WWTP conducts reclaimed water monitoring.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-001

1. The Discharger shall monitor the unnamed tributary of Churn Creek at monitoring location RSW-001 as follows:

Table E-4. Receiving Water Monitoring Requirements RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	cfs	Gage	Daily during discharge	
Electrical Conductivity @ 25°C	umhos/cm	Grab	Weekly during discharge[1]	
pH	pH units	Grab	Weekly during discharge[1]	
Turbidity	NTU	Grab	Weekly during discharge[1]	
Hardness	mg/L	Grab	Weekly during discharge[1]	
Copper, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Lead, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Zinc, total recoverable	ug/L	Grab	Weekly during discharge[1]	
Aluminum	ug/L	Grab	Annually	
Iron	ug/L	Grab	Annually	
Manganese	ug/L	Grab	Annually	
Chloride	mg/L	Grab	Annually	
Sulfate	mg/L	Grab	Annually	
Priority Pollutant Metals [2, 3]	ug/L	Grab	Annually	
Priority Pollutants [2,4]	ug/L	Grab	Bi-annually	

(1) Initial samples shall be collected during daylight hours during the first hour of the first discharge after the dry season and according to the sampling frequency thereafter.
(2) Detection limits shall be at or below the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
(3) Antimony, arsenic, beryllium, cadmium, chromium III, chromium IV, copper, lead, mercury (EPA Method 1669/1631), nickel, selenium, silver, thallium, zinc, and cyanide.
(4) Priority Pollutants – one set during 1st 2-years of the permit, and one set during the 2nd 2-years of the permit.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions through the reach bounded by RSW-001 and RSW-002. Attention shall be given to the presence or absence of:

   a. Upstream Flow
   b. Visible films, sheens or coatings
   c. Floating or suspended matter
   d. Bottom deposits
   e. Odor
   f. Aquatic life
   g. Discoloration
   h. Fungi, slimes, or objectionable growths

   Notes on receiving water conditions shall be summarized in the monthly monitoring report.

B. Monitoring Location RSW-002

1. The Discharger shall monitor the unnamed tributary of Churn Creek at monitoring location RSW-002 as follows:

Table E-5. Receiving Water Monitoring Requirements RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Hardness	mg/L	Grab	Weekly during discharge[1]	
pH	pH units	Grab	Weekly during discharge[1]	
Turbidity	NTU	Grab	Weekly during discharge[1]	

(1) Initial samples shall be collected during daylight hours during the first hour of the first discharge after the dry season and according to the sampling frequency thereafter.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions through the reach bounded by RSW-001 and RSW-002. Attention shall be given to the presence or absence of:

   a. Upstream Flow
   b. Visible films, sheens or coatings
   c. Floating or suspended matter
   d. Bottom deposits
   e. Odor
   f. Aquatic life
   g. Discoloration
   h. Fungi, slimes, or objectionable growths

   Notes on receiving water conditions shall be summarized in the monthly monitoring report.

IX. OTHER MONITORING REQUIREMENTS

A. Storm Water Monitoring (General)

Storm water monitoring shall be conducted as described in the General Industrial Storm Water Permit No. CAS000001.

B. Pond Monitoring (PND-001 and PND-002)

The retention pond and recycle pond at the facility shall be inspected on a regular basis to check for failure and/or leakage. The following shall constitute the monitoring program for the retention pond and recycle pond. The results shall be submitted with the monthly monitoring report.

Table E-7. Retention Pond and Recycle Pond Monitoring Requirements.

Constituent	Units	Type of Sample	Sampling Frequency
Freeboard Depth	Feet, inches	Visual	Weekly

In conducting pond monitoring, a log shall be kept of the pond conditions. Attention shall be given to the presence or absence of:

a. Visible films, sheens or coatings
b. Floating or suspended matter
c. Odor
d. Discoloration
e. Fungi, slimes, or objectionable growths

C. Precipitation Monitoring

The daily precipitation at the Sierra Pacific Industries, Inc., Shasta Lake Division shall be recorded on weekdays and weekends. The reading shall be taken at the same time each day and submitted as follows:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Precipitation	Inches (+/- 0.1)	Visual	Daily	Monthly

D. Aboveground Petroleum Storage Monitoring

The Discharger shall visually inspect the aboveground petroleum storage tanks at the facility, as required by the facility's Spill Prevention Control and Countermeasures Plan. A report of the inspection shall be submitted. In the event of a petroleum release, a report shall be submitted describing the corrective action that was taken to remediate and dispose of the contaminated soil. The results shall be submitted with the monthly monitoring report.

E. Ash Monitoring

The Discharger shall keep a log describing the quantities of fly ash and bottom ash generated, stored, and removed from the facility. The log shall identify the disposal location or soil amendment application area. For soil amendment areas, the volume of ash applied and acreage shall be included. The frequency of log entries is

discretionary; however, the log should be complete enough to serve as a basis for an annual report. A representative composite sample of the fly ash shall be tested annually for total and dissolved constituents. Dissolved constituents shall be obtained using the Waste Extraction Test (WET) described in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, with deionized water for the extraction solvent. The extract shall be analyzed for the following. By **1 February** of each year, the analytical results and the above information shall be summarized and submitted in a report.

Table E-8. Ash Monitoring Requirements

Parameter	Units	Sample TYPE	Minimum Sampling Frequency
Total Organic Carbon	mg/kg	Composite	Quarterly[4]
Total Dissolved Solids	mg/L	Composite	Quarterly[4]
Electrical Conductivity at 25C	umhos/cm	Composite	Quarterly
Moisture Content	% Solids	Composite	Quarterly[4]
pH	units	Composite	Quarterly[4]
Aluminum	mg/kg; µg/L	Composite	Annually
Barium	mg/kg; µg/L	Composite	Annually
Boron	mg/kg; µg/L	Composite	Annually
Cobalt	mg/kg; µg/L	Composite	Annually
Iron	mg/kg; µg/L	Composite	Annually
Manganese	mg/kg; µg/L	Composite	Annually
Molybdenum	mg/kg; µg/L	Composite	Annually
Vanadium	mg/kg; µg/L	Composite	Annually
General Minerals[1]	mg/kg; mg/L	Composite	Annually
Priority Pollutant Metals[2]	mg/kg; µg/L	Composite	Annually
2,3,7,8-TCDD and congeners[3]	pg/g; pg/L	Composite	Once during the life of the permit

(1) General minerals include: bicarbonate, carbonate, calcium, chloride, magnesium, nitrate, potassium, silica, sodium and sulfate.
(2) Antimony, arsenic, beryllium, cadmium, chromium III, chromium VI, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, zinc
(3) EPA Method 1613
(4) When utilized for soil amendment, one analysis per application of 50 tons (Wet Basis). Not more than three analyses in any three-months will be required.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and record keeping.

2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.

4. **Toxic Chemical Release.** The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.

5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not

Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

B. Self Monitoring Reports (SMRs)

1. Self-Monitoring Reports (SMRs) are to be submitted using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Discharger shall submit hard copy SMRs until notification is given that they are no longer required.

2. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	**Permit effective date**	**All**	**Submit with monthly SMR**
Hourly	**Permit effective date**	**Hourly**	**Submit with monthly SMR**
Daily	**Permit effective date**	**(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.**	**Submit with monthly SMR**
Weekly	**Sunday following permit effective date or on permit effective date if on a Sunday**	**Sunday through Saturday**	**Submit with monthly SMR**
Monthly	**First day of calendar month following permit effective date or on permit effective date if that date is first day of the month**	**1st day of calendar month through last day of calendar month**	**First day of the second month following month of sampling**
Quarterly	**Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date**	**January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31**	**May 1 August 1 November 1 February 1**
Semi-annually	**Closest of January 1 or July 1 following (or on) permit effective date**	**January 1 through June 30 July 1 through December 31**	**August 1 February 1**
Annually	**January 1 following (or on) permit effective date**	**January 1 through December 31**	**February 1**
Bi-annually	**January 1 following (or on) permit effective date**	**1st two years of permit, and 2nd two years of permit**	**February 1**

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any

other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

7. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional Water Board and the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

8. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

9. The discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange the data in tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board
Central Valley Region
415 Knollcrest Drive, Suite 100
Redding, CA 96002

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

State Water Resources Control Board Division of Water Quality c/o DMR Processing Center Post Office Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the SIP.

