

INFORMATION SHEET

ORDER R5-2016-XXXX
SIERRA PACIFIC INDUSTRIES
CHINESE CAMP MILL
TUOLUMNE COUNTY

Background

Sierra Pacific Industries (hereafter SPI or Discharger) owns and operates a lumber mill (Facility) at 14333 Perricone Road near Chinese Camp in Tuolumne County. The Facility manufactures, stores, and distributes wood products made from logs brought to the Facility. Major features include a 31-acre paved log deck, lumber mill, planer building, lumber storage areas, distribution and staging areas, vehicle maintenance and fueling areas, and an administrative building. On-site operations consist of log storage, debarking, cutting, and lumber storage.

The Facility is currently regulated by Waste Discharge Requirements (WDRs) Order 97-132, which authorizes the discharge of wastewater from its industrial storm water runoff and log deck irrigation system to two on-site ponds.

In March 2004, the Discharger submitted a Report of Waste Discharge (RWD) for the discharge of process wastewater and storm water runoff from the Facility's log deck and sawmill to 10 acres of adjacent pasture. On 16 January 2015, the Discharger submitted a Feasibility Analysis with a revised water balance to switch the land spreading area from the adjacent pasture to approximately 3.5 acres of unpaved land in the former log deck area within the Facility.

Facility and Discharge

The Facility processes approximately 80 million board feet annually. Logs are delivered by truck to the sawmill and stacked on a 31-acre paved area (log deck). Bark is removed from the logs through a mechanical debarking process. Following bark removal, the logs are cut, and sized for shipment. In 2006, the planer equipment as well as the kilns and associated boilers were removed from the site. In addition, between 2007 and 2008 the log deck was moved from its former unpaved area west of the sawmill to its current paved location south and east of the sawmill. These changes have resulted in less forklift traffic and improved overall efficiency resulting in reduce impacts from industrial activities.

The Facility uses a re-circulating log deck sprinkler system year-round as part of its operation to maintain moisture conditions on the logs. There are two water storage ponds maintained on-site identified as the Upper and Lower Ponds. Water stored in the Upper Pond, adjacent to and east of the paved log deck, is part of the log deck sprinkler system. Excess water from the log deck flows back into the Upper Pond for reuse. In the absence of storm water refilling the Upper Pond, groundwater is pumped into the Upper Pond to replace water that is lost due to sprinkling and evaporation. During major precipitation events the sprinkler system is shut off and the Upper Pond is used to capture storm water runoff from the log deck and industrial areas around the sawmill. Excess storm water runoff is discharged to the Lower Pond, just east of the Upper Pond. Log deck runoff contains bark, sawdust, tannins and lignins, dissolved organics, and settleable and suspended solids. No chemicals are added to the log deck sprinkler system.

In dry weather, groundwater from an on-site supply well (W-2) is used to provide make up water for the log deck sprinkler system. Well W-2 is constructed into the bedrock fractured aquifer and screened from about 68 to 339 feet below ground surface (bgs). An additional supply well adjacent to the truck scales, identified as LD-1, may also be used to supplement water for the log deck sprinkler system if well W-2 is insufficient.

The table below presents average concentrations from samples collected from the Upper and Lower Ponds as well as the supply well W-2 for January 2012 through July 2015.

TABLE 1. Wastewater Quality

Parameters	Units	Upper Pond	Lower Pond ¹	Supply Well (W-2)
pH	pH units	7.5 ²	7.7 ²	7.4 ²
Electrical Conductivity (EC)	umhos/cm	743	514	796
Total Dissolved Solids (TDS)	mg/L	536	380	507
BOD ₅ ³	mg/L	14.5	8.6	n/a
Bicarbonate	mg/L	290	195	345
Calcium	mg/L	28	26	30
Magnesium	mg/L	64	40	82
Sodium	mg/L	20	15	23
Chloride	mg/L	64	39	58
Sulfate	mg/L	3.9	6.1	8.4
Boron	mg/L	0.24	0.28	0.09
Iron	mg/L	0.76	0.57	0.05
Manganese	mg/L	0.43	0.21	0.15
Aluminum	mg/L	1.7	0.25	<0.05
Arsenic	ug/L	3.2	3.1	2.5
Total Organic Carbon (TOC)	mg/L	44	26	9.9
Tannin & Lignin	mg/L	9.6	4.1	1.8

¹. Average of 4 samples, since the Lower Pond was predominantly dry during this time period.

