

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2009-0110  
WASTE DISCHARGE REQUIREMENTS  
FOR  
SIERRA PACIFIC INDUSTRIES—MARTELL DIVISION FACILITY  
CLOSURE, AND POST CLOSURE OPERATION AND  
MAINTENANCE  
AMADOR COUNTY

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

1. Sierra Pacific Industries—Martell Division (hereafter Discharger) owns, or owned, 242 acres of property that includes: a former lumber mill, wood manufacturing operations, a wood waste landfill, an unlined leachate basin, an ash disposal area, and undeveloped land located at the northwest corner of the intersection of Highway 49 and Highway 88 in the town of Martell. The property is located in the North half of Section 19, Township 6 North, Range 11 East Mount Diablo Baseline and Meridian (MDB&M). The facility location is shown on Attachment A, which is attached hereto and made part of this Order by reference.
2. The property was operated as a sawmill from 1941 to 1997. Between 1941 and 1987, the facility was owned and operated by American Forest Products Company, and the wood waste landfill was regulated under Waste Discharge Requirements (WDRs) Order No. 76 212. Georgia-Pacific Corporation purchased the property in 1987, and was regulated under WDRs Order No. 87-120 for the wood waste landfill. Georgia-Pacific informed the Central Valley Water Board in a 13 June 1997 letter that it had sold the property to the Discharger.
3. Presently, the facility consists of: an unlined wood waste landfill covering 25.5 acres, an unlined ash disposal area covering 5.3 acres, an unlined leachate collection basin covering approximately 2 acres, and surface water drainage courses, as shown on Attachment B, which is incorporated herein and made part of this Order by reference. The facility is comprised of Assessor's Parcel Nos. 44-010-123-00 and 44-010-125-00.
4. On 12 December 2008, the Discharger submitted a Report of Waste Discharge (ROWD) for the facility. The information in the ROWD and case file information have been used in writing these WDRs.
5. American Forest Products began lumber milling operations at the facility in 1941. Georgia-Pacific continued milling from 1987 through 1997. In 1972, when burning of excess wood waste was outlawed due to air pollution concerns, American Forest Products began its wood waste landfill operations by filling in a drainage swale with its wood waste. By 1976 American Forest Products was operating an on-site cogeneration facility that consumed most of the wood waste, but still discharged unsuitable wood waste to its wood waste landfill. In 1976, the Central Valley Water Board required American

Forest Products to submit a ROWD for the wood waste landfill and the Board adopted WDR Order 76-212. Subsequently, based on a ROWD submitted by American Forest Products on 24 March 1987, the Central Valley Water Board adopted WDR Order 87-120 that permitted disposal of wood waste into the originally permitted area, and the disposal of ash into cells at a higher elevation than cells containing wood waste.

6. In 1987, the wood waste landfill and the adjacent lumber operations were purchased by Georgia-Pacific from American Forest Products. In its 22 March 1993 Clean Closure Plan, Georgia-Pacific stated that it stopped accepting wood waste in 1987, and intended to clean close the wood waste landfill. Georgia-Pacific implemented clean closure of the wood waste landfill between 1993 and 1997. Subsequently, in March 1997 Georgia-Pacific notified the Central Valley Water Board that ownership had changed to the Discharger, Sierra Pacific Industries. On 1 October 1997, the Discharger submitted a ROWD for the facility. The Central Valley Water Board adopted WDRs Order No. 98-094 on 17 April 1998.
7. The Discharger ceased closure activities in 1997 to evaluate analytical results of samples collected from the ash disposal area.
8. In 2002, the Discharger restarted closure of the wood waste landfill. Between 2002 and 2008, the Discharger reported that it had clean closed 5.3 acres of the 27-acre wood waste landfill. The Discharger states that current closure operations include excavation, sorting, and recycling most of the material as useable products (mulch, cogeneration fuel, gravel, and rock products).
9. Title 27 of the California Code of Regulations (CCR; Title 27) defines leachate as any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. It includes any constituents extracted from the waste and dissolved or suspended in the fluid. During the Discharger's clean closure operations, the working face of the wood waste landfill is open to the environment, and stormwater contacts and leaches through the wood waste. The resulting leachate discharges to an unlined basin. The Discharger has conducted water quality sampling of the leachate and liquids in the leachate basin and some constituents are in concentrations that potentially classify the material as a designated waste, as further described in findings 31 through 38. This Order prohibits designated waste in the unlined leachate basin after 9 October 2011.
10. As stipulated in this Order, the Discharger must complete the closure activities, corrective actions, and must submit reports according to this Order's sections titled "Construction Specifications," "Provisions," and "Time Schedule."