3. **Annual Operations Report**. By **1 July** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

   a. The names and telephone numbers of persons to contact regarding the facility for emergency and routine situations.

   b. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

ATTACHMENT F – FACT SHEET

Table of Contents

ATTACHMENT F – FACT SHEET F-3
I. PERMIT INFORMATION F-3
II. FACILITY DESCRIPTION F-4
A. Description of Wastewater Treatment or Controls F-5
B. Discharge Points and Receiving Waters F-6
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-6
D. Compliance Summary F-6
E. Planned Changes F-7
III. APPLICABLE PLANS, POLICIES, AND REGULATIONS F-7
A. Legal Authority F-7
B. California Environmental Quality Act (CEQA) F-7
C. State and Federal Regulations, Policies, and Plans F-7
D. Impaired Water Bodies on CWA 303(d) List F-9
E. Other Plans, Polices and Regulations F-10
IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS F-11
A. Discharge Prohibitions F-13
B. Technology-Based Effluent Limitations F-14
1. Scope and Authority F-14
2. Applicable Technology-Based Effluent Limitations F-15
C. Water Quality-Based Effluent Limitations (WQBELs) F-15
1. Scope and Authority F-15
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-16
3. Determining the Need for WQBELs F-25
4. WQBEL Calculations F-33
5. Whole Effluent Toxicity (WET) F-37
D. Final Effluent Limitations F-39
1. Mass-based Effluent Limitations. F-39
2. Averaging Periods for Effluent Limitations. F-39
3. Satisfaction of Anti-Backsliding Requirements. F-39
4. Satisfaction of Antidegradation Policy F-40
E. Interim Effluent Limitations. Not Applicable F-40
F. Land Discharge Specifications. Not Applicable F-40
G. Reclamation Specifications. F-40
H. Best Management Practices. See Fact Sheet, Section VII.B.3 ..... F-41
V. RATIONALE FOR RECEIVING WATER LIMITATIONS F-41
A. Surface Water F-41
B. Groundwater. F-44
VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS F-45
A. Influent Monitoring. Not Applicable F-45
B. Effluent Monitoring F-45
C. Whole Effluent Toxicity Testing Requirements F-45
D. Receiving Water Monitoring F-46

1. Surface Water F-46
2. Groundwater. Not Applicable F-46
E. Other Monitoring Requirements F-46
1. Storm Water monitoring F-46
2. Priority Pollutants F-46
VII. RATIONALE FOR PROVISIONS F-46
A. Standard Provisions F-46
B. Special Provisions F-47
1. Reopener Provisions F-47
2. Special Studies, Technical Reports, and Additional Monitoring Requirements F-48
3. Best Management Practices and Pollution Prevention F-52
4. Construction, Operation, and Maintenance Specifications F-53
5. Special Provisions for Municipal Facilities (POTWs Only). - Not Applicable F-53
6. Other Special Provisions F-53
VIII. PUBLIC PARTICIPATION F-54
A. Notification of Interested Parties F-54
B. Written Comments F-55
C. Public Hearing F-55
D. Waste Discharge Requirements Petitions F-55
E. Information and Copying F-56
F. Register of Interested Persons F-56
G. Additional Information F-56

List of Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data (D-002). F-6
Table F-3. Summary of Technology-based Effluent Limitations – D-002. ..... F-15
Table F-4. Copper ECA Evaluation F-21
Table F-5. Zinc ECA Evaluation F-21
Table F-6. Lead ECA Evaluation F-23
Table F-7. Lead ECA Evaluation F-24
Table F-8. Translators at 34 mg/L hardness as $CaCO_3$. F-24
Table F-9. Salinity Water Quality Criteria/Objectives F-28
Table F-10. WQBEL Calculations for Copper at Discharge Point Nos. D-001 and D-002 ..... F-35
Table F-11. WQBEL Calculations for Lead at Discharge Point Nos. D-001 and D-002 ..... F-35
Table F-12. WQBEL Calculations for Zinc at Discharge Point Nos. D-001 and D-002 ..... F-36
Table F-13. Summary of Water Quality-based Effluent Limitations – D-001 and D-002 ..... F-36
Table F-14. Salinity Evaluation and Minimization Plan F-48

ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	5A452015002
Discharger	Sierra Pacific Industries, Inc.
Name of Facility	Shasta Lake Division
Facility Address	3735 El Cajon Ave. Redding, CA 96019 Shasta County
Facility Contact, Title and Phone	John Phillips, Division Manager (530) 275-8851 Mary Bennett (530) 275-8851
Authorized Person to Sign and Submit Reports	John Phillips, Division Manager (530) 275-8851
Mailing Address	3735 El Cajon Ave., Shasta Lake, CA 96019
Billing Address	3735 El Cajon Ave., Shasta Lake, CA 96019
Type of Facility	SIC Code 2421 – Sawmills & Planing Mills
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	Not Applicable
Facility Design Flow	Not Applicable
Watershed	Redding Hydrologic Unit (508.00), Enterprise Flat Hydrologic Area (508.10)
Receiving Water	Unnamed intermittent tributary of Churn Creek
Receiving Water Type	Inland Surface Water

A. Sierra Pacific Industries, Inc., Shasta Lake Division, (hereinafter Discharger) is the owner and operator of 100 million board foot sawmill complex in conjunction with a wood burning boiler for generation of steam for kiln heating (hereinafter Facility), in the City of Shasta Lake, Shasta County, in Section 36, T33N, R5W, MDB&M, as shown on Attachment B.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges commingled process water and storm water to an unnamed tributary of Churn Creek, a water of the United States, and is currently regulated by Order No. R5-2003-0154 and National Pollutant Discharge Elimination System (NPDES) permit No. CA0081400, which was adopted on 17 October 2003. The terms and conditions of the current NPDES permit have been automatically continued and remain in effect until new Waste Discharge Requirements and NPDES permit are adopted.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and NPDES permit on 9 April 2008. A site visit was conducted on 15 September 2008, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The facility consists of a paved log yard, sawmill, sorter/stacker, planer, various storage sheds, drying kilns, boiler, bone yard, maintenance shop, and an office. The facility produces approximately 100 million board feet of lumber per year.

During the summer months, the Discharger utilizes an average of 0.17 million gallons per day (mgd) of reclaimed treated domestic wastewater from the City of Shasta Lake Wastewater Treatment Facility for log sprinkling. The excess log yard runoff enters return ditches and a recycle pond. While sprinkling, the log yard is operated as a closed loop system. The Discharger has completed paving of 100% of the log yard. During precipitation periods, the log sprinkling is stopped and log yard runoff is directed into a retention pond. When the retention pond reaches maximum storage capacity, discharge point D-002, located at the northwestern end of the retention pond, is opened and discharges retention pond water into the unnamed tributary of Churn Creek. Discharge from the retention pond does not occur in some years, depending on the annual rainfall amount and pattern. A previous discharge location (D-001) has been sealed. Discharge from D-001 is not currently permitted.

Domestic sewage, discharge from an oil/water separator in the covered maintenance shop, and approximately 5,000 gallons per day of boiler blowdown are discharged via sewer to the City of Shasta Lake Wastewater Treatment Facility.

Air conditioner cooling water from the sawmill equipment is continuously discharged onto the paved log yard. Cooling water is no longer used within the sawmill building. Surface drainage from areas of the facility other than the log yard (office, sawmill, boiler, kiln, and bone yard) is to a second intermittent unnamed tributary to Churn Creek that generally flows along the easterly side of the facility. To control oil and grease, sawdust, ash, and wood debris in this surface drainage, the Discharger has installed oil/water separators and catchment basins along the main storm water drainages. The maintenance shop has now been covered, and surface runoff from this area now goes to the sanitary sewer. The sludge and liquid removed from the oil/water separator located in the maintenance shop is collected and disposed of by an environmental contractor under proper manifest. The other oil/water separators and catchment basins mainly retain mill solids (sawdust, ash, wood debris, etc.) that are removed, dried, and added to the hog fuel and then burned in the boiler.

Storm water runoff from Sierra Pacific Industries, Inc. closed Class III landfill located west of the sawmill facility enters the western unnamed Churn Creek tributary below the previous discharge point D-001. The landfill is regulated by the Regional Water Board pursuant to Order No. R5-2003-0081.

The Discharger added a spray box and closed loop misting system to apply chemical compounds to control blue stain, mold, and decay on freshly cut Douglas Fir lumber in October 2002. The Discharger has submitted manufacturer's information for the system, and chemicals, including MSDSs.

Wood waste from the sawmill is utilized for boiler fuel in the lumber drying kilns. Wood ash generated by the boiler is temporarily stored onsite prior to disposal for agricultural purposes as a soil amendment. Approximately 36 tons of ash is generated per year. A commercial Fertilizing Materials License has been obtained from the State of California Department of Food and Agriculture. The Discharger has submitted a list of the chemicals currently being utilized in the boiler.

The facility has one 1,000-gallon gasoline convault aboveground storage tank (AST), one 10,000-gallon diesel AST, one 4,000-gallon diesel AST, three 450-gallon hydraulic oil ASTs, and one 1,000-gallon waste oil AST. All ASTs are located within secondary containment. Other oils and chemicals are stored at various facility locations and are protected by cover and secondary containment. A Spill Prevention Control and Countermeasure Plan has been certified by a professional engineer licensed in California. Former gasoline and diesel underground storage tanks have been removed.

A. Description of Wastewater Treatment or Controls

1. The Discharger has constructed a 27 acre-feet retention pond to retain solids carried in storm water runoff from the log deck, as shown in Attachment C. When capacity is reached in the retention pond, a variable quantity of commingled process water and storm water is discharged from the pond to an unnamed intermittent tributary of Churn Creek via discharge point D-002.

B. Discharge Points and Receiving Waters

1. The Facility (Assessor's Parcel Nos. 006-030-34) is located Section 36, T33N, R5W, MDB&M, as shown on Attachment B, a part of this Order.

2. During precipitation periods, log yard process water and storm water is directed to the retention pond. If capacity is reached in the retention pond, settled pond water is discharged at Discharge Point D-002 to an unnamed intermittent tributary of Churn Creek, a water of the United States at a point latitude 40° 40' 30 N and longitude 122° 23' 05" W.

3. Discharge Point D-002 is located within the Enterprise Flat Hydrologic Area (508.10), as depicted on interagency hydrologic map for the Sacramento Hydrologic Basin prepared by the California Department of Water Resources (1986).

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent Limitations and Discharge Specifications contained in the existing Order for discharges from discharge point D-002 (Monitoring Location EFF-002) and representative monitoring data from the term of the previous Order are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data (D-002).