². Median pH.

³. 5-day Biochemical Oxygen Demand.

Solids

Solids generated during sawmill operations include twigs, bark, chips, shavings, and saw dust. According to the Discharger, chips are processed, stored on paved area adjacent to the sawmill, and sold for use in landscaping. The remaining materials are stored on an unpaved area near the southwest corner of the Facility until sold or shipped off-site for use as biofuel, soil amendment, or landscaping.

The Upper Pond is dredged, as needed, to remove solids and organic debris from the bottom of the pond. Current practice is to place the dredged material on the bank of the pond to build it up and so that the liquid drains back into the pond, which could lead to odor and nuisance conditions. This Order requires the Discharger to prepare a Solids Management Plan to identify potential disposal methods or reuse options and select an appropriate method to dispose of the dredged material from the ponds.

Proposed Changes

Historically, there have been instances in wet years when the ponds have overflowed and discharged a combination of wastewater and storm water runoff from industrial operations at the Facility into the adjacent Six-Bit Gulch Creek during periods of heavy precipitation. To prevent overflow of wastewater from the log deck and industrial storm water runoff from the sawmill operations, the Discharger began segregating the storm water runoff from its log deck and sawmill operations from other storm water drainages and began looking into land disposal options.

The Discharger contracted with a nearby property owner to discharge excess water from its Lower Pond to an adjacent 10-acre pasture. However, there were problems with the adjacent property owner and maintaining the berms to prevent runoff from the pasture area to nearby Six-Bit Gulch Creek and other surface water drainages. In January 2015, the Discharger submitted a Feasibility Analysis to switch the land spreading area from the adjacent pasture to unpaved land within the Facility boundaries. The Feasibility Analysis proposes to spread excess water from the Upper and Lower Ponds to approximately 3.5 acres of unpaved land within the former log deck area south of the sawmill.

The water balance submitted with the Feasibility Analysis used to model storage and disposal capacity at the Facility, was based on the containment of all wastewater and storm water runoff during a 100-year wet year. However, as discussed later under groundwater conditions high groundwater may infiltrate the ponds during wet years, which is not discussed in the Feasibility Analysis, and may decrease infiltration and storage capacity of the ponds. Therefore, this Order requires the Discharger to submit a technical report to demonstrate that sufficient capacity exists to contain all wastewater and storm water runoff on-site in the event of high groundwater and to document that all runoff controls and procedures are in place and operational.