#### **SITE DESCRIPTION**

11. The facility is situated on fractured and weathered rocks of the Logtown Ridge geological formation in Martell, Amador County, California.

12. There are 21 municipal, domestic, industrial, or agricultural supply wells within one mile of the site, as stated in the Discharger's 10 December 2008 *Engineering and Feasibility Study*. A surface spring has been observed adjacent to the southeast side of the ash disposal area. The presence of a seep from the wood waste landfill was confirmed on 3 April 2009 by Amador County's local enforcement agency.
13. Annual average precipitation in the Martell area is approximately 29 inches per year, and the 100-year, 24-hour precipitation event is estimated to be 6.5 inches, as reported by the Discharger in its 12 December 2008 conceptual *Closure Plan—Ash Disposal Area*.
14. Land within 1,000 feet of the site is used for limited residential, agricultural, commercial, and industrial purposes.

### ASH DISPOSAL AREA

15. The ash disposal area, located northeast of the wood waste landfill and in the central area of the facility, was used as a disposal area for ash generated from Georgia-Pacific's Wellons boiler located at its on-site cogeneration plant, and from a suspension burner located within Sierra Pine Limited's particleboard plant. In Georgia-Pacific's 21 June 1990 Report of Disposal Site Information, it stated that ash from the Wellons boiler and the suspension burner was transported and deposited into a dedicated ash monofill consisting of three to five feet deep, 10 feet wide, and 50 feet long (2,500 cubic feet) adjacent piles, which were each covered with one foot of soil. In Table 1 of its Report of Disposal Site Information, Georgia-Pacific stated that the 1990 rate of ash discharge was 620 tons per year (1,000 cubic yards), and that after 1990 the rate was expected to drop to 25 tons per year. The Discharger stated in its 30 September 1997 Report of Waste Discharge that Georgia Pacific had stopped placing ash into the ash disposal area in 1990 when the Wellons boiler was converted to natural gas.
16. In association with the 1997 land transfer to the Discharger, three composite samples of the ash material were obtained at depths of one to ten feet below the top of the ash pile. The samples were analyzed for dioxins/furans and polynuclear aromatic hydrocarbons (PAHs). A weighted value, called a Toxicity Equivalence (TEQ), was calculated for each dioxin sample result. In order to calculate a TEQ, a toxic equivalent factor (TEF) is assigned to each member of the dioxin and dioxin-like compound. The TEF is the ratio of the toxicity of one of the compounds in this category to the toxicity of the two most toxic compounds in the category, which are each assigned a TEF of 1. The most toxic compounds are 2,3,7,8-tetrachlorodibenzo-p-dioxin and 1,2,3,7,8-pentachlorodibenzo-p-dioxin. TEFs that have been established through international agreements currently range from 1 to 0.0001. The TEQ of each sample is calculated by multiplying the actual weight of each dioxin and dioxin-like compound by its corresponding TEF and then summing the results to obtain the TEQ. In its 18 May 1999 Waste Characterization Report, the Discharger reported that dioxins/furans were detected in three ash samples at concentrations of 0.16, 0.28, and 0.4 ug/kg TEQ, each exceeding the EPA Regional Screening Levels (RSL) criteria of 0.018 ug/kg TEQ for industrial soils. In addition, all three ash samples contained concentrations of PAHs.

17. In March 2000, Central Valley Water Board staff reviewed the Discharger's first waste characterization report of the ash waste (submitted on 18 May 1999), determined it incomplete, and directed the Discharger to address staff's comments and resubmit a revised waste characterization report. The Discharger submitted the revised waste characterization report on 1 February 2008. The revised report stated that concentrations of dioxins were detected in all 11 samples of the ash material, all samples were above the RSL for industrial soils, and PAHs were reported in the ash material. The Discharger states that on 10 July 2000, they submitted a conceptual work plan for removal of ash from the ash disposal area. However, the ash was not removed and the ash disposal area is not closed.
18. Based on the analytical results presented in the Discharger's second waste characterization report, historical groundwater monitoring data, and the Discharger's *Evaluation Monitoring Program Report*, the Central Valley Water Board staff concluded that the ash material was appropriately classified as a designated waste. All samples of the ash material (from 1997 and from 2007) exceed the RSLs of 0.018 ug/kg TEQ for industrial soils. The TEQ concentrations in ash ranged from 0.044 to 0.683 ug/kg. Further, dioxins and inorganics in the ash material have impacted groundwater. Groundwater monitoring well B-5, located downgradient of the ash disposal area, has a TEQ concentration that exceeds the water quality objective of 0.27 picograms per liter (pg/l). The TEQ concentration was 0.746 pg/l in January 2007.
19. In its *Evaluation Monitoring Report*, the Discharger provided data that show groundwater downgradient of the ash disposal area has been impacted by elevated concentrations of calcium, magnesium, bicarbonate, and total dissolved solids. According to Section §13173 of the Porter-Cologne Water Quality Control Act and in Title 23 of the California Code of Regulations, Subchapter 15, Section 2522, a designated waste is defined as a "*Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan.*" Based on the elevated groundwater analytical results for TEQ, calcium, magnesium, bicarbonate, and total dissolved solids (TDS) in groundwater downgradient of the ash disposal area, the ash disposal area has released TEQ and inorganic constituent concentrations to groundwater that exceed the water quality criteria. Therefore, the ash material is appropriately classified as a designated waste.
20. In 2007 at the request of Amador County's Local Enforcement Agency, portions of the ash disposal area were covered with soil obtained from an on-site borrow source located at the former cogeneration fuel stockpile area. The Discharger placed and compacted at least 1 foot of material along the southeast edge of the ash disposal area, and reseeded this soil to mitigate erosion.

