

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0154

NPDES NO. CA 0081400

WASTE DISCHARGE REQUIREMENTS
FOR
SIERRA PACIFIC INDUSTRIES
SHASTA LAKE DIVISION
SHASTA COUNTY

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

1. Sierra Pacific Industries, Shasta Lake Division, (hereafter Discharger) submitted a Report of Waste Discharge, received 27 September 2001, and applied to renew their permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from their sawmill facility. The Discharger is currently regulated under Waste Discharge Requirements Order No. 97-047 (NPDES No. CA0081400), adopted by the Regional Board on 28 March 1997.
2. Sierra Pacific Industries operates a sawmill facility in the City of Shasta Lake in Section 36, T33N, R5W, MDB&M as shown on Attachment A, which is incorporated herein and made part of this Order by reference.
3. Operation of the facility includes the storage of saw logs, wood fuel, and petroleum products. Wastes generated include, boiler blowdown, ash, wood waste, log yard recycle water, and storm water runoff. The sawmill produces approximately 100 million board feet of lumber per year.
4. The Discharger has completed paving of 100 percent of the log storage area. Air conditioner cooling water from the sawmill is continuously discharged to the paved log yard. During the summer months, the Discharger utilizes an average of 0.17 mgd of reclaimed treated domestic wastewater from the City of Shasta Lake Wastewater Treatment Facility for sprinkling logs. The excess log yard runoff enters return ditches and a recycle pond. While sprinkling, the log yard is operated as a closed system. 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, subsequent storm water runoff from the log yard is screened and discharged to an unnamed intermittent tributary of Churn Creek, a water of the United States and a tributary to the Sacramento River, at the points, latitude 40°40'31" and longitude 122°23'5" (Discharge 001), as shown on

Attachment B, a part of this Order. Due to sufficient storage capacity in the retention pond, Discharge 001 has generally only been used during winters with heavy rainfall.

5. The Discharger proposes to construct a second discharge point, Discharge 002 as shown on Attachment B. Discharge 002 would be located at the northwestern end of the retention pond and would discharge retention pond water into the unnamed Churn Creek tributary. This modification would allow the Discharger to better control the quality of water discharged.
6. Wood waste from the sawmill is utilized for boiler fuel in the lumber drying kilns. Wood ash generated by the boiler is temporarily stored on-site 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.
7. Domestic sewage, discharge from the mechanics area oil/water separator, and approximately 5,000 gallons per day of boiler blowdown are discharged to the City of Shasta Lake Wastewater Treatment Facility. The Discharger has submitted a list of the chemicals currently being utilized in the boiler.
8. The Discharger has identified potential sources that may be expected to add significant quantities of pollutants to the facility storm water discharges. Containment structures have been constructed around all aboveground petroleum products. The Discharger has installed eight oil/water separators and catch basins along the main storm water drainages. The sludge and liquids removed from the oil/water separators located by the mechanic shops are collected and disposed of by an environmental contractor under proper manifest. The other oil/water separators 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.
9. Past operation of a fungicide dip system resulted in pentachlorophenol (PCP) soil contamination exceeding the Department of Health Services' Hazardous Waste Total Threshold Limit Concentration. The Discharger asphalt-sealed the PCP area in several layers. Subsequent monitoring of storm water runoff from the area indicated that PCP was not present. The Discharger plans to add 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. The Discharger has submitted manufacturer's information for the system, and chemicals, including MSDSs.
10. 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 contained 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.

11. The facility is in the Enterprise Flat Hydrologic Subarea (No. 508.10), as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in August 1986. The mean annual rainfall in the area is approximately 60 inches, based on information from the U.S. Geological Survey and DWR.
12. The Regional Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the State Water Resources Control Board (SWRCB) and incorporated by reference, such as Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Resolution No. 68-16). These requirements implement the Basin Plan.
13. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality criteria applicable to this discharge. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP), which contains guidance on implementation of the NTR and the CTR.
14. The Basin Plan on page II-2.00 states that: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not identify any beneficial uses specifically for Churn Creek and its tributaries, but the Basin Plan does identify present and potential beneficial uses for the Sacramento River, to which Churn Creek is tributary.

The Basin Plan identifies the following beneficial uses for the Sacramento River: municipal and domestic supply; agricultural supply; industrial service supply; hydropower generation; water contact and noncontact recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; navigation; ground water recharge; and freshwater replenishment. In addition, SWRCB Resolution 88-63 ("Sources of Drinking Water Policy"), incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

Upon review of the flow conditions, habitat values, and beneficial uses of Churn Creek and its tributaries, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Churn Creek and its tributaries as discussed below. The Basin Plan defines beneficial uses 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."

a. *Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply*

The SWRCB has issued water rights to existing water users along Churn Creek and its tributaries and the Sacramento River downstream of the discharge for multiple uses including domestic, agricultural, and industrial service supply. Since Churn Creek and its tributaries are intermittent streams, the creeks likely provide groundwater recharge during periods of low flow. Domestic water supply in the area is generally provided by municipal entities using treated surface water. Although the use of area groundwater as domestic supply is limited, the potential for expanded use exists. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for increased domestic, agricultural, and industrial uses of groundwater and the water in Churn Creek and its tributaries.

The Basin Plan states that "*Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.*" SWRCB Resolution No. 88-63 provides that "*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards...*". The beneficial use of municipal and domestic supply is applicable to Churn Creek and its tributaries and the west fork of Churn Creek and its tributaries based on Resolution 88-63, the Basin Plan tributary rule, and actual uses.

b. *Hydropower Generation, and Navigation*

Although no records of existing hydropower generation and navigation uses were found on Churn Creek and its tributaries, these uses do exist in the Sacramento River to which Churn Creek is tributary. The very nature of these uses depends on the presence of flow from tributary streams and therefore these uses are protected by including them as beneficial uses in streams tributary to the Sacramento River. Furthermore, considering the likely future value of electricity generation, it is not unreasonable to expect that new technologies for small hydropower projects may make hydropower generation uses on Churn Creek or its tributaries desirable.

c. *Water Contact and Noncontact Recreation*

The Regional Board finds that Churn Creek and its tributaries flow through rural and residential areas and that there is ready public access. Contact and noncontact recreational activities exist and are likely to increase as the population in the area grows. Prior to discharge into the Sacramento River, Churn Creek flows through areas of general public access. The Sacramento River also offers recreational opportunities.

d. *Warm and Cold Freshwater Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Wildlife Habitat*

Churn Creek flows to the Sacramento River. Fish species present in Churn Creek and its tributaries are consistent with both cold and warm water fisheries. There is a potential for anadromous fish migration necessitating a cold water designation and cold water salmonid species have been found in Churn Creek and its tributaries. The Basin Plan (Table II-1) designates the Sacramento River from Shasta Dam to Colusa Basin Drain as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Churn Creek and its tributaries. The cold water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. The riparian areas along Churn Creek and its tributaries support wildlife habitat.

e. *Groundwater Recharge, and Freshwater Replenishment*

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Churn Creek and its tributaries are at times dry, it is reasonable to assume that the stream flow is not present at its source, or the water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of municipal and irrigation water supply. When water is present in Churn Creek and its tributaries, there is hydraulic continuity between it and the Sacramento River. During periods of hydraulic continuity, Churn Creek and its tributaries add to the water quantity and may impact the quality of water flowing down stream in the Sacramento River.

The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the presence of contact recreational activities, the beneficial uses of the Sacramento River apply to Churn Creek and its tributaries. The Regional Board also finds that, based on available information, Churn Creek and its tributaries are intermittent streams. The intermittent nature of Churn Creek and its tributaries means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available on a year-round basis. Normally, discharge from the facility occurs only when there is flow in Churn Creek and its tributaries, as most of the discharge volume is due to storm water runoff.

15. The beneficial uses of groundwater are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).
16. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.
17. Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. USEPA adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. The NTR and CTR contain water quality standards applicable to this discharge. The SIP contains guidance on implementation of the NTR and CTR. In addition, the Basin Plan contains narrative and numeric water quality standards consisting of water quality objectives and beneficial uses.