Parameter	Units	Effluent Limitation		Interim Effluent limitations		Monitoring Data (1/2004 – 6/2008)	
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Settleable Solids	mL/L	0.1	0.2			0.10	0.10
Total Suspended Solids	mg/L		100				156
Turbidity	NTU					53	234
Electrical Conductivity @ 25°C	umhos/cm					111	156
Cadmium, total recoverable	ug/L	0.1	0.2	0.23	0.72	0.08	2.0
Copper, total recoverable	ug/L	2.8	5.6	9.1	28.3	3.81	12.0
Lead, total recoverable	ug/L	2.4	7.5	2.4	7.5	2.62	7.0
Zinc, total recoverable	ug/L	7.5	15.6	85	264	20.3	49
Bis-2-Ethylhexylphthalate	ug/L	11.0	34.2	11.0	34.2	<0.9	<3.0
Hardness	mg/L					32	43
pH	pH units	pH shall remain within the range of 6.0 and 9.0 at all times				6.87(1)	7.56(1)

(1) Instantaneous Maximum and Instantaneous Minimum.

D. Compliance Summary

Based on the monitoring data submitted by the Discharger from January 2004 through June 2008, the Discharger appears to have been in compliance with the permit with the exeption of five receiving water turbidity violations, one total suspended solids violation (February 2004), and one total recoverable lead violation (February 2004). The total suspended solids and total recoverable lead effluent violations were defined as serious effluent violations. No other effluent or receiving water violations set by Order No. R5-2003-0154 have been documented since April 2006.

E. Planned Changes

The Discharger currently discharges a combination of process water and storm water from the retention pond during the winter months. It appears that the Discharger will be unable to meet the new final effluent limitations for copper, lead, and zinc contained in this Order without making facility improvements. The Discharger has proposed a combination of reducing the area of the log deck that drains to the retention pond, thereby reducing the volume of process water generated, and also enlarging the retention pond. After the proposed changes are completed, storage capacity in the retention pond may be sufficient to preclude discharge in most years. Additional improvements may be required for the infrequent discharge events to meet effluent limitations. The discharger has not submitted any evidence of infeasibility.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

This Order is issued pursuant to regulations in the Clean Water Act (CWA) and the California Water Code (CWC) as specified in the Finding contained at Section II.C of this Order.

B. California Environmental Quality Act (CEQA)

This Order meets the requirements of CEQA as specified in the Finding contained at section II.E of this Order.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. As explained in Findings, Section II. H, the Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised February 2007), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

   The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." The Basin Plan does not specifically identify beneficial uses for the unnamed tributary or Churn Creek, but does identify present and potential uses for the Sacramento River, to which the unnamed tributary, and Churn Creek, are tributary. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of the unnamed tributary and Churn Creek downstream of the discharge are municipal and domestic

supply, agricultural irrigation, agricultural stock watering, industrial power water supply, water contact recreation including canoeing and rafting, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm spawning habitat, cold spawning habitat, and wildlife habitat.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

2. **Thermal Plan. Not Applicable.**

3. **Bay-Delta Plan. Not Applicable.**

4. **National Toxics Rule (NTR) and California Toxics Rule (CTR).**
   This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.

5. **State Implementation Policy (SIP).**
   This Order implements the SIP as specified in the Finding contained at section II.I of this Order.

6. **Alaska Rule.**
   This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.

7. **Antidegradation Policy.**
   As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

8. **Anti-Backsliding Requirements.**
Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

9. **Emergency Planning and Community Right to Know Act.** Not Applicable. Facility is not a POTW, and does not discharge wastes, other than domestic wastes, into a POTW collection system.

10. **Storm Water Requirements.**
USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from industrial facilities. This site-specific, individual Order implements the requirements of the Industrial Storm Water Program.

The SWRCB adopted Order No. 97-03-DWQ (General Permit No. CAS000001), on 17 April 1997, specifying waste discharge requirements for discharge of storm water associated with industrial activities, excluding construction activities, that requires submittal of a Notice of Intent, preparation of a Storm Water Pollution Prevention Plan site map, and monitoring program by industries to be covered under the permit. The General Permit, Table D, requires timber product facilities to sample for additional constituents. Specifically, the category "General Sawmills and Planing Mills" and "Log Storage and Handling" require chemical oxygen demand (COD), total suspended solids (TSS), and zinc to be monitored. This Order requires the Discharger to maintain coverage under the General Industrial Storm Water Permit No. CAS000001 for discharges related to SW-001 and SW-002.

11. **Endangered Species Act.**
This Order is consistent with the Endangered Species Act as specified in the Findings contained at section II.P of this Order.

D. Impaired Water Bodies on CWA 303(d) List

1. Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also

states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" The 2006 listing for the Sacramento River from Keswick Dam to Cottonwood Creek includes unknown toxicity.

2. **Total Maximum Daily Loads.** The US EPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. The 2006 listing for unknown toxicity has a proposed TMDL completion date of 2019.

   In April 2002, the Regional Board published the *Upper Sacramento River TMDL for Cadmium, Copper, and Zinc* final report. A waste load allocation and/or effluent limitations were not established by the final report, rather, proposed numeric acute and chronic targets for dissolved cadmium, copper, and zinc were issued as part of a TMDL program. Due to the proposed remedial activities scheduled for Iron Mountain Mine and other mine sites during the next five years, Regional Board staff proposed a 5-year TMDL water management strategy that included monitoring by NPDES-permitted dischargers for dissolved cadmium, copper, and zinc, and flow to quantify their dissolved metal loads. Review of ambient metal concentration data collected by staff, other agencies, and dischargers will allow for the determination of whether the upstream remediation efforts enable dissolved metal concentrations in the Sacramento River water to comply with the proposed targets.

   In addition, the May 2004 completion of Slickrock Creek Dam downstream of the Iron Mountain Mine site resulted in a significant decrease of cadmium, copper, and zinc from historic levels within the Sacramento River, downstream of Keswick Dam. For this reason the background receiving water data set for cadmium, copper, zinc, hardness, and pH only include data collected after the May 2004 completion of the Slickrock Creek Dam.

   This Order contains a reopener provision to modify permit requirements, as necessary, to implement any changes to the TMDL.

E. Other Plans, Polices and Regulations

1. The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this Order are consistent with the Policy.

2. **Title 27, California Code of Regulations (CCR), section 20005 *et seq*. (hereafter Title 27)**

   Discharges of wastewater to land, including but not limited to settling ponds, evaporation ponds, and percolation ponds, are exempt from the requirements of Title 27, CCR, based on section 20090 *et seq.* The Facility contains two settling and storage ponds (retention pond, and recycle pond) for which a determination has been made by the Regional Water Board that the Facility meets the exemptions from

Title 27. The Regional Water Board's findings regarding Title 27 exemptions are discussed below.

During dry weather periods, the recycling pond is used to provide water to the log deck sprinklers. Return flows from the log deck flow to the recycle pond in a closed loop. Make-up water is added to the recycle pond. During the wet weather season, storm water runoff from the log deck is directed to the retention pond. First flush storm water off the log deck is considered process wastewater, as it contains elevated concentrations of pollutants. Subsequent storm water runoff is also directed to the retention pond, and it is considered industrial storm water, not process water. Therefore, the retention pond contains comingled log deck process water and log deck storm water.

Both the recycle pond and the retention pond are earth lined. The purpose of the ponds is to provide detention time sufficient to settle out suspended pollutants. As exhibited by the buildup of sludge on the pond bottoms, solids are retained on the pond bottoms. Percolation of pond water is likely retarded by the presence of the sludge layer.

As the water in the storage ponds is primarily rain water, the pollutants of concern derive from the presence of wood waste. Wood wastes from the sawmill facility have historically been disposed in a Class III solid waste landfill located immediately south west of the sawmill facility. The landfill is regulated pursuant to Waste Discharge Requirements Order No. R5-2003-0081. The landfill is now capped and closed, but a groundwater monitoring program continues. The groundwater monitoring program is capable of evaluating the concentrations of wood waste constituents in groundwater. Although the monitoring well network is designed to specifically monitor the landfill, it also includes any influence from the sawmill ponds. Specifically, the hydraulic gradient of the shallow groundwater is south-southwest, which places the ponds up- and cross-gradient from the landfill.

The groundwater monitoring program for the landfill has not indicated any pollutant releases to groundwater or statistically significant increases in the concentration of constituents of concern. Therefore, it is reasonable to conclude that operation of the settling ponds does not have the potential to cause an exceedence of applicable water quality objectives in groundwater. Thus, the discharges to the ponds are in compliance with the applicable water quality control plan. Monitoring of the sludge and liquid contained in the ponds indicates that the waste does not need to be managed as a hazardous waste. Based on these findings the ponds are exempt from the requirements of Title 27 CCR, pursuant to either Title 27 CCR section 20090(a) or section(b).

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the

Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., § 1311(b)(1)(C); 40 CFR, § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR Section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal Regulations, 40 CFR, §122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR §122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) EPA's published water quality criteria, (2) a proposed state criterion (*i.e*., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Regional Water Board's "Policy for Application of Water Quality Objectives")(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and taste and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (Basin Plan at III-8.00.) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents that adversely affect benifecial uses. At minimum, *"…water designated for use as municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)"* in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may

apply limits more stringent than MCLs. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect benefical uses."*

A. Discharge Prohibitions

As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR 122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

1. Discharge of wastewater at a location or in a manner different from that described in the Findings, is prohibited.

2. Discharge except when a minimum 10:1 (receiving water to effluent) flow dilution is achieved between the upstream receiving water (RSW-001) and the effluent is prohibited.

3. The direct discharge of recycled water from log sprinkling, and discharge of recycle pond water, and boiler blowdown water to surface waters or surface water drainage courses is prohibited.

4. The direct discharge of reclaimed water to surface waters or surface water drainage courses is prohibited.

5. Discharge of boiler blowdown and other process water, designated for discharge to the sanitary sewer, to surface water drainage courses is prohibited.