21. This Order requires the Discharger to provide, and document, that a separation is maintained at all times between the bottom of the ash material and the high groundwater elevation.
22. On 12 December 2008, the Discharger submitted a conceptual closure plan for the ash disposal area. On 7 February 2009 the Discharger submitted additional draft engineering drawings. The closure plan includes capping the area with an engineered alternative; diverting, repairing, and upgrading the drainage courses; and installing interceptor drains to maintain the minimum clearance between the bottom of the waste and the top of the shallow groundwater. This Order requires that the Discharger submit a one hundred percent final closure plan, a construction quality assurance plan for closure, a final post-closure operation and maintenance plan for the ash disposal area, and a construction quality assurance report. These plans and reports must incorporate the closure requirements in Title 27 and this Order.
23. A natural surface water drainage course originated at the ash disposal area, and formerly discharged into the leachate basin. Sediment samples were obtained from this drainage course in November 2007. These samples had concentrations of dioxin/furans and PAHs. The Discharger proposed to leave the sediments in place, as presented in its 29 April 2009 Final Corrective Action Plan, but did not address the risk to human health and the environment in its proposal. Also, the Discharger's proposed plan to leave the sediments in place has not been reviewed by the California Department of Fish and Game (CDFG). This Order requires that the Discharger submit its proposed plan and analytical results to the CDFG. Upon the review of the proposed plan and analytical results by the CDFG, this Order requires that the Discharger submit and complete any site investigation and remediation work required by the CDFG. The Discharger must submit its plans and reports to the CDFG according to section **F., Provisions, time schedule**, of this Order..
24. A second unlined surface water drainage course adjoins the northern, eastern, and western edges of the ash disposal area. Surface water from this unlined ditch may be infiltrating into the ash disposal area. The Discharger reports that drainage from this course was rerouted to the south of the ash disposal area on 19 June 2009.
25. A spring is located adjacent to the southeastern edge of the ash disposal area. Water from this spring may be infiltrating into the ash disposal area.

#### **WOOD WASTE LANDFILL**

26. The wood waste landfill, located along the southern boundary of the site, was used by the former operators to dispose of wood waste, bark, and slash from the log decks that contained too much dirt and debris to be used as fuel in the on-site cogeneration plant. Additionally, wood waste generated off-site, consisting of pallets, scrap lumber, and residential yard waste, was accepted from the general public for disposal in the wood waste landfill.

27. After the Discharger restarted closure operations in 2002, the average rate of wood waste extraction and removal has been 53,800 cubic yards per year. In 2007 and 2008, the Discharger clean closed approximately 3.8 acres and 1.5 acres, respectively, and performed confirmation sampling and inspections to document that the wood waste was removed down to native soil. During 2008, approximately 25,109 tons of material was excavated and shipped off-site from the wood waste landfill.
28. The Discharger is presently performing clean closure of the wood waste landfill under WDR 98-094, the 22 March 1993 Clean Closure Plan, and the addendum to the 1993 Clean Closure Plan.
29. The Discharger submitted a second addendum to the 1993 clean closure plan on 30 April 2009.
30. The completion date for clean closure of the wood waste landfill must be as required in the time schedule of **Section F. Provisions** of this Order.
31. This Order requires that the Discharger submit its 2007 topographic map (obtained via aerial photogrammetry) of the site as a baseline for the volume of wood waste remaining at the site in 2007. The map must be stamped and signed by a California Licensed Land Surveyor or Civil Engineer licensed to perform land surveying. The topographic map must be submitted according to the time schedule of **Section F. Provisions** of this Order.