On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis. Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. The Discharger sampled the effluent and receiving water on 2 January 2002 and 14 January 2003, to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticides, metals, asbestos, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners.

The methodology described in Section 1.3 of the SIP was used to evaluate the Discharger's monitoring data. Cadmium, copper, lead, zinc, and bis-2-ethylhexylphthalate were detected in the effluent at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. No credit for dilution of the effluent with the receiving water was considered. Additionally, based on long-term monitoring submitted by the Discharger the discharge also has reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard for settleable solids, suspended solids, pH, and acute toxicity.

The lowest observed, representative hardness measurement of the receiving water is used, when needed, to calculate effluent limits for hardness-dependent metals. On 2 January 2002 and 14 January 2003, upstream receiving water hardness was measured at 38 mg/L and 41 mg/L, respectively. Therefore, 38 mg/L is used as a conservative value for calculations.

Cadmium

The CTR acute aquatic life criterion for cadmium is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for cadmium is 0.21 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 1.15 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. Using the SIP methodology, the long term average (LTA) based on the Basin Plan objective is lowest at 0.07 ug/L (total recoverable). Using the coefficient of variation of 0.6, the maximum daily effluent limit (MDEL) multiplier is 3.11 and the average monthly effluent limit (AMEL) multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for cadmium is 0.22 ug/L (total recoverable) and the AMEL is 0.11 ug/L (total recoverable).

Copper

The CTR acute aquatic life criterion for copper is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for copper is 5.63 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 4.08 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. Using the SIP methodology, the LTA based on the Basin Plan objective is lowest at 1.81 ug/L (total recoverable). Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for copper is 5.63 ug/L (total recoverable) and the AMEL is 2.81 ug/L (total recoverable).

Lead (final limit)

The CTR acute aquatic life criterion for lead is applicable and is 23.8 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 0.93 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. Using the SIP methodology, the LTA based on the CTR chronic criterion is lowest at 0.49 ug/L (total recoverable). Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for lead is 1.52 ug/L (total recoverable) and the AMEL is 0.76 ug/L (total recoverable).

Zinc

The CTR acute aquatic life criterion for zinc is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water

quality objective for zinc is 15.68 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 52.8 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. Using the SIP methodology, the LTA based on the Basin Plan objective is lowest at 5.03 ug/L (total recoverable). Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for zinc is 15.64 ug/L (total recoverable) and the AMEL is 7.80 ug/L (total recoverable).

bis-2-Ethylhexylphthalate (final limit)

The CTR human health criteria for bis-2-ethylhexylphthalate in sources of drinking water is applicable and is 1.8 ug/L. No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the water quality criteria or objective. In this case the ECA is 1.8 ug/L. Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten. For CTR human health criteria, the average monthly effluent limit (AMEL) is equal to the ECA. Therefore, the AMEL for bis-2-ethylhexylphthalate is 1.8 ug/L. For CTR human health criteria, the maximum daily effluent limit (MDEL) is equal to the ECA multiplied by the MDEL/AMEL multiplier. The MDEL/AMEL multiplier is 2.01 with a coefficient of variation of 0.6 and a monthly sampling frequency of 4 times. Therefore, the MDEL for bis-2-ethylhexylphthalate is 3.6 ug/L.

Settleable Solids

The Basin Plan states that waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses. The Order contains monthly average and daily maximum settleable solids limits of 0.1 mL/L and 0.2 mL/L respectively. The settleable solids limits in this permit are based on what can reasonably be achieved in well-designed, constructed and operated settling ponds. These limits are consistent with the previous Order.

Suspended Solids

The Basin Plan states that waters shall not contain suspended material in concentrations that cause nuisance or adversely affects beneficial uses. The Order contains a daily maximum suspended solids limit of 100 mg/L. The 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.

pH Limit

This Order requires the effluent pH to remain between 6.0 and 9.0 units. These limits are consistent with the limits in the previous Order and Timber Products Processing Point Source Category, Wet Storage Subcategory (40 CFR Part 429, Subpart I)

Acute Toxicity Limits

The effluent generally consists of log deck debris, and storm water. This Order contains effluent limits for acute toxicity which are consistent with the previous Order.

18. Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: ... *“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* This Order requires the Discharger to provide this information. The final water quality based effluent limitations for lead and bis-2-ethylhexylphthalate become effective **60 days** after adoption of this Order unless an acceptable compliance schedule justification meeting the requirements of Section 2.1 of the SIP is completed and submitted by the Discharger. If an acceptable compliance schedule justification is submitted, the interim effluent limits described in this Order for lead and bis-2-ethylhexylphthalate will supercede the final effluent limits until **36 months** after adoption of this Order. At that time the final effluent limits will be fully applicable. As this schedule is greater than one year, the Discharger shall submit semi-annual progress reports on **15 January and 15 July** each year until the Discharger achieves compliance with the final water quality based effluent limitations for lead and bis-2-ethylhexylphthalate.
19. The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim limitations and dates for their achievement in the NPDES permit. The interim limitations must: be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions. The interim limitations in this Order are based on the current treatment plant performance. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001)(TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten

sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim limitation (*TSD, Table 5-2*). The Regional Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final Effluent Limitations, but in compliance with the interim Effluent Limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. For example, USEPA states in the Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for copper, that it will take an unstressed system approximately three years to recover from a pollutant in which exposure to copper exceeds the recommended criterion. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the final Effluent Limitations can be achieved.

Lead was detected in effluent from the Facility at total recoverable concentrations of 2.4 ug/L and 0.7 ug/L. As described above, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for lead is 7.5 ug/L (total recoverable). The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for lead cannot exceed the maximum detected concentration which is 2.4 ug/L (total recoverable).

Bis-2-ethylhexylphthalate was detected in effluent from the Facility at concentrations of 3 ug/L (estimated concentration) and 11 ug/L. As described above, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for bis-2-ethylhexylphthalate is 34.2 ug/L. The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for bis-2-ethylhexylphthalate cannot exceed the maximum detected concentration which is 11.0 ug/L.

20. This Order establishes concentration-based effluent limits. Mass-based effluent limits are also required to be established, however it is not possible to establish the mass-based effluent limits at this time due to lack of effluent flow information. 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. Upon review of sufficient flow information, the Regional Board may reopen this Order and establish mass-based effluent limits and an effluent flow limit.
21. 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.
22. 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 products facilities to sample for additional constituents. Specifically, the categories “General Sawmills and Planing Mills” and “Log Storage and Handling” require chemical oxygen demand (COD), total suspended solids, and zinc to be monitored. This individual permit and the provisions and monitoring it contains concerning storm water relieve the Discharger from seeking coverage under the General Permit.
 23. Resolution No. 68-16 requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board’s policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 applies to both surface water and groundwater.
 24. The Regional Board finds that discharge in compliance with the prohibitions, limitations, specifications, and provisions in this Order is consistent with Resolution No. 68-16. The impact on water quality will be insignificant.
 25. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan’s incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses and do not contain waste constituents in concentrations statistically greater than background water quality.

26. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.
27. 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.
28. The Discharger operates a “wet deck” log storage operation and a “sawmills and planing mills” operation, therefore, effluent limitations established in Timber Products Processing Point Source Category (40 CFR Part 429) are applicable to the discharge. Specifically, Subpart I (Wet Storage Subcategory) and Subpart K (Sawmills and Planing Mills Subcategory) apply.
29. The California Department of Health Services has established statewide reclamation criteria in Title 22, California Code of Regulations (CCR), Section 60301, et seq., (hereafter Title 22) for the use of reclaimed water and has developed guidelines for specific uses.
30. The Board consulted with the California Department of Health Services, the County Health Department, and the Mosquito Abatement District and considered their recommendations regarding public health aspects for use of reclaimed water.
31. The Regional Board has considered the information in the attached Information Sheet in developing the findings in this Order. The attached Information Sheet is part of this Order.
32. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
33. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
34. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 10 days from the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 97-047 is rescinded and Sierra Pacific Industries, Shasta Lake Division, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastewater, including storm water, at locations or in a manner different from that described in Finding Nos. 3, 4, 5, and 6 is prohibited.
2. Discharge from 001 or 002 except when a minimum 10:1 (receiving water to effluent) dilution is achieved between the upstream receiving water and the effluent is prohibited.
3. The discharge of recycled water from log sprinkling, 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. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13 (see attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES), March 1991").
6. 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.
7. The discharge of hazardous or toxic substances, including water treatment chemicals, solvents, or petroleum products (including oil, grease, gasoline and diesel) to surface waters or groundwater is prohibited.
8. Discharge of waste classified as "hazardous" as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., (hereafter Chapter 15), or "designated," as defined in Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations (Discharge 001 and Discharge 002)

1. The discharge of wastewater to the Churn Creek tributary in excess of the following is prohibited:

<u>Parameter</u>	<u>Unit</u>	<u>30-DayAverage</u>	<u>Daily Maximum</u>
Cadmium (total recoverable)	ug/L	0.1	0.2
Copper (total recoverable)	ug/L	2.8	5.6
Lead (total recoverable) ¹	ug/L	0.8	1.5
Zinc (total recoverable)	ug/L	7.8	15.6
bis-2-Ethylhexylphthalate ¹	ug/L	1.8	3.6
Suspended Solids	mg/L	--	100
Settleable Solids	mL/L	0.1	0.2

¹ Final effluent limit. Interim effluent limits may supercede as described in this Order.

2. Interim effluent limits have been established for the following constituents. These interim effluent limits may supercede the above final effluent limits as described in this Order. The interim discharge of wastewater to the Churn Creek tributary in excess of the following is prohibited:

<u>Parameter</u>	<u>Unit</u>	<u>30-DayAverage</u>	<u>Daily Maximum</u>
Lead (total recoverable)	ug/L	2.4	7.5
bis-2-Ethylhexylphthalate	ug/L	11.0	34.2

3. The discharge shall not have a pH less than 6.0 or greater than 9.0.
4. Survival of aquatic organisms in 96-hour acute bioassays of undiluted waste shall be no less than:

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

C. Discharge Specifications (Reclaimed Water)

1. Reclaimed water may only be used for sprinkling logs.
2. Reclaimed water shall remain within the designated reclamation area, as defined in Finding No. 4, at all times.
3. The use of reclaimed water shall not result in a nuisance due to odors, unsightliness, or disease vectors.
4. Reclaimed water shall meet the criteria contained in Title 22, Division 4, CCR (Section 60301, et seq.). The Discharger shall post all areas where reclaimed water is applied.

D. Discharge Specifications (General)

1. Neither the treatment nor the discharge shall cause pollution or nuisance as defined by the California Water Code, Section 13050.
2. The discharge shall not cause degradation of any water supply.
3. The dissolved oxygen content of the recycle ponds or the retention pond shall not be less than 1.0 mg/L.
4. Freeboard limitations for the recycle ponds and the retention pond shall be in effect in the following manner:
 - a. Between 1 October and 1 April, the Discharger shall maintain a minimum of two feet of freeboard in each pond (measured vertically to the lowest point of overflow).
 - b. During the remainder of the year, the Discharger shall maintain a minimum of one foot of freeboard in each pond.

E. Sludge, Wood Waste, and/or Ash Management

1. Collected screenings, sludge, wood ash, and other solids removed from liquid wastes, recycle ponds, retention ponds, recycle return ditches, oil/water separators, catch basins, or other applicable sources shall be disposed of in a manner approved by the Executive Officer and consistent with *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.

2. Any proposed change in sludge or ash use or disposal practice shall be reported to the Executive Officer at least **30 days** in advance of the change.
3. Wood ash removed from the facility shall be:
 - a. Tilled into agricultural fields for soil amendment if it is non-hazardous; or
 - b. Disposed in a dedicated unit consistent with Title 27, Section 20200(b); or
 - c. Disposed in a Class III landfill consistent with Title 27, Section 20220(d).

Any other use shall constitute disposal and shall be subject to Title 27, CCR requirements.

F. Receiving Water Limitations

Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in Churn Creek or its tributaries:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scum), or suspended material to create a nuisance or adversely affect beneficial uses.
4. Aesthetically undesirable discoloration.
5. Fungi, slimes, or other objectionable growths.
6. The turbidity of receiving waters to increase over background levels by more than:
 - a. 1 NTU when background turbidity is between 0 and 5 NTUs;
 - b. 20 percent when background turbidity is between 5 and 50 NTUs;
 - c. 10 NTUs when background turbidity is between 50 and 100 NTUs; and
 - d. 10 percent when background turbidity is greater than 100 NTUs.

In determining compliance with the above limits, appropriate averaging periods may be applied upon approval by the Executive Officer.

7. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units. In determining compliance with these limits, appropriate averaging periods may be applied upon approval by the Executive Officer.
8. Deposition of material that causes nuisance or adversely affects beneficial uses.
9. Increase the normal ambient temperature of waters by more than 5°F (3°C).
10. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
11. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to cause nuisance or adversely affect beneficial uses.
12. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
13. Violations of any applicable water quality standard for receiving waters adopted by the Regional Board or the SWRCB pursuant to the CWA and regulations adopted thereunder.

G. Receiving Water Limitations (Storm water Discharges)

1. Storm water discharges to any surface or groundwater shall not adversely affect human health or the environment.
2. Storm water discharges shall not cause or contribute to a violation of any applicable water quality standards, including the NTR, CTR, and the Basin Plan water quality objectives

H. Provisions

1. The Discharger shall comply with all the items of the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES),” dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as “Standard Provision(s).”

2. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2003-0154, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall not use any form of treated wood as fuel in the boiler, including, but not limited to, wood treated with copper, chromium, arsenic, pentachlorophenol, or tetrachlorophenol unless it can be shown that disposal of the resulting ash poses no threat to water quality.
4. The Discharger shall comply with the standards contained in the Health and Safety Code, Chapter 6.67, Aboveground Storage of Petroleum. A spill prevention control and countermeasure plan, prepared and certified by a registered professional engineer has been submitted by the Discharger.
5. Should any of the analyses required in the Monitoring and Reporting Program No. R5-2003-0154 be performed by the Discharger or at a non-certified laboratory, the Discharger shall comply with all applicable parts of the Standard Provisions, Section C., Provisions for Monitoring including implementation of a Quality Assurance-Quality Control (QA-QC) Program and preparation of a QA-QC Plan. The QA-QC Program must conform to US EPA guidelines or to procedures approved by the Executive Officer. The QA-QC Plan must be prepared at least **one month** prior to on-site analysis, and reviewed and updated, if necessary, at a frequency not less than every 3 years.
6. The Discharger shall conduct the monitoring specified in Monitoring and Reporting Program No. R5-2003-0154. If sufficient information is collected and indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numerical water quality standard, then this Order may be reopened to include effluent limit(s) to achieve water quality standards. Additionally, if pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then the Discharger may be required to conduct additional monitoring to provide sufficient information.

The Discharger may conduct studies pertaining to Facility operations, the effluent discharge, and the receiving water. For example, such studies may include a site-specific metals translator study, or a mixing zone and dilution study. If requested, the Regional Board will review such studies and if warranted, will reopen this permit to make appropriate changes.