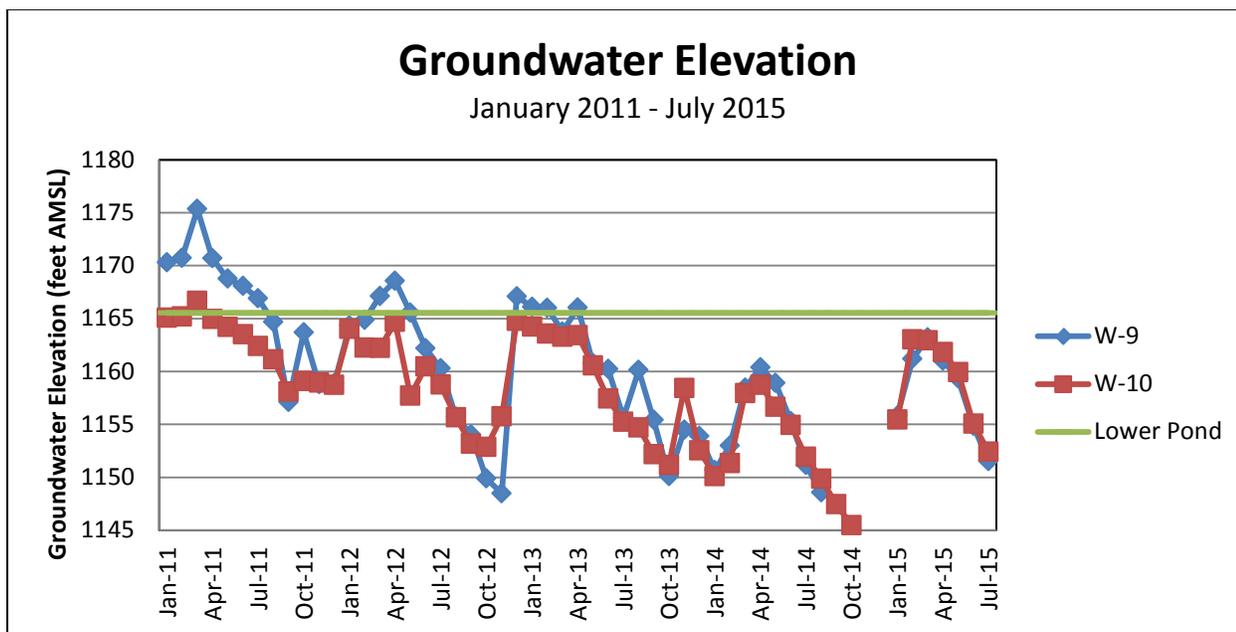
Groundwater Conditions

Groundwater is first encountered beneath the site in the shallow alluvium from 3 to 30 feet bgs. Deeper groundwater is present in the fractured bedrock beneath the site. Groundwater in the shallow alluvium generally flows to the south-southwest, which is consistent with site topography.

Two monitoring wells W-9 and W-10 installed at depths of at 35 and 27 feet bgs, respectively in the shallow alluvium are used to monitor groundwater in the vicinity of the ponds. In 2004 the Discharger installed monitoring wells GW-1 through GW-4 to expanded its groundwater monitoring well network both up-gradient and down-gradient of the wastewater storage ponds. GW-5 was installed in November 2014 to define the lateral extent of groundwater degradation down-gradient of the ponds.

Shallow groundwater is strongly influenced by recharge from rainfall, water stored in the ponds, and flows in the adjacent Six-Bit Gulch Creek, resulting in significant seasonal fluctuations especially in the monitoring wells around the ponds. A comparison of groundwater elevations taken from W-9 and W-10 from January 2011 to July 2015, with the

elevation of the bottom of the Lower Pond (1,165.53 feet above mean sea level) as depicted in the graph below shows that occasionally groundwater levels rise above the bottom of the pond during wet years in the winter and early spring when groundwater recharge is high.



The bottom elevation of the Upper Pond is not known, so it is not clear if this occurs in the Upper Pond as well. This Order requires the Discharger to determine the bottom elevation of the Upper Pond and re-configure the Upper Pond, if necessary, to ensure groundwater does not infiltrate into the pond and mix with the wastewater.

As shown in Table 2 below, groundwater monitoring shows some degradation around and down-gradient of the ponds, but except for manganese, concentrations are still below water quality objectives. Manganese concentrations in excess of the secondary Maximum Contaminant Level (MCL) appear to be centered around the ponds, and are likely due excessive organic material and reducing conditions beneath the ponds. Manganese concentrations appear to decrease as groundwater moves away from the ponds, and is just at the detection limit of 0.02 mg/L in GW-5 (down-gradient monitoring well furthest from the ponds).