6. The by-pass or overflow of wastewater past its designated treatment or control system, to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

7. The discharge of ash, bark, sawdust, wood, debris, or any other wastes recognized as originating from the facility to surface waters or surface water drainage courses is prohibited.

8. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

9. The discharge of hazardous or toxic substances, including storm water treatment chemicals, grinding aid, solvents or petroleum products (i.e. oil, grease, gasoline, and diesel) to surface waters or groundwater is prohibited.

10. Discharge of wastes classified as “hazardous” as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., or “designated”, as defined in Section 13173 of the California Water Code is prohibited.

B. Technology-Based Effluent Limitations

1. Scope and Authority

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and section 125.3 of the Code of Federal Regulations authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

2. Applicable Technology-Based Effluent Limitations

The Discharger operates a "barking" operation, a "wet deck" log storage operation, and a "sawmills and planning mills" operation. Therefore, effluent limitations established in the Timber Products Processing Point Source Category (40 CFR Part 429) are applicable to the discharge. Specifically, Subpart A (Barking Subcategory), Subpart I (Wet Storage Subcategory), and Subpart K (Sawmills and Planing Mills Subcategory) apply.

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). The following effluent limitations apply to Discharge Point D-002:

- Barking - There shall be no discharge of process wastewater into navigable waters.

- Wet Storage - There shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0 at all times. Where, "debris" means woody material such as bark, twigs, branches, heartwood or sapwood that will not pass through a 2.54 cm (1.0 in) diameter round opening and is present in the discharge from a wet storage facility.

- Sawmills and Planing Mills - There shall be no discharge of process wastewater pollutants into navigable waters.

Table F-3. Summary of Technology-based Effluent Limitations – D-002.

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH units				6.0[1]	9.0[1]

(1) Overflow associated with a 10-year, 24-hour rainfall event is not subject to the pH limitation.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) require that permits include effluent limitations that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedence of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under

CWA section 304(a), supplemented where necessary by other relevant information: (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water.** The beneficial uses of the Sacramento River and its tributaries, including Churn Creek and its tributaries, downstream of the discharge are municipal and domestic supply (MUN); agricultural supply, including stock watering (AGR); industrial service supply (IND); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation, including aesthetic enjoyment; commercial and sport fishing (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm migration of aquatic organisms (MIGR); cold migration of aquatic organisms (MIGR); warm spawning, reproduction, and/or

early development (SPWN); cold spawning, reproduction, and /or early development (SPWN); wildlife habitat (WILD); and navigation (NAV).

b. **Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2], and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. In some cases, the hardness of effluent discharges changes the hardness of the ambient receiving water. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Regional Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10.).

The hardness values must also be protective under all flow conditions (*Id.*, pp. 10-11). As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces criteria that ensure these metals do not cause receiving water toxicity, while avoiding criteria that are unnecessarily stringent.

i. **Reasonable Potential Analysis (RPA).** The SIP in Section 1.3 states, "The RWQCB shall…determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the Maximum Effluent Concentration (MEC) and Maximum Ambient Background Concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

1 The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

2 The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

- For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, the reasonable worst-case downstream hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

- For comparing the Maximum Ambient Background Concentration to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, the reasonable worst-case upstream hardness was used to adjust the criterion. In this evaluation the area outside the influence of the discharge is analyzed. For this situation, the discharge does not impact the upstream hardness. Therefore, the effect of the effluent hardness was not included in this evaluation.

a) **Discharge Point D-002 (unnamed tributary to Churn Creek).** The upstream receiving water hardness in the unnamed tributary to Churn Creek ranged from 34 mg/L to 61 mg/L, based on 6 samples from March 2005 to January 2008. Thus, a minimum upstream receiving water hardness of 34 mg/L (as CaCO3) represents the reasonable worst-case upstream hardness and was used to adjust the criterion when comparing the Maximum Background Ambient Concentration to the criterion for the discharge to the unnamed tributary of Churn Creek at Discharge Point D-002. For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, the reasonable worst-case downstream hardness was used to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

ii. **Effluent Concentration Allowance (ECA) Calculations.** A 2006 Study[1] developed procedures for calculating the effluent concentration allowance (ECA)[2] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness dependent metals. Simply using the lowest recorded upstream receiving water hardness to calculate the ECA may result in over or under protective WQBELs.

1 Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.
2 The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP

The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

$$\text{CTR Criterion} = \text{WER} \times (e^{m[\ln(H)]+b}) \quad \text{(Equation 1)}$$

Where:

H = hardness (as CaCO3)
WER = water-effect ratio
m, b = metal- and criterion-specific constants

In accordance with the CTR, the default value for the WER is 1. A WER study must be conducted to use a value other than 1. The constants "m" and "b" are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The equation for the ECA is defined in Section 1.4, Step 2, of the SIP and is as follows:

$$\text{ECA} = \text{C} \qquad (\text{when } \text{C} \leq \text{B})^{1} \qquad \text{(Equation 2)}$$

Where

C = the priority pollutant criterion/objective, adjusted for hardness (see Equation 1, above)
B = the ambient background concentration

The 2006 Study demonstrated that the relationship between hardness and the calculated criteria is the same for some metals, so the same procedure for calculating the ECA may be used for these metals. The same procedure can be used for chronic cadmium, chromium III, copper, nickel, and zinc. These metals are hereinafter referred to as "Concave Down Metals". "Concave Down" refers to the shape of the curve represented by the relationship between hardness and the CTR criteria in Equation 1. Another similar procedure can be used for determining the ECA for acute cadmium, lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

ECA for Concave Down Metals – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria. Therefore, based on any observed ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient

1 The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e. C < B)

background metals concentrations are at their respective CTR criterion) and the minimum effluent hardness, the ECA calculated using Equation 1 with a hardness equivalent to the minimum effluent hardness is protective under all discharge conditions (i.e., high and low dilution conditions and under all mixtures of effluent and receiving water as the effluent mixes with the receiving water). This is applicable whether the effluent hardness is less than or greater than the ambient background receiving water hardness.

The effluent hardness ranged from 24 mg/L to 43 mg/L (as $CaCO_3$), based on 5 samples from March 2005 to January 2008. The upstream receiving water hardness in the unnamed tributary to Churn Creek varied from 34 mg/L to 61 mg/L (as $CaCO_3$), based on 6 samples from March 2005 to January 2008. Using a hardness of 24 mg/L (as $CaCO_3$) to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in the example using copper for the unnamed tributary to Churn Creek shown in Table F-4, below. This example assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 34 mg/L as $CaCO_3$)

- Upstream receiving water metals concentration always at the CTR criteria (i.e., no assimilative capacity).

As demonstrated in Tables F-4 and F-5, using a hardness of 24 mg/L (as $CaCO_3$) to calculate the ECA for Concave Down Metals ensures the discharge is protective under all discharge and mixing conditions. In these examples, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. An ECA based on the lowest upstream receiving water hardness would also be protective, but would result in less stringent effluent limits. Therefore, in this Order the ECA for all Concave Down Metals has been calculated using Equation 1 with an effluent hardness of 24 mg/L (as $CaCO_3$).

Table F-4. Copper ECA Evaluation

Minimum Observed Effluent Hardness			**24 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**34 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Copper Concentration			**3.7 ug/L [1]**
Copper $ECA_{chronic}$ [2]			**2.8 ug/L**
	Mixed Downstream Ambient Concentration		
Effluent Fraction	**Hardness [3] (mg/L) (as $CaCO_3$)**	**CTR Criteria [4] (ug/L)**	**Copper [5] (ug/L)**
1%	33.9	3.7	3.7
5%	33.5	3.7	3.7
15%	32.5	3.6	3.6
25%	31.5	3.5	3.5
50%	29.0	3.2	3.2
75%	26.5	3.0	3.0
100%	24.0	2.8	2.8

1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of **34 mg/L (as $CaCO_3$)**.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of **24 mg/L (as $CaCO_3$)**.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction.

Table F-5. Zinc ECA Evaluation

Minimum Observed Effluent Hardness			**24 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**34 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Zinc Concentration			**9.4 ug/L [1]**
Zinc $ECA_{basin\ plan}$ [2]			**10.71 ug/L**
	Mixed Downstream Ambient Concentration		
Effluent Fraction	**Hardness [3] (mg/L) (as $CaCO_3$)**	**CTR Criteria [4] (ug/L)**	**Zinc [5] (ug/L)**
1%	33.9	14.26	13.95
5%	33.5	14.12	13.82
15%	32.5	13.77	13.49
25%	31.5	13.42	13.16
50%	29.0	12.53	12.35
75%	26.5	11.63	11.53
100%	24.0	10.41	10.41

1 Maximum assumed upstream receiving water zinc concentration calculated using Equation 1 for chronic criterion at a hardness of **34 mg/L (as $CaCO_3$)**.

2 ECA calculated using Basin Plan objective at a hardness of **24 mg/L (as $CaCO_3$)**.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent zinc concentrations at the applicable effluent fraction.

ECA for Concave Up Metals – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. Therefore, the 2006 Study provides a mathematical approach to calculate the ECA to ensure that any mixture of effluent and receiving water is in compliance with the CTR criteria (see Equation 3, below). The ECA, as calculated using Equation 3, is based on the reasonable worst-case ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), and the minimum observed effluent hardness. The reasonable worst-case ambient background hardness depends on whether the effluent hardness is greater than or less than the upstream receiving water hardness. There are circumstances where the conservative ambient background hardness assumption is to assume that the upstream receiving water is at the highest observed hardness concentration. The conservative upstream receiving water condition as used in the Equation 3 below is defined by the term H_{rw}.