#### UNLINED LEACHATE BASIN

32. The leachate basin is located adjacent to the northwest toe of the wood waste landfill and downgradient of the ash disposal area. At its deepest point, the leachate basin is approximately 12 feet deep. Historically, but not currently, the Discharger pumped the leachate basin liquids to a Sierra Pacific Industries' subsidiary, Sierra Pine Limited.
33. A seep is located along the northwestern toe of the wood waste landfill and near groundwater monitoring well B-3.
34. Leachate from the wood waste landfill, run-off from the ash disposal area, and sediment from the ash disposal area have discharged into the leachate basin. The Discharger states that currently only leachate, seeps, and runoff from the wood waste landfill discharge into the leachate basin.
35. Groundwater monitoring well B-14, a Point of Compliance well for the leachate basin, is hydraulically downgradient of the leachate basin, and extends through the uppermost aquifer. Well B-14 may be in hydraulic communication with the leachate basin.
36. When rainwater contacts the open face of the wood waste landfill, a solution (leachate) is formed that contains soluble materials extracted from the wood waste. In June 2007, the leachate contained concentrations of arsenic (4.97 ug/l), and manganese (2,510 ug/l), well above the California Public Health Goal of 0.004 ug/l for arsenic and above the

California Secondary Maximum Contaminant Level (MCL) of 50 ug/l for manganese. In January 2008, samples from monitoring well B-14 contained concentrations of arsenic at 7.9 ug/l (an estimated concentration as reported by the laboratory) and manganese at 3,100 ug/l.

37. The liquids in the leachate basin may have impacted groundwater at the Point of Compliance, monitoring well B-14. Sampling results from well B-14 obtained on 23 January and 10 April 2008 demonstrate that the groundwater monitored by this well has been impacted, and the probable sources are the ash disposal area and the leachate basin. In particular, the following concentrations were reported for well B-14:
- a. **PAHs** are reported at the following concentrations, as detected above the laboratory method detection limit and below its practical quantitation limit:
    - i. Acenaphthene 0.0041 ug/l
    - ii. Acenaphthylene 0.010 ug/l
    - iii. Anthracene 0.077 ug/l
    - iv. Fluoranthene 0.017 ug/l
    - v. Fluorene 0.0061 ug/l
- These PAHs constituents are also components of the ash disposal area.
- b. **Manganese** concentration at well B-14 is reported at 3.1 milligrams per liter (mg/l). Manganese concentrations in water samples from the leachate basin were 2.51 mg/l. Both samples are above the California Secondary MCL of 0.050 mg/l. In addition, both samples are an order of magnitude above historical background concentrations, and may indicate hydraulic connectivity between the leachate basin and the B-14 aquifer.
  - c. **TDS** concentration from well B-14 is reported as 869 mg/l, above the California and USEPA Secondary MCL of 500 mg/l.
  - d. **Electrical Conductivity** at well B-14 is reported as 1,060 umhos/cm, above the Agricultural Water Quality goal of 700 umhos/cm.
  - e. **Iron** concentration at well B-14 is 9.5 mg/l, above the California Secondary MCL of 0.3 mg/l.
  - f. **Arsenic** concentration at well B-14 of 0.0079 mg/l, is similar to the leachate basin arsenic concentration of 0.00497 mg/l. Both levels exceed the California Public Health goal of  $4.1 \times 10^{-6}$  mg/l.
38. Sediment samples obtained on 29 November 2007, and analyzed for leachate extracted with a citrate buffer had concentrations of dioxin/furans ranging from  $2.9 \times 10^{-5}$  ug/l to 0.0023 ug/l, however the TEQ for TCDD was less than the water quality criteria of 0.000001 ug/l.

39. In its 30 April 2009 Final Corrective Action Plan, the Discharger compared the dioxin contaminant concentrations in the leachate basin sediments to several criteria. This Order requires that the Discharger submit its analytical results and its proposed plan to leave the leachate sediments in-place to the CDFG. If required by the CDFG, this Order will require that the Discharger provide site investigation and cleanup plans to the CDFG and the Regional Water Board. The Discharger must submit its analytical results, its proposed plan to leave the leachate sediments in-place, and any additionally CDFG-required plans and reports according to the time schedule in section **F., Provisions**, of this Order.