TABLE 2. Groundwater Quality (January 2012 through July 2015)

Constituent	Units	Up-Gradient		Around Ponds		Down-gradient			MCLs
		GW-1	GW-2	W-9	W-10	GW-3	GW-4	GW-5	
pH	s.u.	8.9	7.7	7.3	7.1	7.5	7.5	7.6	
EC	umhos/cm	377	726	729	548	630	660	500	900/1,600 ¹
TDS	mg/L	230	450	471	350	394	416	338	500/1,000 ¹
Alkalinity	mg/L	191	286	292	214	308	300	203	
Calcium	mg/L	7.9	22	29	34	16	27	33	
Magnesium	mg/L	46	70	69	40	73	67	44	

TABLE 2. Groundwater Quality (January 2012 through July 2015)

Constituent	Units	Up-Gradient		Around Ponds		Down-gradient			MCLs
		GW-1	GW-2	W-9	W-10	GW-3	GW-4	GW-5	
Sodium	mg/L	45	27	20	17	7.8	12	8.5	
Potassium	mg/L	<1	1.9	9.8	11	<1	1.2	<1	
Chloride	mg/L	8.3	63	58	35	19	42	22	250/500 ¹
Sulfate	mg/L	3.2	7.6	8.4	10	5.6	11	15	250/500 ¹
Aluminum	ug/L	<50	<50	<50	<50	<50	<50	<50	1,000 ²
Arsenic	ug/L	1.5	0.9	3.9	6.6	2	2.4	8.4	
Iron	mg/L	<0.2	<0.2	0.24	<0.2	<0.2	0.2	0.14	0.3 ³
Manganese	mg/L	<0.02	0.16	1.23	1.61	<0.02	0.27	0.02	0.05 ³
TOC	mg/L	1.8	6.2	18	8.1	3.1	5.2	5.5	
Tannin & Lignin	mg/L	<0.1	0.4	2.1	1.2	0.2	0.5	0.2	

MCLs= Maximum Contaminant Levels for drinking water. Concentrations in bold exceed their respective MCLs.

1. Recommended/Upper Secondary MCL.
2. Primary MCL.
3. Secondary MCL.

The monitoring wells in close proximity to the ponds also show lower pH and higher concentrations of EC, TDS, TOC, potassium, and Tannin & Lignin compared to up-gradient monitoring wells. Likely due to high concentrations of wood and organic material settling in the ponds.

To minimize the potential for groundwater degradation due to wood and organic debris in the ponds, this Order requires the Discharger to prepare and implement a Solids Management Plan to ensure proper maintenance, clean-out, and disposal of settled solids from the ponds.

Title 27

Title 27 of the California Code of Regulations, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Unless exempt, release of designated waste is subject to full containment pursuant to Title 27 requirements. Title 27, section 20090, subdivision (b) exempts discharges of designated waste to land from Title 27 containment standards and other Title 27 requirements provided the following conditions are met:

- a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;
- b. The discharge is in compliance with the applicable basin plan; and
- c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

The discharge meets the above requirements and is therefore exempt from Title 27.

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order would prohibit discharge of wastewater and storm water from sawmill operations to surface waters and surface water drainage courses. Storm water from other areas of the Facility not covered by this Order are discharged separately under the National Pollutant Discharge Elimination System (NPDES) Industrial Storm Water General Permit.

The proposed Order would require that all conveyance, treatment, storage, and disposal systems be designed constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency, and require that the pH in the Upper and Lower Ponds be maintained between 6.5 and 8.5.

The proposed Order would also include provisions requiring the Discharger to ensure that the disposal area has sufficient capacity to handle wastewater and storm water runoff during a 100-year wet year, document that all runoff controls and procedures are in place and operating, evaluate and reconfigure the Upper Pond to ensure that high groundwater will not intersect the bottom of the pond, and prepare a Solids Management Plan.

The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedance of these objectives or natural background water quality, whichever is greatest, and sets a specific limit for NO₃-N of 10 mg/L consistent with the Primary MCL.

Monitoring Requirements

Section 13267 of the CWC authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code Section 13268 authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes pond, source water, land spreading area, and groundwater monitoring. This monitoring is necessary to evaluate the potential for degradation resulting from the discharge.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.