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \qquad \text{(Equation 3)}$$

m, b = criterion specific constants (from CTR)
He = minimum observed effluent hardness
Hrw = minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness ($H_{rw} < H_e$)

-or-

maximum observed upstream receiving water hardness when the minimum effluent hardness is always less than observed upstream receiving water hardness ($H_{rw} > H_e$)[1]

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Tables F-6 and F-7, below. As previously mentioned, the minimum effluent hardness is 24 mg/L (as $CaCO_3$), while the upstream receiving water hardness ranged from 34 mg/L to 61 mg/L (as $CaCO_3$). In this case, the minimum effluent hardness is always less than the observed upstream receiving water hardness.

[1] When the minimum effluent hardness falls within the range of observed receiving water hardness concentrations, Equation 3 is used to calculate two ECAs, one based on the minimum observed upstream receiving water hardness and one based on the maximum observed upstream receiving water hardness. The minimum of the two calculated ECAs represents the ECA that ensures any mixture of effluent and receiving water is in compliance with the CTR criteria.

Therefore, Equation 3 was used to calculate two ECAs, one based on the minimum observed upstream receiving water hardness (i.e., 0.50 µg/L, see Table F-6) and one based on the maximum observed upstream receiving water hardness (i.e., 0.39 µg/L, see Table F-7). Using Equation 3, the lowest ECA results from using the maximum upstream receiving water hardness, the minimum effluent hardness, and assuming no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion). The actual maximum observed upstream receiving water lead concentration was 0.8 ug/L.

Table F-6. Lead ECA Evaluation

Minimum Observed Effluent Hardness			**24 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**34 mg/L (as $CaCO_3$)**
Minimum Assumed Upstream Receiving Water Lead Concentration			**0.8 ug/L [1]**
Lead $ECA_{chronic}$ [2]			**0.50 ug/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness [3] (mg/L) (as $CaCO_3$)	**CTR Criteria [4] (ug/L)**	**Lead [5] (ug/L)**
1%	33.9	0.8	0.8
5%	33.5	0.8	0.8
15%	32.5	0.8	0.8
25%	31.5	0.7	0.7
50%	29.0	0.7	0.7
75%	26.5	0.6	0.6
100%	24.0	0.5	0.5

1 Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of **34 mg/L (as $CaCO_3$)**.

2 ECA calculated using Equation 3 for chronic criteria.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

Table F-7. Lead ECA Evaluation

Minimum Observed Effluent Hardness			**24 mg/L (as $CaCO_3$)**
Maximum Observed Upstream Receiving Water Hardness			**61 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration			**1.7 ug/L [1]**
Lead $ECA_{chronic}$ [2]			**0.39 ug/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness [3] (mg/L) (as $CaCO_3$)	**CTR Criteria [4] (ug/L)**	**Lead [5] (ug/L)**
1%	33.9	1.7	1.7
5%	33.5	1.6	1.6
15%	32.5	1.5	1.5
25%	31.5	1.4	1.4
50%	29.0	1.1	1.0
75%	26.5	0.8	0.7
100%	24.0	0.5	0.4

1 Maximum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of **61 mg/L (as $CaCO_3$)**.

2 ECA calculated using Equation 3 for chronic criteria.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

c. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria. Since the Discharger has not provided translators specific to the receiving water, this Order used CFs from the SIP summarized in Table F-8 below:

Table F-8. Translators at 34 mg/L hardness as $CaCO_3$.

Parameter	Conversion Factor Freshwater Acute Criteria	Conversion Factors Freshwater Chronic Criteria
Arsenic[1]	1.00	1.00
Cadmium	0.989	0.954
Chromium (VI)	0.982	0.862
Copper	0.960	0.960
Lead	0.948	0.948
Thallium		
Zinc	0.978	0.986

(1) Bioaccumulative compound and inappropriate to adjust to percent dissolved.

d. **Assimilative Capacity/Mixing Zone.**
The Churn Creek tributary that receives discharge from the Facility has intermittent flow and is physically constricted. The Basin Plan states that discharge to water bodies with intermittent flow or limited dilution capacity is inappropriate as a permanent disposal method. As a minimum mitigation measure to prevent the Churn Creek tributary from becoming effluent dominated, this Order requires a minimum dilution of 10:1 (upstream receiving water flow:effluent flow) at all times. This dilution requirement is consistent with prior requirements for the Facility, requirements for other regulated facilities in similar situations, and ensures that a minimum level of dilution is achieved at some point downstream from the discharge location. This level of dilution should be easily met because discharge from the Facility generally only occurs during storm events in the wet weather season when upstream flow is at its maximum. This minimum dilution requirement is not a dilution credit. In determining effluent limitations as described below, no credit for dilution of the effluent with the receiving water was considered. This Order requires the Discharger to construct, maintain, and operate such facilities as are necessary to accurately measure the flow of both the effluent discharge and the flow of the receiving water upstream from the discharge.

Based on the available information, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution/assimilative capacity within the receiving water is that the discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

3. Determining the Need for WQBELs

a. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*" Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs. Since effluent from the facility was previously discharged from Discharge Point D-001 or D-002, data from both discharge locations was examined together in conducting the reasonable potential analysis.

b. **Constituents with Limited Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods

[1] See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring. The Discharger collected one sample for aluminum, iron, and manganese in January 2008. Therefore, the data for aluminum, iron, and manganese has been considered as discussed below, but an RP determination was not made due to the limited information.

i. Aluminum.

(a) WQO. USEPA developed National Recommended Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for aluminum. The Recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 ug/L and 750 mg/L, respectively, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The most stringent of these criteria, the chronic criterion of 87 ug/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$) conditions not commonly observed in valley floor waters like the Sacramento River and its tributaries.

The Department of Public Health establishes a secondary Maximum Contaminant Level of 200 ug/L, implemented as an annual average, for protection of human health due to long-term exposure

(b) RPA Results. No data is available for aluminum in either the effluent at discharge point D-001, D-002, or the receiving water. Therefore, this Order requires monitoring sufficient to provide data for a Reasonable Potential Analysis. This permit also contains a re-opener provision for aluminum to establish an effluent limit if appropriate.

ii. Iron.

(a) WQO. USEPA developed National Recommended Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for iron. The Recommended 4-day average (chronic) is1,000 ug/L, for waters with a pH of 6.5 to 9.0. A 1-hour average (acute) criteria for iron is not available. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The most stringent of these criteria, the chronic criterion of 1,000 ug/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$) conditions not commonly observed in valley floor waters like the Sacramento River.

The Department of Public Health establishes a secondary Maximum Contaminant Level of 300 ug/L, implemented as an annual average, for protection of human health due to long-term exposure.

(b) RPA Results. No data is available for iron in either the effluent from discharge point D-001, D-002, or the receiving water. Therefore, this Order requires monitoring sufficient to provide data for a Reasonable Potential Analysis. This permit also contains a re-opener provision for iron to establish an effluent limit if appropriate.

iii. Manganese

(a) WQO. USEPA has not developed National Recommended Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for manganese.

The Department of Public Health establishes a secondary Maximum Contaminant Level of 50 ug/L, implemented as an annual average, for protection of human health due to long-term exposure.

(b) RPA Results. No data is available for iron in either the effluent from discharge point D-001, D-002, or the receiving water. Therefore, this Order requires monitoring sufficient to provide data for a Reasonable Potential Analysis. This permit also contains a re-opener provision for manganese to establish an effluent limit if appropriate.

c. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be re-opened and modified by adding an appropriate effluent limitation.

i. Salinity.

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity, total dissolved solids, sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity, total dissolved solids, sulfate, and chloride.

Table F-9. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[3]	Effluent D-001		Effluent D-002	
			Average	Maximum	Average	Maximum
EC (umhos/cm)	Varies[2]	900, 1600, 2200	**363**	**628**	**115**	**136**
TDS (mg/L)	Varies	500, 1000, 1500	**228**	**287**		
Sulfate (mg/L)	Varies	250, 500, 600	**15**	**16**		
Chloride (mg/L)	Varies	250, 500, 600	**37**	**39**		

[1] Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

[2] The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

[3] The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

(1) Chloride. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

(2) Electrical Conductivity. The secondary MCL for EC is 900 umhos/cm as a recommended level, 1,600 umhos/cm as an upper level, and 2,200 umhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 umhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 umhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(3) Sulfate. The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(4) Total Dissolved Solids. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(b) RPA Results (Salinity).

(1) Chloride. Chloride concentrations in the effluent and receiving water are not available.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports indicates that the discharger has analyzed for EC five times during the past three years. The EC from D-002 effluent ranged from 87 to 136 umhos/cm, with an average of 115 umhos/cm. Electrical Conductivity does not demonstrate reasonable potential.

(3) Sulfate. Sulfate concentrations in the effluent and receiving water are not available.

(4) Total Dissolved Solids. Total Dissolved Solids concentrations in the effluent and receiving water are not available.

(c) WQBELs (Salinity). Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, "*…the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any*

decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects." The State Water Board states in that Order, "*Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta.*" The State Water Board goes on to say, "*Construction and operation of reverse osmosis facilities to treat discharges…prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach*."