7. **Within 60 days** after adoption of this Order, the Discharger shall complete and submit a compliance time schedule justification for lead and bis-2-ethylhexylphthalate. The compliance schedule justification shall include all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d)). The final water quality based effluent limitations for lead and bis-2-ethylhexylphthalate become effective **60 days** after adoption of this Order unless an acceptable compliance schedule justification meeting the requirements of Section 2.1 of the SIP is completed and submitted by the Discharger. If an acceptable compliance schedule justification is submitted, the interim effluent limits described in this Order for lead and bis-2-ethylhexylphthalate will supercede the final effluent limits until **36 months** after adoption of this Order. At that time the final effluent limits will be fully applicable. As this schedule is greater than one year, the Discharger shall submit semi-annual progress reports on **15 January and 15 July** each year until the Discharger achieves compliance with the final water quality based effluent limitations for lead and bis-2-ethylhexylphthalate. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limits, or (2) submit a workplan(s) for studies that will prove that the final effluent limits should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limits. The Regional Board may reopen this Order and modify the final effluent limits if appropriate, based on results of studies the Discharger may conduct.
8. The Discharger shall conduct an investigation as to the source of acute toxicity in the discharge and take necessary measures to mitigate the acute toxicity and maintain compliance with the acute toxicity effluent limit. Annual progress reports detailing the findings of the investigation and the proposed mitigations must be submitted to the Regional Board **by 1 July** each year until compliance with the acute toxicity effluent limits has been consistently met for one year during which discharge occurs. This Order does not provide a time schedule for compliance with the acute toxicity effluent limit and the effluent limit established in this Order is applicable immediately upon adoption of this Order.
9. The Discharger shall conduct chronic toxicity testing **during the initial discharge of an annual wet season** as specified in Monitoring and Reporting Program No. R5-2003-0154 once during the life of this Order. If initial and confirmation testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a toxicity reduction evaluation (TRE), and upon approval conduct the

TRE. This Order will be reopened to include a chronic toxicity limitation and/or a limitation for the specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened to include a limitation based on that objective.

10. The Discharger shall 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. This Order establishes concentration-based effluent limits. Mass-based effluent limits are also required to be established, however it is not possible to establish the mass-based effluent limits at this time due to lack of effluent flow information. Upon review of sufficient flow information, the Regional Board may reopen this Order and establish mass-based effluent limits and an effluent flow limit. The flow measuring facilities shall be fully operational **within 12 months** of adoption of this Order.
11. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
12. The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) containing best management practices to reduce pollutants in the storm water discharges. The Discharger shall amend the SWPPP whenever there is a change in construction, site operation, or maintenance that may affect the discharge of significant quantities of pollutants to surface water or groundwater. The SWPPP must also be amended if there are storm water-related violations of this permit, or the Discharger has not achieved the general objectives of controlling pollutants in the storm water discharges.
13. The Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge or water treatment chemicals or biocides used. Notification on water treatment chemical changes shall include information from the manufacturer on toxicity and hazardous classifications.
14. The Discharger shall use the best practicable cost-effective control techniques currently available to comply with discharge limits specified in this Order.
15. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

16. This Order expires on **1 October 2008** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days** in advance of such date an application for renewal of waste discharge requirements if it wishes to continue the discharge.
17. 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 this office.

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, the name, address, and the telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 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.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 17 October 2003.

THOMAS R. PINKOS, Executive Officer

BJS:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NPDES NO. CA0081400

MONITORING AND REPORTING PROGRAM NO. R5-2003-0154
FOR
SIERRA PACIFIC INDUSTRIES
SHASTA LAKE DIVISION
SHASTA COUNTY

This monitoring and reporting program specifies required monitoring and reporting to be conducted by the Discharger and shall not be changed unless a revised monitoring and reporting program is issued by the Executive Officer.

POND MONITORING

The following shall constitute the monitoring for the flushing ditch, recycle pond, and retention pond:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Freeboard	Feet	Visual	Weekly

EFFLUENT MONITORING (DISCHARGE 001 AND 002)

Effluent samples from Discharge 001 and 002 shall be collected downstream from the last connection through which wastewater can be admitted into the outfall. Effluent samples should be representative of the volume and nature of the discharge. Samples collected from the outlet structure of the ponds will be considered adequately composited. The time of collection of a grab sample shall be recorded. The following shall constitute the monitoring program:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling^{1,2} Frequency</u>
Discharge Flow	cfs	Visual	Daily
Precipitation	inches/tenths	Visual	Daily
pH	pH units	Grab	Weekly
Settleable Solids	mL/L	Grab	Weekly
Turbidity	NTU	Grab	Weekly
Electrical Conductivity	μS/cm at 25°C	Grab	Weekly
Total Suspended Solids	mg/L	Grab	Weekly
COD	mg/L	Grab	Weekly
Tannins and Lignins	mg/L	Grab	Weekly

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling^{1,2} Frequency</u>
Hardness	mg/L	Grab	Weekly
Cadmium (Total Recoverable)	ug/L	Grab	Weekly
Copper (Total Recoverable)	ug/L	Grab	Weekly
Lead (Total Recoverable)	ug/L	Grab	Weekly
Zinc (Total Recoverable)	ug/L	Grab	Weekly
bis-2-Ethylhexylphthalate (EPA 8270)	ug/L	Grab	Weekly
Acute Toxicity ³	% Survival	Grab	Bi-monthly
Oil and Grease	mg/L	Grab	Twice per year

¹ Samples shall be collected during the first hour from the first discharge after the dry season and according to sampling frequency thereafter.

² If the discharge is intermittent rather than continuous, then the first day of each intermittent discharge shall be monitored, but no more than twice the frequency noted.

³ 96-hour static bioassay using rainbow trout as the test species.

THREE SPECIES CHRONIC TOXICITY

Chronic toxicity monitoring using a sample collected during the first hour from the first discharge from Discharge 001 or 002 after a dry season shall be conducted **once during the 5-year permit renewal period** to determine whether the effluent is contributing toxicity to Churn Creek or its tributaries. The sample shall be representative of the initial discharge of the wet season. The testing shall be conducted as specified in EPA 600/4-91-002, or latest edition. If undiluted effluent exhibits toxicity, the Discharger shall sample during the next available discharge event and conduct the test using the dilution series specified below. Chronic toxicity samples shall be collected at the discharge prior to its entering the Churn Creek tributary. Twenty-four hour composite or individual grab samples shall be representative of the volume and quality of the discharge. Date and time of sample collection shall be recorded. The results shall be submitted with the monitoring report and include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>75</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>Receiving Water</u>	<u>Lab Water</u>
% Discharge Effluent	100	75	50	25	12.5	0	0
% Dilution Water ¹	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water from the Churn Creek tributary taken upstream from the discharge point. If the receiving water exhibits toxicity, or if no receiving water is available, the Discharge may be required to use lab water as dilution water. The dilution series may be modified after the initial test upon approval of the Executive Officer.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water samples shall be collected from the following stations during discharge from Discharge 001 or 002.

Station	Description
R-1	Tributary of Churn Creek approximately 50 feet upstream from the discharge.
R-2	Tributary of Churn Creek approximately 50 feet below Discharge 001.

Constituent	Station	Unit	Type of Sample	Sampling Frequency
Flow	R-1	cfs	Visual	Weekly
pH	R-1 and R-2	pH Units	Grab	Weekly
Turbidity ²	R-1 and R-2	NTU	Grab	Weekly
Hardness	R-1	mg/L	Grab	Monthly
Cadmium (Total Recoverable)	R-1	ug/L	Grab	Weekly
Copper (Total Recoverable)	R-1	ug/L	Grab	Weekly
Lead (Total Recoverable)	R-1	ug/L	Grab	Weekly
Zinc (Total Recoverable)	R-1	ug/L	Grab	Weekly
bis-2-Ethylhexylphthalate	R-1	ug/L	Grab	Monthly

¹ Samples shall be collected during the same sampling event as the effluent discharge samples.

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

(1) Individual sampling – once per week during discharge.

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

In conducting the receiving water sampling, a log should be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention should be given to the presence or absence of:

- | | |
|---------------------------------|--------------------|
| a. Bark or sawdust | e. Scum or foam |
| b. Floating or suspended matter | f. Bottom deposits |
| c. Oil sheen or slick | g. Aquatic life |
| d. Discoloration | h. Upstream flow |

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

STORMWATER MONITORING (GENERAL)

Visual inspections for the presence of non-stormwater discharges shall be conducted no less than twice during the dry season (May to September) at all stormwater discharge locations. A report of the findings shall be submitted with the monitoring reports.