The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Regional Water Board meeting, Board Member Dr. Karl Longley recommended that the Regional Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development.*"

WQBELs are not included in this Order for chloride, electrical conductivity, sulfate, and total dissolved solids. Electrical conductivity does <u>not</u> demonstrate reasonable potential. Insufficient information is available to determine reasonable potential for chloride, sulfate, and total dissolved solids. Monitoring for these pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be re-opened and modified by adding an appropriate effluent limitation.

d. **Constituents with Reasonable Potential.** The Regional Water Board finds that the discharge has reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for copper, lead, pH, settleable solids, total suspended solids, and zinc. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.b of this Fact Sheet, the applicable acute (1-hour average) criterion

is 3.65 ug/L and the applicable chronic (4-day average) criterion is 2.76 ug/L, as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for copper was 6 ug/L (as total recoverable) while the maximum observed upstream receiving water concentration was 6 ug/L (as total recoverable) based on 6 samples collected between March 2005 and January 2008. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. This Order contains a final average monthly effluent limitation (AMEL) of 1.82 ug/L and maximum daily effluent limitation (MDEL) of 3.64 ug/L for copper as shown in Table F-10 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

ii. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.b of this Fact Sheet, the applicable acute (1-hour average) criterion is 9.92 ug/L and the applicable chronic (4-day average) criterion is 0.39 ug/L as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for lead was 3.0 ug/L (as total recoverable) based on 6 samples collected between March 2005 and January 2008, while the maximum observed upstream receiving water concentration was 0.8 ug/L (as total recoverable) based on 6 samples collected between March 2005 and January 2008. Therefore, lead in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. This Order contains a final average monthly effluent limitation (AMEL) of 0.32 ug/L and maximum daily effluent limitation (MDEL) of 0.63 ug/L for lead as shown in Table F-11 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

iii. pH.

(a) WQO. The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "…pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses."

(b) RPA Results. The discharge has not exhibited exceedances, however, the discharge of sawmill process water has a reasonable potential to

cause or contribute to an excursion above or below the Basin Plan's numeric objectives for pH.

(c) WQBELs. Effluent limitations for pH of 6.0 as an instantaneous minimum and 9.0, except for discharges associated with a 10-year 24-hour rainfall event or greater) as an instantaneous maximum are included in this Order to implement the technology-based effluent limitations explained in section IV.B.2 of this Order. These same limits along with the receiving water limits of 6.5 to 8.5 pH, ensure protection of the Basin Plan's pH objective.

iv. Settleable Solids

(a) WQO. For inland surface waters, the Basin Plan states that "[w]*ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.*"

(b) RPA Results. The discharge of sawmill process water has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable material.

(c) WQBELs. This Order contains average monthly (0.1 mL/L) and maximum daily (0.2 mL/L) effluent limitations for settleable solids to ensure that the treatment works operate in accordance with design capabilities. These limits are consistent with the limits in the previous Order.

v. Total Suspended Solids.

(a) WQO. For inland surface waters, the Basin Plan states that *"[w}aters shall not contain suspended materials in concentrations that causes nuisance or adversely affects beneficial uses."*

(b) RPA Results. The discharge of sawmill process water has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for suspended materials.

(c) WQBELs. This Order contains a maximum daily effluent limitation for total suspended solids of 100 mg/L. The total suspended solids limit in this permit is based on benchmark values established by the USEPA and is comparable with the suspended solids limits for similar facilities, and is consistent with limits in the previous Order.

vi. Toxicity. See section IV.C.5 of the Fact Sheet regarding whole effluent toxicity.

vii. Zinc.

(a) WQO. The Basin Plan contains a numeric objective for zinc, expressed as an instantaneous maximum for the protection of aquatic life. The CTR includes hardness dependent criteria (acute and chronic) for the protection of freshwater aquatic life. Using the default conversion factors and

reasonable worst-case measured hardness, as described in section IV.C.2.b of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 35.76 ug/L and the applicable CTR chronic (4-day average) criterion is 35.76 ug/L, as total recoverable. The Basin Plan instantaneous max is 10.71 ug/L, as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for zinc was 29.6 ug/L, based on 6 samples collected between March 2005 and January 2008, while the maximum observed upstream receiving water concentration was 9.4 ug/L based on 6 samples collected between March 2005 and January 2008. Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective, and the CTR chronic criterion for the protection of freshwater aquatic life.

(c) WQBELs. This Order contains a final average monthly effluent limitation (AMEL) of 5.33 ug/L and maximum daily effluent limitation (MDEL) of 10.69 ug/L for zinc as shown in Table F-12 of this Fact Sheet, based on the Basin Plan acute objective and the CTR chronic criterion for the protection of freshwater aquatic life.

4. WQBEL Calculations

a. This Order includes WQBELs for copper, lead, and zinc that were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating WQBELs based on the different criteria/objectives.

b. Effluent Limitation Calculations. In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$ECA_{acute} = CMC$ $\qquad$ $ECA_{chronic} = CCC$

For the human health, agriculture, or other long-term criterion/objective, a dilution credit can be applied. The ECA is calculated as follows:

$ECA_{HH} = HH + D(HH - B)$

where:

ECA_{acute} = effluent concentration allowance for acute (1-hour average) toxicity criterion

$ECA_{chronic}$ = effluent concentration allowance for chronic (4-day average) toxicity criterion

ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (1-hour average)

CCC = criteria continuous concentration (4-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where: *multAMEL* = statistical multiplier converting minimum LTA to AMEL
multMDEL = statistical multiplier converting minimum LTA to MDEL
MA = statistical multiplier converting acute ECA to LTA_{acute}
MC = statistical multiplier converting chronic ECA to $LTA_{chronic}$

WQBELs were calculated for copper, lead, and zinc as follows in Tables F-10 through F-12, below.

Table F-10. WQBEL Calculations for Copper at Discharge Point Nos. D-001 and D-002

	Acute	Chronic
Criteria, total recoverable (ug/L) (1)	3.65	2.76
Dilution Credit	No Dilution	No Dilution
ECA, total recoverable (2)	3.65	2.76
ECA Milutiplier	0.321	0.527
LTA	1.17	1.45
AMEL Multiplier (95th%) (4)(5)	1.55	(7)
AMEL (ug/L)	1.82	(7)
MDEL Multiplier (99th%) (6)	3.11	(7)
MDEL (ug/L)	3.64	(7)

1 CTR aquatic life criteria, based on a hardness of 24 mg/L as CaCO3. The criteria are based on application of default metals translator.
2 ECA calculated per section 1.4.B, Step 2 of SIP.
3 Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
4 Assumes sampling frequency n<=4.
5 The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
6 The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
7 Limitations based on acute LTA (Acute LTA < Chronic LTA).

Table F-11. WQBEL Calculations for Lead at Discharge Point Nos. D-001 and D-002

	Acute	Chronic
Criteria, total recoverable (ug/L) (1)	9.92	0.39
Dilution Credit	No Dilution	No Dilution
ECA, total recoverable (2)	9.92	0.39
ECA Milutiplier	0.321	0.527
LTA	3.183	0.20
AMEL Multiplier (95th%) (4)(5)	(7)	1.55
AMEL (ug/L)	(7)	0.32
MDEL Multiplier (99th%) (6)	(7)	3.11
MDEL (ug/L)	(7)	0.63

1 CTR aquatic life criteria, based on maximum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of **61 mg/L (as $CaCO_3$)**. The criteria are based on application of default metals translators.
2 ECA calculated per section 1.4.B, Step 2 of SIP.
3 Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
4 Assumes sampling frequency n<=4.
5 The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
6 The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
7 Limitations based on chronic LTA (Acute LTA > Chronic LTA).

Table F-12. WQBEL Calculations for Zinc at Discharge Point Nos. D-001 and D-002

	Basin Plan Acute	CTR Chronic
Criteria, total recoverable (ug/L) (1)	10.71	35.76
Dilution Credit	No Dilution	No Dilution
ECA, total recoverable (2)	10.71	35.76
ECA Milutiplier	0.321	0.257
LTA	3.44	18.84
AMEL Multiplier (95th%) (4)(5)	1.55	(7)
AMEL (ug/L)	5.33	(7)
MDEL Multiplier (99th%) (6)	3.11	(7)
MDEL (ug/L)	10.69	(7)

1 CTR and Basin Plan aquatic life criteria, based on a hardness of 24 mg/L as CaCO3. The criteria is are based on application of default metals translator.
2 ECA calculated per section 1.4.B, Step 2 of SIP.
3 Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
4 Assumes sampling frequency n<=4.
5 The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
6 The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
7 Limitations based on acute LTA (Acute LTA < Chronic LTA).

Summary of Water Quality-based Effluent Limitations

Table F-13. Summary of Water Quality-based Effluent Limitations – D-001 and D-002

Parameter	Units	Effluent Limitations				
		Average Monthly[2]	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L			100		
Settleable Solids	mL/L	0.1		0.2		
Copper, total recoverable	ug/L	1.82		3.64		
Lead, total recoverable	ug/L	0.32		0.63		
Zinc, total recoverable	ug/L	5.33		10.69		
pH[1]	pH units				6.0	9.0

(1) Except for discharges associated with a 10-year 24-hour rainfall event, or greater.
(2) For calculating Monthly Averages, use Zero for Non-Detects (<0.1).

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity if it is detected.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00. The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."* Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

   Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay ----------	70%
Median for any three or more consecutive bioassays ---------	90%

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00). Based on chronic WET testing performed by the Discharger on 8 December 2005, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

   The monitoring and Reporting Program of this Order requires Bi-annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective and effluent limitation. In addition to WET monitoring, the Special Provision in section VI.C.2.a of this Order requires the Discharger to submit to

the Regional Water Board an initial Investigation TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if a pattern of toxicity is demonstrated.

Numeric chronic WET effluent limitations have not been included in this order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[2] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012*, "In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation, it is the toxicity threshold at which the Discharger is required to

[2] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations.

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water. This Order does not include mass-based limitations due to the criteria for copper, lead, and zinc being expressed in terms of concentration.

2. Averaging Periods for Effluent Limitations.

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. The rationale for using alternative averaging periods for aluminum, iron, manganese, and EC is discussed in section IV.C.3. of this Fact Sheet.