Samples shall be collected of significant stormwater discharges during the wet season (1 October to 30 April). A significant stormwater discharge is a continuous discharge of stormwater for a minimum of 1 hour, or intermittent discharge of stormwater for a minimum of 3 hours in a 12-hour period. Stormwater samples shall be collected as follows:

Station	Description
SM-1	Southern drainage course above El Cajon Avenue
SM-2	Southern drainage course at southern property line near telephone pole

Constituent	Unit	Location	Type of Sample	Sampling Frequency ¹
Flow	cfs	SM-1, SM-2	Estimate	Twice per year
pH	pH units	SM-1, SM-2	Grab	Twice per year
Electrical Conductivity	µS/cm @ 25°C	SM-1, SM-2	Grab	Twice per year
Total Suspended Solids	mg/L	SM-1, SM-2	Grab	Twice per year
Oil and Grease	mg/L	SM-2	Grab	Twice per year

¹ Samples shall be collected during the first hour of discharge during the first significant storm event of the wet season and one other storm event during the same wet season.

In conducting the stormwater sampling, a log should be kept of the stormwater conditions leaving the facility. Attention should be given to the presence or absence of floating and suspended materials, oil or fuel sheen or slicks, discoloration, turbidity, and odor. Notes on the stormwater conditions shall be summarized in the monitoring report. Additionally, all oil/water separators, catchment basins, etc. along the main stormwater drainage through the facility shall be inspected and maintained as necessary and as according to the facility's Storm Water Pollution Prevention Plan. A record of the inspections and maintenance shall be retained at the facility and a summary of these activities provided in the monthly monitoring report.

ASH MONITORING

The monthly quantity of ash generated and the method and location of ash disposal shall be reported. If ash is used as a soil amendment on agricultural lands, the location and loading rate per acre shall be reported. Representative composite samples of wood ash used as a soil amendment shall be analyzed for the following:

Constituent	Unit	Sampling Frequency
Total Organic Carbon	mg/kg	Quarterly ¹
Total Dissolved Solids	mg/L	Quarterly ^{1,2}
Electrical Conductivity	µS/cm at 25°C	Quarterly ^{1,2}
pH	pH Units	Quarterly ^{1,2}
Moisture Content	% Solids	Quarterly ^{1,2}
Arsenic	µg/L	Annually ²
Cadmium	µg/L	Annually ²
Chromium VI	µg/L	Annually ²
Lead	µg/L	Annually ²
Manganese	µg/L	Annually ²
Nickel	µg/L	Annually ²

¹ When utilized for soil amendment, one analysis per application of 50 tons (Wet Basis). Not more than three analyses in any three-month period will be required.

² Representative composite samples of wood ash shall be tested using the Waste Extraction Test for soluble extract using deionized water as the extractant. The procedures described in the CCR, Title 22, Division 4, Chapter 30, shall be followed.

PRIORITY POLLUTANT AND DIOXIN CONGENERS MONITORING REQUIRED BY THE STATE IMPLEMENTATION PLAN (SIP)

Prior to expiration of this Order, the Discharger shall conduct one sampling event and analysis for priority pollutants. The Discharger is not required to perform additional asbestos sampling because it has been determined that asbestos does not have a reasonable potential to cause or contribute to a violation of applicable water quality standards. The sampling event shall be conducted during **the initial discharge of a wet weather season**. Effluent and upstream samples must also be collected and analyzed for pH and hardness in order to calculate translators, which are needed for metals that are hardness and/or pH dependent. All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each of the priority pollutant constituents. Laboratory methods and limits shall be as described

in this Monitoring and Reporting Program, and in the 8 December 2000 CTR letter issued to the Discharger, unless a variance has been approved by the Executive Officer.

If after a review of the monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above water quality objectives, this Order will be reopened and limitations based on those objectives included. Additionally, if pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

All organic analyses shall be by Gas Chromatography/Mass Spectrometry (GCMS), Method 8260B for volatiles and Method 8270C for semi-volatiles. Pesticides shall be analyzed by Method 8081A. Dioxins shall be analyzed by Method 1613/8290. If organic analyses are run by Gas Chromatography (GC) methods, any detectables are to be confirmed by GCMS. Inorganics shall be analyzed by the following Methods:

ICP/MS-EPA Method 1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
CVAA-EPA Method 1631	Mercury
HYDRIDE-EPA Method 206.3	Arsenic
FAA-EPA Method 218.4	Chromium VI
Colorimetric-EPA Method 335./ 2 or 3	Cyanide

Abbreviations:

FAA-Flame Atomic Absorption	ICP/MS-Inductively Coupled Plasma/Mass Spectrometry
CVAA-Cold Vapor Atomic Absorption	HYDRIDE-Gaseous Hydride Atomic Absorption

Dioxin congeners analysis shall be performed as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan)* using High Resolution Mass Spectrometry.

ABOVEGROUND STORAGE TANK MONITORING

The Discharger shall conduct inspections and maintenance of the aboveground storage tanks at the facility as specified in the facility's Spill Prevention Control and Countermeasures Plan. A record of the inspections and maintenance shall be retained at the facility.

REPORTING

Unless otherwise specified, monitoring results shall be submitted to the Regional Board by the 1st day of the second month following sample collection (i.e., the January report is due by 1 March).

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with the waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

Upon written request by the Regional Board, the Discharger shall submit an annual report (calendar year) with both tabular and graphical summaries of the monitoring data obtained during the previous year. 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. Annual reports shall be submitted by **1 February of the subsequent year**.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provisions D.6.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

17 October 2003

BJS:

INFORMATION SHEET

ORDER NO. R5-2003-0154
SIERRA PACIFIC INDUSTRIES
SHASTA LAKE DIVISION
SHASTA COUNTY

GENERAL INFORMATION

Sierra Pacific Industries, Shasta Lake Division, operates a sawmill facility in the city of Shasta Lake, Shasta County, in Section 36, T33N, R5W, MDB&M (Assessor's Parcel No. 006-030-34). The sawmill facility includes a paved log yard, sawmill, sorter/stacker, planer, various storage sheds, drying kilns, boiler, bone yard, maintenance shop, and 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 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, subsequent storm water runoff from the log yard is screened and discharged at Discharge 001 to an intermittent unnamed tributary of Churn Creek that flows along the west side of the facility. Due to sufficient storage capacity in the retention pond, Discharge 001 is generally only used during winters with heavy rainfall. The Discharger proposes to construct a second discharge point, Discharge 002. Discharge 002 would be located at the northwestern end of the retention pond and would discharge retention pond water into the unnamed Churn Creek tributary. This Order allows discharge from either location. 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 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' closed Class III landfill located west of the sawmill facility enters the western unnamed Churn Creek tributary below Discharge 001. The landfill is regulated by the Regional Board pursuant to Order No. R5-2003-0081. Storm water runoff from the former McDonald Moulding facility located southwest of the sawmill is not regulated and a new tenant is in place.

During 1988, the Discharger discontinued use of a fungicide dip system. The dip tank was transported and disposed at a hazardous waste disposal site. Soil investigations detected pentachlorophenol (PCP) contamination exceeding the Department of Health Services' Hazardous Waste Total Threshold Limit Concentration of 17 mg/kg beneath the southeast section of the concrete slab. The Discharger asphalt-sealed the dip area including the concrete slab and drainage ditch. Initially, low levels of PCP were still detected in storm water runoff from the area. The Discharger applied additional layers of asphalt seal over the former PCP area and drainage ditch. Subsequent monitoring of storm water runoff from the area indicated that PCP was no longer present and therefore, this permit does not require PCP monitoring. The Discharger plans to add 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. 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.

The facility is in the Enterprise Flat Hydrologic Subarea (No. 508.10), as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in August 1986. The mean annual rainfall in the area is approximately 60 inches, based on information from the U.S. Geological Survey and DWR.

BENEFICIAL USES

The Basin Plan on page II-2.00 states that: “Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams.” The beneficial uses of Churn Creek and its tributaries are not individually identified in the Basin Plan. Application of the tributary rule requires that the beneficial uses of any specifically identified water body apply to its tributary streams. The Basin Plan does not identify any beneficial uses specifically for Churn Creek and its tributaries, but the Basin Plan does identify present and potential beneficial uses for the Sacramento River, to which Churn Creek is tributary.

The Basin Plan identifies the following beneficial uses for the Sacramento River: municipal and domestic supply; agricultural supply; industrial service supply; hydropower generation; water contact and noncontact recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; navigation; ground water recharge; and freshwater replenishment. In addition, State Board Resolution 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

Upon review of the flow conditions, habitat values, and beneficial uses of Churn Creek and its tributaries, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Churn Creek and its tributaries. The Basin Plan defines beneficial uses 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 Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Churn Creek and its tributaries based upon the following facts:

a. *Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply*

The State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Churn Creek and its tributaries and the Sacramento River downstream of the discharge for multiple uses including domestic, agricultural, and industrial service supply. Since Churn Creek and its tributaries are intermittent streams, the creeks likely provide groundwater recharge during periods of low flow. Domestic water supply in the area is generally provided by municipal entities using treated surface water. Although the use of area groundwater as domestic supply is limited, the potential for expanded use exists. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for increased domestic, agricultural, and industrial uses of groundwater and the water in Churn Creek and its tributaries.

b. *Hydropower Generation, and Navigation*

Although no records of existing hydropower generation and navigation uses were found on Churn Creek and its tributaries, these uses do exist in the Sacramento River to which Churn Creek is tributary. The very nature of these uses depends on the presence of flow from tributary streams and therefore these uses are protected by including them as beneficial uses in streams tributary to the Sacramento River. Furthermore, considering the likely future value of electricity generation, it is not unreasonable to expect that new technologies for small hydropower projects may make hydropower generation uses on Churn Creek or its tributaries desirable.

c. *Water Contact and Noncontact Recreation*

The Regional Board finds that Churn Creek and its tributaries flow through rural and residential areas and that there is ready public access. Contact and noncontact recreational activities exist and are likely to increase as the population in the area grows. Prior to discharge into the Sacramento River, Churn Creek flows through areas of general public access. The Sacramento River also offers recreational opportunities.

d. *Warm and Cold Freshwater Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Wildlife Habitat*

Churn Creek flows to the Sacramento River. Fish species present in Churn Creek and its tributaries are consistent with both cold and warm water fisheries. There is a potential for anadromous fish migration necessitating a cold water designation and cold water salmonid species have been found in Churn Creek and its tributaries. The Basin Plan (Table II-1) designates the Sacramento River from Shasta Dam to Colusa Basin Drain as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Churn Creek and its tributaries. The cold water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. The riparian areas along Churn Creek and its tributaries support wildlife habitat.

e. *Groundwater Recharge, and Freshwater Replenishment*

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Churn Creek and its tributaries are at times dry, it is reasonable to assume that the stream flow is not present at its source, or the water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of municipal and irrigation water supply. When water is present in Churn Creek and its

tributaries, there is hydraulic continuity between it and the Sacramento River. During periods of hydraulic continuity, Churn Creek and its tributaries add to the water quantity and may impact the quality of water flowing down stream in the Sacramento River.

The beneficial uses of any specifically identified water body generally apply to its tributary streams. The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the presence of contact recreational activities, the beneficial uses of the Sacramento River apply to Churn Creek and its tributaries. The Regional Board also finds that based on the available information that Churn Creek and its tributaries are intermittent streams. The intermittent nature of Churn Creek and its tributaries means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available on a year-round basis. Normally, discharge from the facility occurs only when there is flow in Churn Creek and its tributaries, as most of the discharge volume is due to storm water runoff.

The Basin Plan states that *“Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.”* State Water Resources Control Board Resolution No. 88-63 *“Sources of Drinking Water”* provides that *“All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards...”*. The beneficial use of municipal and domestic supply is applicable to Churn Creek and its tributaries and the west fork of Churn Creek and its tributaries based on Resolution 88-63, the Basin Plan tributary rule, and actual uses.

The beneficial uses of groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

ANTIDegradation

Resolution No. 68-16 requires the Regional Board in regulating the discharge of waste to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board’s policies (e.g., constituent concentrations that exceed water quality objectives). The Regional Board has considered Resolution No. 68-16 and finds that the current discharge is consistent with this policy, and could not cause an increase in groundwater or surface water constituent concentrations above water quality objectives, provided the discharge is maintained in compliance with the this Order.

GROUNDWATER MONITORING

This Order does not require the Discharger to conduct groundwater monitoring. The Discharger already conducts groundwater monitoring associated with the closed landfill located immediately adjacent to the sawmill facility. Groundwater monitoring results associated with the landfill do not indicate that operation of the sawmill storm water system has affected groundwater quality. Furthermore, groundwater in the area is not commonly put to beneficial use because a municipal water supply system is available. If any information becomes available indicating adverse groundwater impacts from the sawmill storm water system operation, a groundwater investigation and subsequent monitoring may be required.

REASONABLE POTENTIAL ANALYSIS

Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. USEPA adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. The NTR and CTR contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan or SIP), which contains guidance on implementation for the NTR and CTR.

On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis. Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. The Discharger sampled the effluent and receiving water on 2 January 2002 and 14 January 2003, to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticides, metals, asbestos, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners.

The methodology described in Section 1.3 of the SIP was used to evaluate the Discharger's monitoring data and determine for what water quality constituents reasonable potential exists to cause or contribute to an instream excursion above a narrative or numerical water quality standard or objective.

Cadmium, copper, lead, zinc, and bis-2-ethylhexylphthalate were detected in the effluent at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. The following tables summarize the monitoring data for these constituents and the applicable water quality standards or objective.

Constituent	Effluent Concentration (ug/L, total recoverable)		Receiving Water Concentration (ug/L, total recoverable)	
	2 Jan 2002	14 Jan 2003	2 Jan 2002	14 Jan 2003
Sampling Dates:	2 Jan 2002	14 Jan 2003	2 Jan 2002	14 Jan 2003
Cadmium	0.23 dnq	<0.02	0.06 dnq	<0.02
Copper	9.1	4.4	4.6	1.0
Lead	2.4	0.7	1.3	0.08 dnq
Zinc	85	35	14	4
bis-2-Ethylhexylphthalate	3 dnq	11	<5	13

dnq: Detected but not quantified – estimated value.

Constituent	Water Quality Standard or Objective (ug/L, total recoverable) ¹
Cadmium	CTR chronic=1.15, BP instantaneous=0.21
Copper	CTR chronic=4.08, BP instantaneous=5.63
Lead	CTR chronic=0.93, CTR acute=23.8
Zinc	CTR chronic=52.8, BP instantaneous=15.68
bis-2-Ethylhexylphthalate	CTR human health=1.8

¹ Based on a receiving water hardness of 38 mg/L.

BP instantaneous: Instantaneous limit based on Basin Plan objectives.

BASIS FOR PERMIT REQUIREMENTS

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

Discharge Prohibitions

The Basin Plan provides that all waters shall be maintained free of toxic substances. Water treatment chemicals used in maintaining the water quality within the boiler may cause toxicity to aquatic life. The Order prohibits the discharge of hazardous or toxic substances (including water treatment chemicals) to surface waters or drainage courses.

The Basin Plan states that surface water shall not cause oils, greases, or other materials in concentrations that cause nuisance or result in a visible film or coating on the surface of the water. This Order prohibits the discharge of petroleum products (including oil, grease, gasoline, and diesel) to surface waters or surface water drainage courses.

Ten to One Dilution Requirement

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 requirements for other regulated facilities in the same situation, in the same area 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 dilution requirement does not address the issue of a mixing zone. The Discharger has not provided a mixing zone study, and therefore, as discussed below, no dilution credit can be allowed for the purposes of calculating or enforcing effluent limits. 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. The flow measurement facilities are also required in order to provide the data necessary to convert the effluent limits established in this Order from concentration-based to mass-based limits.

Dilution Considerations for Effluent Limit Calculations

In determining effluent limits as described below, no credit for dilution of the effluent with the receiving water was considered. The Churn Creek tributary that receives discharge from the Facility has intermittent flow and is physically constricted. Even though the discharge occurs only during wet weather conditions when upstream flow is present, and this Order requires a minimum dilution of 10:1, the Discharger has not provided information to prove that a dilution allowance and mixing zone would be protective of receiving water beneficial uses and not exceed water quality standards or objectives. Therefore, all effluent limits are based on water quality criteria/objective compliance at the "end of pipe," prior to entering the receiving water. If the Discharger conducts a study that proves that a dilution credit and mixing zone is appropriate, then this Order may be reopened and modified as appropriate.