For effluent limitations based on Primary and Secondary MCLs, except nitrate and nitrite, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

An averaging period for compliance with the pH limitation may be used upon approval by the Executive Officer.

3. Satisfaction of Anti-Backsliding Requirements.

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for bis-2-ethylhexylphthalate and cadmium. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations, as discussed below.

Order No. R5-2003-0154 established effluent limitations for bis-2-ethylhexylphthalate. Effluent limitations for bis-2-ethylhexylphthalate were set at 3.6 ug/L for the MDEL and 1.8 ug/L for the AMEL. Detections of bis-2-ethylhexylphthalate may have been due to plastics used for sampling or analytical equipment. The discharger provided analytical results from nine sampling events showing that bis-2-ethylhexylphthalate was below the detection limits and did not demonstrate reasonable potential to exceed water quality objectives/criteria. Therefore, the effluent limitations are not retained in this Order. The monitoring data submitted by the Discharger is considered new information by the Regional Water Board.

Order No. R5-2003-0154 established effluent limitations for cadmium. Effluent limitations for cadmium were set at 0.2 ug/L for the MDEL and 0.1 ug/L for the AMEL. The discharger provided analytical results from six events showing that cadmium was below the detection limits and did not demonstrate reasonable potential to exceed water quality objectives/criteria. Therefore, the effluent limitations are not retained in this Order. The monitoring data submitted by the Discharger is considered new information by the Regional Water Board. This Order requires cadmium to be monitored annually.

40 CFR 122.44(l)(2)(i)(B)(1) allows that a permit may be reissued containing a less stringent effluent limitation for a pollutant, if information is available which was not available at the time of permit issuance and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. Therefore, effluent limitations for bis-2-ethylhexylphthalate, and cadmium are not required in this permit.

4. **Satisfaction of Antidegradation Policy**
This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

E. Interim Effluent Limitations. Not Applicable

F. Land Discharge Specifications. Not Applicable

G. Reclamation Specifications.
Reclaimed water from the City of Shasta Lake WWTP is used in the summer months to offset potable water use for log sprinkling. Discharge Prohibitions are included in this Order at Section III.

H. Best Management Practices. See Fact Sheet, Section VII.B.3

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives and California/National Toxics Rule criteria for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

    a. **Biostimulatory Substances**. The Basin Plan includes a water quality objective that "*[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.

    b. **Chemical Constituents**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.

c. **Color**. The Basin Plan includes a water quality objective that "*[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective.

d. **Dissolved Oxygen.** The receiving water has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the Sacramento River, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order.

e. **Floating Material**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for floating material are included in this Order and are based on the Basin Plan objective.

f. **Oil and Grease**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for oil and grease are included in this Order and are based on the Basin Plan objective.

g. **pH.** The Basin Plan includes water quality objective that *"[T]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses*" This Order includes receiving water limitations for both pH range and pH change.

   The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.

h. **Pesticides.** The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.

i. **Suspended Sediment.** The Basin Plan includes a water quality objective that *"[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses"* Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective.

j. **Settleable Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for settleable material are included in this Order and are based on the Basin Plan objective.

k. **Suspended Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for suspended material are included in this Order and are based on the Basin Plan objective.

l. **Taste and Odors**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective.

m. **Temperature.** The receiving water has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." This Order includes a receiving water limitation based on this objective.

n. **Toxicity**. The Basin Plan includes a water quality objective that *"[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.

o. **Turbidity.** The Basin Plan includes a water quality objective that "*[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

   i. *Where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2.*

   ii. *Where natural turbidity is between 1 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*

   iii. *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*

   iv. *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*

v. *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent*."

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

B. Groundwater.

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 ml. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are not required for the sawmill process water discharge regulated by this Order. The discharge as permited herein is consistant with the provisions of Resolution No. 68-16. In addition, the unlined basins are used to settle out sediments which are retained by the soil and do not pass to groundwater.

4. Groundwater monitoring is conducted at the closed landfill located immediately adjacent to the retention pond. If any information becomes available indicating adverse groundwater impacts from the pond operation, a groundwater investigation may be required.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility.

A. Influent Monitoring. Not Applicable

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream.

2. Effluents monitoring frequencies and sample types for pH, settleable solids, turbidity, total suspended solids, hardness, copper, lead, zinc, acute and chronic toxicity have been retained from Order No. R5-2003-0154 to determine compliance with effluent limitations for these parameters.

3. Effluent monitoring frequencies and sample types for chemical oxygen demand, electrical conductivity, hardness, oil and grease, and tannin and lignins have been retained from the previous Order. While none of the above constituents demonstrates reasonable potential, all are present and have the potential to adversely affect water quality. This Order requires monitoring sufficient to provide data for future reasonable potential analyses.

C. Whole Effluent Toxicity Testing Requirements

The Basin Plan states that "[a]*ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances*." The Basin Plan requires that "[a]*s a minimum, compliance with this objective…shall be evaluated with a 96-hour bioassay*." This Order requires both acute and chronic toxicity monitoring to evaluate compliance with this water quality objective.

The receiving surface water for the Facility is a tributary of the Sacramento River, an inland surface water providing freshwater aquatic habitat. Beneficial uses of the Sacramento River include cold freshwater habitat (COLD); cold spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). Given that the receiving stream has beneficial uses of cold freshwater habitat, cold migration of aquatic

organisms, and cold spawning, reproduction, and/or early development, it is appropriate to use a cold/warm-water species such as *Oncorhychus mykiss* (rainbow trout) for aquatic toxicity bioassays.

USEPA has approved test methods for of *Pimephales promelas*, *Selenastrum capricornutum*, and *Ceriodaphnia dubia* for assessing chronic toxicity in freshwater organisms.

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Bi-annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

2. Groundwater. Not Applicable

E. Other Monitoring Requirements

1. Storm Water monitoring

Federal Regulations for storm water discharges were promulgated by USEPA on 16 November 1990 (40 CFR Parts 122,123, and 124). The regulations require specific categories of facilities, which discharge storm water associated with industrial activity (storm water), to obtain NPDES permits and to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate industrial storm water pollution. This Order requires the Discharger to maintain coverage under the general industrial storm water permit (CAS000001) for discharge points SW-001 and SW-002.

2. Priority Pollutants

The Discharger shall conduct monitoring as specified in Attachment E of this Order to determine if the discharge from D-002 contains priority pollutants identified in the California Toxics Rule and National Toxics Rule.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must

comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including:

   i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

   ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Constituent Study**. The Discharger has not analyzed for aluminum, iron, manganese, sulfate, and chloride in the effluent or receiving water. Therefore, reasonable potential cannot be determined. This Order requires the Discharger to conduct monitoring for these constituents as outlined in the Monitoring and Reporting Program (Attachment E). If the Regional Water Board determines that implementation of effluent limitations is appropriate and necessary, this Order may be reopened.

d. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to

total recoverable when developing effluent limitations for cooper, lead, and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE), if effluent toxicity is detected. This Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

2. Special Studies, Technical Reports, and Additional Monitoring Requirements

a. **Log Yard Flushing Study.** The Discharger shall develop a plan for conducting a Log yard Flushing study, to be approved by the Regional Water Board. The Plan shall be submitted to the Regional Water Board prior to the 2010/2011 wet season. The intent of the study is to establish the relationship between the volume of flush or amount of rainfall, and the concentrations of pollutants (e.g., tannins & lignins, EC, COD, and turbidity). Results of the study must be submitted to the Regional Water Board prior to the 2011/2012 wet season.

b. **Salinity Evaluation and Minimization Plan**. The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the Facility. The plan shall be completed and submitted to the Regional Water Board within **1 year of the effective date of this Order** for the approval by the Executive Officer.

Table F-14. Salinity Evaluation and Minimization Plan

Task	Compliance Date
1 - Submit Work plan and Time Schedule	Within 6 months of the effective date of the Order
2 - Begin Study	Within 3 months of Regional Water Board approval of Work plan and Time Schedule
3 - Complete Study	As established by Task 1
4 - Submit Summary Report	60 days following completion of Task 3 (no greater than 2 years after the effective date of this Order)

c. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) The previous permit required the Discharger to conduct chronic toxicity testing once during the life of the permit. However, due to the operation of the facility and the 25-acre retention pond the Discharger was unable to collect samples for chronic toxicity. In January 2008, the Discharger simulated a discharge from D-002 and collected

samples for chronic toxicity. Analytical results did not meet the test acceptability criteria for *Ceriodaphnia dubia* (survival and reproduction test), *Pimephales promelas* (larval survival and growth test), and *Selenastrum capricornutum* (growth test). However, the Discharger was not required to conduct accelerated monitoring, because no discharge has occurred since April 2006.