Calculation of Effluent Limits for Priority Pollutants

As explained above, a Reasonable Potential Analysis was performed to determine what priority pollutants are discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. Cadmium, copper, lead, zinc, and bis-2-ethylhexylphthalate are priority pollutants that were detected in the effluent at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. No credit for dilution of the effluent with the receiving water was considered as discussed and justified, above.

Cadmium

Hardness

The lowest observed, representative hardness measurement of the receiving water is used, when needed, to calculate effluent limits for hardness-dependent metals. On 2 January 2002 and 14 January 2003, upstream receiving water hardness was measured at 38 mg/L and 41 mg/L, respectively. Therefore, 38 mg/L is used as a conservative value for calculations.

Translator

Appendix 3 of the SIP provides conversion factors (CFs) or translators for conversion between total recoverable and dissolved concentrations of certain metals. The CFs are listed for both acute and chronic criteria. Some of the CFs are hardness dependent. The conversion factors based on hardness for cadmium in freshwater are calculated using the following equations:

Cadmium:

$$CF_{\text{Chronic}} = 1.101672 - [(\ln \{\text{hardness}\})(0.041838)], \text{ at } 38 \text{ mg/L hardness} = 0.9495$$

$$CF_{\text{Acute}} = 1.136672 - [(\ln \{\text{hardness}\})(0.041838)], \text{ at } 38 \text{ mg/L hardness} = 0.9845$$

Water Quality Criteria or Objective

The CTR acute aquatic life criterion for cadmium is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for cadmium is 0.21 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 1.15 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. In this case the ECA acute is 0.21 ug/L (total recoverable) and the ECA chronic is 1.15 ug/L (total recoverable).

Effluent Limit Calculation

Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten, and the ECA multiplier is 0.527 (chronic) and 0.321 (acute) for calculating long-term averages (LTAs). Therefore, the LTA based on the Basin Plan objective is lowest at 0.07 ug/L (total recoverable). Using the SIP methodology, the LTA is multiplied by the maximum daily effluent limitation (MDEL) multiplier to arrive at the MDEL. Similarly, the LTA is multiplied by the average monthly effluent limit (AMEL) multiplier to arrive at the AMEL. Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for cadmium is **0.22 ug/L (total recoverable)** and the AMEL is **0.11 ug/L (total recoverable)**.

Copper

Hardness

The lowest observed, representative hardness measurement of the receiving water is used, when needed, to calculate effluent limits for hardness-dependent metals. On 2 January 2002 and 14 January 2003, upstream receiving water hardness was measured at 38 mg/L and 41 mg/L, respectively. Therefore, 38 mg/L is used as a conservative value for calculations.

Translator

Appendix 3 of the SIP provides conversion factors (CFs) or translators for conversion between total recoverable and dissolved concentrations of certain metals. The CFs are listed for both acute and chronic criteria. The conversion factors for copper in freshwater are as follows:

Copper:

$$CF_{\text{Chronic}} = 0.960$$

$$CF_{\text{Acute}} = 0.960$$

Water Quality Criteria or Objective

The CTR acute aquatic life criterion for copper is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for copper is 5.63 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 4.08 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. In this case the ECA acute is 5.63 ug/L (total recoverable) and the ECA chronic is 4.08 ug/L (total recoverable).

Effluent Limit Calculation

Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten, and the ECA multiplier is 0.527 (chronic) and 0.321 (acute) for calculating long-term averages (LTAs). Therefore, the LTA based on the Basin Plan objective is lowest at 1.81 ug/L (total recoverable). Using the SIP methodology, the LTA is multiplied by the maximum daily effluent limitation (MDEL) multiplier to arrive at the MDEL. Similarly, the LTA is multiplied by the average monthly effluent limit (AMEL) multiplier to arrive at the AMEL. Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for copper is **5.63 ug/L (total recoverable)** and the AMEL is **2.81 ug/L (total recoverable)**.

Lead (final limit)

Hardness

The lowest observed, representative hardness measurement of the receiving water is used, when needed, to calculate effluent limits for hardness-dependent metals. On 2 January 2002 and 14 January 2003, upstream receiving water hardness was measured at 38 mg/L and 41 mg/L, respectively. Therefore, 38 mg/L is used as a conservative value for calculations.

Translator

Appendix 3 of the SIP provides conversion factors (CFs) or translators for conversion between total recoverable and dissolved concentrations of certain metals. The CFs are listed for both acute and chronic criteria. Some of the CFs are hardness dependent. The conversion factors based on hardness for lead in freshwater are calculated using the following equations:

Lead:

$$CF_{\text{Chronic}} = 1.46203 - [(\ln \{\text{hardness}\})(0.145712)], \text{ at } 38 \text{ mg/L hardness} = 0.9320$$

$$CF_{\text{Acute}} = 1.46203 - [(\ln \{\text{hardness}\})(0.145712)], \text{ at } 38 \text{ mg/L hardness} = 0.9320$$

Water Quality Criteria or Objective

The CTR acute aquatic life criterion for lead is applicable and is 23.8 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 0.93 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. In this case the ECA acute is 23.8 ug/L (total recoverable) and the ECA chronic is 0.93 ug/L (total recoverable).

Effluent Limit Calculation

Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten, and the ECA multiplier is 0.527 (chronic) and 0.321 (acute) for calculating long-term averages (LTAs). Therefore, the LTA based on the CTR chronic criteria is lowest at 0.49 ug/L (total recoverable). Using the SIP methodology, the LTA is multiplied by the maximum daily effluent limitation (MDEL) multiplier to arrive at the MDEL. Similarly, the LTA is multiplied by the average monthly effluent limit (AMEL) multiplier to arrive at the AMEL. Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for lead is **1.52 ug/L (total recoverable)** and the AMEL is **0.76 ug/L (total recoverable)**.

Zinc

Hardness

The lowest observed, representative hardness measurement of the receiving water is used, when needed, to calculate effluent limits for hardness-dependent metals. On 2 January 2002 and 14 January 2003, upstream receiving water hardness was measured at 38 mg/L and 41 mg/L, respectively. Therefore, 38 mg/L is used as a conservative value for calculations.

Translator

Appendix 3 of the SIP provides conversion factors (CFs) or translators for conversion between total recoverable and dissolved concentrations of certain metals. The CFs are listed for both acute and chronic criteria. The conversion factors for zinc in freshwater are as follows:

Zinc:

$$CF_{\text{Chronic}} = 0.986$$

$$CF_{\text{Acute}} = 0.978$$

Water Quality Criteria or Objective

The CTR acute aquatic life criterion for zinc is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for zinc is 15.68 ug/L (total recoverable, after adjusting for hardness). The CTR chronic aquatic life criterion is applicable and is 52.8 ug/L (total recoverable, after adjusting for hardness). No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the adjusted water quality criteria or objective. In this case the ECA acute is 15.68 ug/L (total recoverable) and the ECA chronic is 52.8 ug/L (total recoverable).

Effluent Limit Calculation

Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten, and the ECA multiplier is 0.527 (chronic) and 0.321 (acute) for calculating long-term averages (LTAs). Therefore, the LTA based on the Basin Plan objective is lowest at 5.03 ug/L (total recoverable). Using the SIP methodology, the LTA is multiplied by the maximum daily effluent limitation (MDEL) multiplier to arrive at the MDEL. Similarly, the LTA is multiplied by the average monthly effluent limit (AMEL) multiplier to arrive at the AMEL. Using the coefficient of variation of 0.6, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55, using a monthly sampling frequency of four times. Therefore, the MDEL for zinc is **15.64 ug/L (total recoverable)** and the AMEL is **7.80 ug/L (total recoverable)**.

bis-2-Ethylhexylphthalate (final limit)

Water Quality Criteria or Objective

The CTR human health criteria for bis-2-ethylhexylphthalate in sources of drinking water is applicable and is 1.8 ug/L. No dilution allowance is being granted, therefore the effluent concentration allowance (ECA) is equal to the water quality criteria or objective. In this case the ECA is 1.8 ug/L.

Effluent Limit Calculation

Using the SIP methodology, a coefficient of variation of 0.6 is appropriate if the number of effluent data points is less than ten. For CTR human health criteria, the average monthly effluent limit (AMEL) is equal to the ECA. Therefore, the AMEL for bis-2-ethylhexylphthalate is **1.8 ug/L**. For CTR human health criteria, the maximum daily effluent limit (MDEL) is equal to the ECA multiplied by the MDEL/AMEL multiplier. The MDEL/AMEL multiplier is 2.01 with a coefficient of variation of 0.6 and a monthly sampling frequency of 4 times. Therefore, the MDEL for bis-2-ethylhexylphthalate is **3.6 ug/L**.

Calculation of Interim Effluent Limits for Lead and Bis-2-Ethylhexylphthalate

As stated above, the USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge and the SIP contains guidance on implementation of the NTR and CTR. The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim limitations and dates for their achievement in the NPDES permit. The interim limitations must: be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions. The interim limitations in this Order are based on the current treatment plant performance. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001)(TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim limitation (*TSD, Table 5-2*). The Regional Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final Effluent Limitations, but in compliance with the interim Effluent Limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving

stream on a long-term basis. For example, USEPA states in the Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for copper, that it will take an unstressed system approximately three years to recover from a pollutant in which exposure to copper exceeds the recommended criterion. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the final Effluent Limitations can be achieved.

Interim Effluent Limit for Lead

Lead was detected in effluent from the Facility at concentrations of 2.4 ug/L and 0.7 ug/L. As described above, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for lead is **7.5 ug/L**. The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for lead cannot exceed the maximum detected concentration which is **2.4 ug/L**.

Interim Effluent Limit for bis-2-Ethylhexylphthalate

Bis-2-ethylhexylphthalate was detected in effluent from the Facility at concentrations of 3 ug/L (estimated concentration) and 11 ug/L. As described above, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for bis-2-ethylhexylphthalate is **34.2 ug/L**. The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for bis-2-ethylhexylphthalate cannot exceed the maximum detected concentration which is **11.0 ug/L**.

Effluent Limitations for Other Constituents and Parameters

Settleable Solids:

The Basin Plan states that waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses. The Order contains monthly average and daily maximum settleable solids limits of 0.1 mL/L and 0.2 mL/L respectively. The settleable solids limits in this permit are based on what can reasonably be achieved in well-designed, constructed and operated pollutant control systems. These limits are consistent with the previous Order.

Suspended Solids:

The Basin Plan states that waters shall not contain suspended material in concentrations that cause nuisance or adversely affects beneficial uses. The Order contains a daily maximum suspended solids limit of 100 mg/L. The 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.

pH Limit:

This Order requires the effluent pH to remain between 6.0 and 9.0 units. These limits are consistent with the limits in the previous Order and Timber Products Processing Point Source Category, Wet Storage Subcategory (40 CFR Part 429, Subpart I)

Acute Toxicity Limits:

The effluent generally consists of log deck debris, and storm water. This Order contains effluent limits for acute toxicity that are consistent with the previous Order.

Establishment of Mass-Based Effluent Limits and Effluent Flow Limit

This Order establishes concentration-based effluent limits, as described above. Mass-based effluent limits are also required to be established, however it is not possible to establish the mass-based effluent limits at this time due to lack of effluent flow information. 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. Upon review of sufficient flow information, the Regional Board may reopen this Order and establish mass-based effluent limits and an effluent flow limit.

Compliance Time Schedules

The effluent limits for cadmium, copper, and zinc are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders allowing the Discharger a period of time to fully comply with these effluent limits.

The effluent limits for lead and bis-2-Ethylhexylphthalate are based on more recently adopted water quality criteria contained in the National Toxics Rule and California Toxics Rule. This Order allows a time schedule for full compliance with these effluent limits. Interim effluent limits are included in this Order and are applicable upon adoption of this Order and during the period of the time schedule, provided the Discharger submits a written justification that the compliance time schedule is needed. The justification must be received by the Regional Board within **60 days** of adoption of this Order. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limits, or (2) submit a workplan(s) for studies that will prove that the final effluent limits should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limits within **36 months** of adoption of this Order, at which time the final effluent limits will become fully applicable. The Regional Board may reopen this Order and modify the final effluent limits if appropriate, based on results of studies the Discharger may conduct.

Acute Toxicity Investigation and Mitigation

Sampling and analysis of effluent from the Facility indicates that the discharge exhibits acute toxicity to the test species. This Order and the previous order contain effluent limits for acute toxicity. The discharge of effluent exhibiting test species survival below the minimum levels established in this Order are violations of this Order and subject to enforcement action. The Discharger has previously been able to comply with the acute toxicity limits and it is therefore evident that it is within the Discharger's control to eliminate acute toxicity violations. Therefore, this Order requires the Discharger to conduct an investigation as to the source of the acute toxicity and then take necessary measures to mitigate the acute toxicity and maintain compliance with the acute toxicity effluent limit. This Order does not provide a time schedule for compliance with the acute toxicity effluent limit and the effluent limit established in this Order is applicable immediately upon adoption of this Order.

Permit Reopener

If after a review of any monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above water quality objectives, this Order may be reopened and limitations based on those objectives included. Additionally, if pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

The Discharger may conduct studies pertaining to Facility operations, the effluent discharge, and the receiving water. For example, such studies may include a site-specific metals translator study, or a mixing zone and dilution study. If requested, the Regional Board will review such studies and if warranted, will reopen this permit to make appropriate changes.

Monitoring and Reporting

Recycle Pond, Retention Pond, and Flushing Ditch:

Freeboard monitoring is required to determine compliance with Discharge Specification D.4.

Precipitation:

This monitoring is consistent with the previous Order.

Effluent (Discharge 001 or 002) Monitoring for Non-Priority Pollutants:

Effluent monitoring for pH, electrical conductivity, suspended solids, and settleable solids is required to determine compliance with Effluent Limitations B.1 and B.2. Effluent monitoring for tannins and lignins, COD, and turbidity is required to determine compliance with Discharge Prohibitions A.5 and A.6.

Monitoring required under the General Permit for Discharges of Storm Water Associated with Industrial Activities (General ISW Permit) includes: pH, total suspended solids, oil and grease, and electrical conductivity. Under the General ISW Permit, additional zinc monitoring for Sector A1, General Sawmills and Planing Mills Standard Industrial Classification (SIC 2421) is also required.

Acute Toxicity-

Acute toxicity has previously been detected at Discharge 001. This Order requires bi-monthly monitoring for acute toxicity and is consistent with the previous Order.

Chronic Toxicity-

Provision H.7 of the Order requires monitoring for chronic toxicity once during the life of this Order. This requirement is consistent with those for similar facilities. If initial and confirmation testing indicates that the discharge causes, has the reasonable potential to cause or contributes to an in-stream excursion above the water quality objective for toxicity, then the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a toxicity reduction evaluation (TRE), and upon approval conduct the TRE. This Order will be reopened to include a chronic toxicity limitation and/or a limitation for the specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened to include a limitation based on that objective.

Receiving Water:

Visual monitoring of the receiving water continues from the previous Order. Receiving water monitoring for turbidity and pH is continued to determine compliance with Receiving Water Limitations F.6 and F.7.

Priority Pollutant Monitoring (Effluent and Receiving Water)

As discussed in "Reasonable Potential Analysis" above, cadmium, copper, lead, zinc, and bis-2-ethylhexylphthalate were detected in the effluent at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. This Order requires monitoring to determine compliance with effluent limitations for these constituents.

Prior to expiration of this Order, the Discharger is required to conduct one additional sampling event and analysis for priority pollutants. The sampling event and analysis of the discharge and receiving water shall be conducted according to the same requirements as the sampling events described in the 8 December 2000 California Toxics Rule / National Toxics Rule letter sent to the Discharger by the Regional Board.

Ash

Ash monitoring is continued consistent with the previous Order and as for similar facilities.

Aboveground Petroleum Storage

This visual monitoring is added to determine compliance with the facility's Spill Prevention Control and Countermeasure Plan.

BJS: 17 October 2003