This provision requires the Discharger to develop a Toxicity Reduction Evaluation (TRE) Work Plan in accordance with EPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity has been demonstrated.

i. **Numeric Monitoring Trigger.** A numeric toxicity monitoring trigger of **1 TUc** (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

ii. **Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

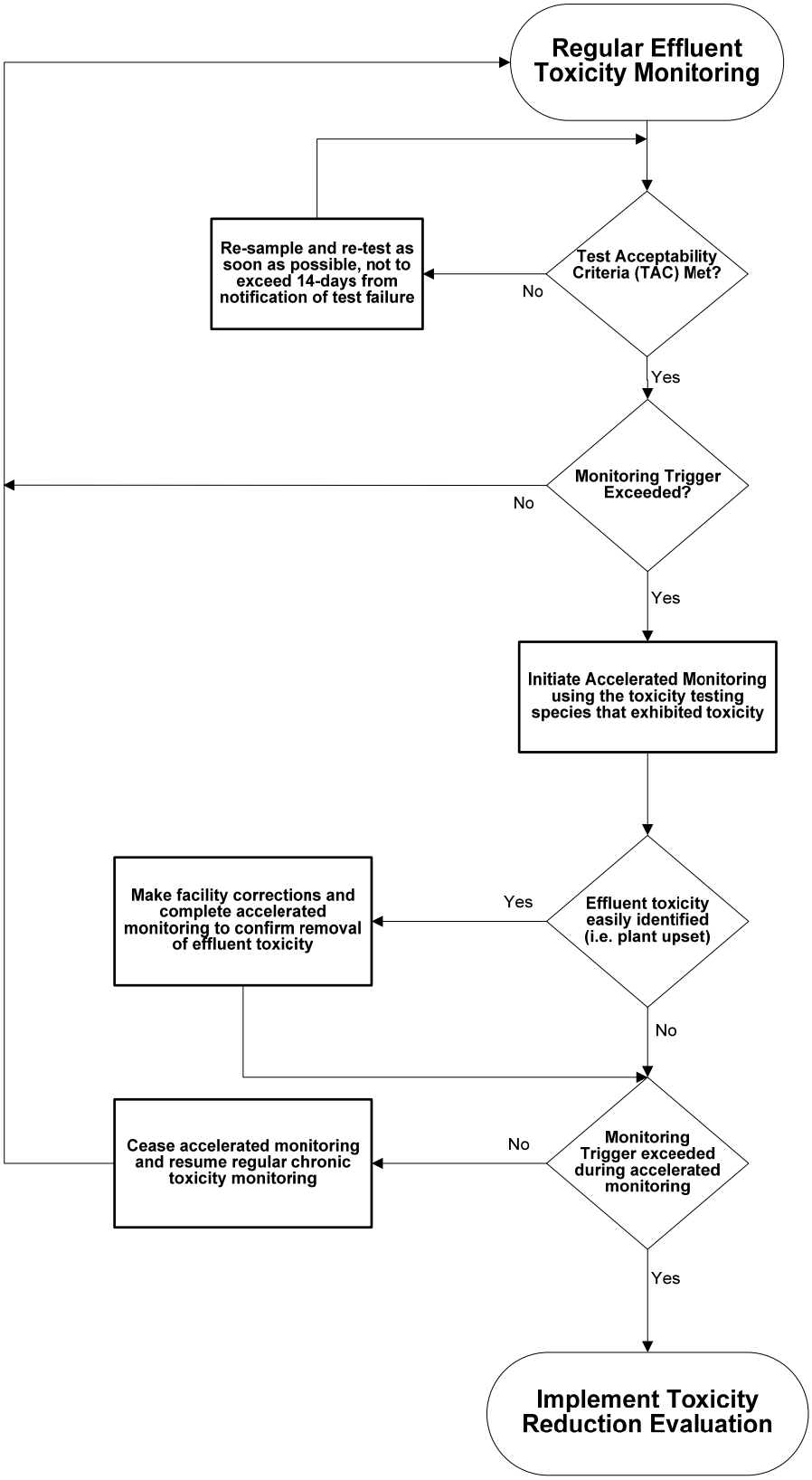
The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

iii. **TRE** Guidance**.** The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants,* (EPA/833B-99/002), August 1999.
- Generalized Methodology for Conducting Industrial TREs*, (EPA/600/2-88/070), April 1989.*
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity,* Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991*

Figure F-1
WET Accelerated Monitoring Flow Chart



d. **Storm Water Pollution Controls.**
Covered under the general industrial storm water permit.

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Plan.** The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: 1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or 2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the MRP.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Regional Water Board including:
(1) All PMP monitoring results for the previous year;
(2) A list of potential sources of the reportable priority pollutant(s);
(3) A summary of all actions undertaken pursuant to the control strategy; and
(4) A description of actions to be taken in the following year.

4. Construction, Operation, and Maintenance Specifications

a. **Pond Operating Requirements.**

i. The treatment facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

d) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
e) Weeds shall be minimized, and
f) Vegetation, debris, and dead algae shall not accumulate on the water surface.

iv. Freeboard in the retention pond shall not be less than 2 feet (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the retention pond, no overflow of the retention pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event.

5. Special Provisions for Municipal Facilities (POTWs Only). - Not Applicable

6. Other Special Provisions

a. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition or limitation contained in this Order, this Order requires the Discharger to notify the Regional Water Board by telephone (530) 224-4845 (or to the Regional Water Board staff assigned to the facility) within 24 hours of having knowledge of such noncompliance, and shall confirm

this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Federal Standard Provision [*40 CFR §122.41(l)(6)(i)*].

c. Prior to making any change in the discharge point, place of use, or purpose of use of the storm water, the Discharger must obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).

d. **Ownership Change.** To maintain accountability of the operation of the Facility, the discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

   To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory paragraph of Federal Standard Provision V.B.5 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through physical posting, mailing, and internet posting.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by **5 p.m.** on **DD MMM YYYY**

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **DD/DD MMM YYYY**
Time: 8:30 am
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/centralvalley/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (530) 224-4845.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Daniel Warner at (530) 224-4848.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS.

DETECTED DATA ONLY

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Antimony	ug/L	0.2	N/A	6.00	N/A	N/A	14	4,300	N/A	6.00	No
Arsenic	ug/L	1.1	N/A	10.00	340	150	N/A	N/A	N/A	10.00	No
Beryllium	ug/L	0.1	N/A	4.00	N/A	N/A	N/A	Narrative	N/A	4.00	No
Cadmium	ug/L	0.1	1.00	0.123	0.90	0.803	N/A	Narrative	0.123	5.0	No
Chromium (III)	ug/L	2.7	N/A	64.3	539.6	64.3	N/A	Narrative	N/A	N/A	No
Chromium (VI)	ug/L	20	N/A	11	16	11	N/A	Narrative	N/A	50.0	No
Copper	ug/L	6.0	3.5	2.76	3.65	2.76	1,300	N/A	3.69	N/A	Yes
Lead	ug/L	3.0	0.8	0.39	9.92	0.386	N/A	Narrative	15.0	15.0	Yes
Mercury	ug/L	0.0147	N/A	0.050	N/A	N/A	0.050	0.051	N/A	2.0	No
Nickel	ug/L	3.6	N/A	15.60	140.3	15.6	610	4,600	N/A	100.0	No
Selenium	ug/L	0.5	N/A	5.00	20	5	N/A	Narrative	N/A	50.00	No
Silver	ug/L	0.12	N/A	0.35	0.349	N/A	N/A	N/A	N/A	N/A	No
Thallium	ug/L	0.2	N/A	1.70	N/A	N/A	1.7	6.3	N/A	2.00	No
Zinc	ug/L	29.6	9.4	10.71	35.76	35.76	N/A	N/A	10.71	N/A	Yes
Cyanide	ug/L	2.0	N/A	5.2	22	5.2	700	220,000	N/A	200	No
Bis-2-ethylhexylphthalate	ug/L	3.0	0.9	1.80	N/A	N/A	1.8	5.9	N/A	N/A	No

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) Hardness = 24 mg/L as $CaCO_3$

ATTACHMENT H – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

I. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Regional Water Board is requiring the following monitoring:

A. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. Effluent and receiving water temperature. This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

C. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness and pH dependent.

D. Dioxin and furan sampling. Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners.

II. Monitoring Requirements.

A. Bi-annual priority pollutant samples shall be collected from the effluent and upstream receiving water (EFF-002 and RSW-001) and analyzed for the constituents listed in Table I-1. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

B. Concurrent Sampling. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

C. Sample type. All effluent samples shall be taken as 24-hour flow proportioned composite samples. All receiving water samples shall be taken as grab samples.

D. Modifications. Check with your Regional Water Board staff contact prior to sampling. Modifications to this study may be made.

Table I-1. Priority Pollutants

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	0.5	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	2	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	0.5	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	1	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	0.5	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	0.5	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	0.5	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	0.5	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	0.01	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	0.5	EPA 7199/1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	Fluoride	7782414	Public Health Goal	1000	0.1	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0002 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.002	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	1	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/GCMS
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Flow			1 CFS		
	Hardness (as $CaCO_3$)			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	^oF		
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers

(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22°C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:

Method 1669: Sampling Ambient Water for Trace Metals at USEPA Water Quality Criteria Levels, USEPA; and

Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, USEPA

III. Additional Study Requirements

A. Laboratory Requirements. The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code 13176 and must include quality assurance/quality control data with their reports (ELAP certified).

B. Criterion Quantitation Limit (CQL). The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the SIP or the detection limits for purposes of reporting (DLRs) below the controlling water quality criterion concentrations summarized in Table I-1 of this Order. In cases where the controlling water quality criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Table I-1 contains suggested analytical procedures. The Discharger is not required to

use these specific procedures as long as the procedure selected achieves the desired minimum detection level.

C. Method Detection Limit (MDL). The method detection limit for the laboratory shall be determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

D. Reporting Limit (RL). The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

E. Reporting Protocols. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

1. Sample results greater than or equal to the reported RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the reported RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

3. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may shortened to "Est. Conc.). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (+ or – a percentage of the reported value), numerical ranges (low and high), or any other means considered appropriate by the laboratory.

4. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

F. Data Format. The monitoring report shall contain the following information for each pollutant:

1. The name of the constituent.
2. Sampling location.
3. The date the sample was collected.
4. The time the sample was collected.
5. The date the sample was analyzed. For organic analyses, the extraction data will also be indicated to assure that hold times are not exceeded for prepared samples.
6. The analytical method utilized.
7. The measured or estimated concentration.
8. The required Criterion Quantitation Limit (CQL).
9. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).
10. The laboratory's lowest reporting limit (RL).
11. Any additional comments.