### **SURFACE WATER AND GROUNDWATER CONDITIONS**

40. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
41. The facility lies at the head of the drainage basin to Rock Creek, a tributary of the Sacramento-San Joaquin Delta. Surface drainage from the wood waste landfill, the ash disposal area, and the leachate basin is toward Rock Creek. The beneficial uses for the Sacramento-San Joaquin Delta are municipal and domestic supply, agricultural supply, industrial process supply, hydropower generation, water contact recreation, non-contact water recreation, cold freshwater habitat, spawning, reproduction and/or early development, and wildlife habitat.
42. The first encountered groundwater ranges from 3 to 58 feet below the native ground surface, with the shallowest groundwater near the ash disposal area and the deepest first groundwater located to the southwest of the wood waste landfill. Groundwater elevations range from 1,344 to 1,522 feet above mean sea level (MSL). The depth to groundwater fluctuates seasonally as much as five feet.
43. According to the 2009 First Quarter Monitoring Report, the direction of shallow groundwater flow is generally to the southwest at an average gradient of 2.5 to 6.3 percent and a velocity of 155–380 feet per year. According to the October 1986 Initiation of Groundwater Monitoring Program, southeast of the landfill, the groundwater surface dips to the south at an average gradient of 9 percent and a southerly groundwater velocity ranging from 60–540 feet per year.

### **GROUNDWATER AND UNSATURATED ZONE MONITORING**

44. The groundwater monitoring system includes wells: B-1, B-2, B-3, B-5, B-6R, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, and LD-2A, as shown on Attachment B. In addition, groundwater elevations are monitored at five piezometers installed through the ash material at the ash disposal area.
45. The leachate basin may be in hydraulic communication with the uppermost shallow aquifer at monitoring well B-14, as described in finding 35.

46. The Discharger's detection monitoring systems at the ash disposal area, leachate basin, and wood waste landfill meet the requirements contained in Title 27.
47. There are no unsaturated zone monitoring wells at the facility. In April 2009, the Discharger installed five temporary piezometers at the ash disposal area to obtain and evaluate the depth to groundwater within the waste. This was done in order to design interceptor drains associated with closure of the ash disposal area. This Order requires the Discharger to design and install interceptor drains or other Central Valley Water Board-approved engineering mechanisms, and/or provide physical separation or removal of the waste material, in order to maintain separation between groundwater and the bottom of the waste.
48. Volatile organic compounds (VOCs), PAHs and dioxin/furans are organic waste constituents that may be detected in groundwater at this site. Since most of these organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the evaluation of a release of wastes from the ash disposal area, wood waste landfill, and the leachate collection basin.
49. Title 27 Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 Section 20415(b)(1)(B)2-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
50. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27 Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Central Valley Water Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
51. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
52. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for evaluating if there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Specifically and limited to dioxins and furans, the specified non-statistical method for evaluation of dioxin and furan monitoring data is the presence of two or more dioxin or furan constituents above its respective minimum level as described in EPA Method 1613B. Following an indication of a release, verification testing will be conducted to assess whether there has been a release from the Unit, or if there is a source of the detected constituents other than the landfill, or if the detection

was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL, as a trigger, is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL.

### **GROUNDWATER DEGRADATION AND CORRECTIVE ACTION**

53. Groundwater has been degraded by inorganic and organic waste constituents at this site, including elevated concentrations of TDS, arsenic, bicarbonate, calcium, chemical oxygen demand (COD), iron, manganese, magnesium, bicarbonate, tannins and lignins. Concentrations of PAHs and dioxin/furans have also been detected sporadically in groundwater.
54. The Discharger's Evaluation Monitoring Program report submitted on 2 June 2009 identified pollutant releases to groundwater from the ash disposal area, wood waste landfill, and leachate basin. The Central Valley Water Board has identified the following constituents as part of these releases:
  - a. Total dissolved solids,
  - b. Arsenic,
  - c. Calcium,
  - d. Manganese,
  - e. Magnesium,
  - f. Bicarbonate,
  - h. Tannins and lignins,
  - j. Chemical oxygen demand,
  - k. Electrical conductivity, and
  - m. Iron

### **WASTE CLASSIFICATION**

55. The material within the ash disposal area has been classified as a designated waste as described in findings 16 through 18.
56. The liquids in the leachate basin have been classified as a designated waste due to concentrations of arsenic, manganese, TDS, electrical conductivity, and iron detected in the leachate basin and in its Point of Compliance groundwater monitoring well B-14.
57. Because the ash disposal area, wood waste landfill, and leachate basin pose a significant threat to water quality, the Discharger must close these units in accordance with Title 27.

### PROPOSED CLOSURE OF ASH DISPOSAL AREA

58. The Discharger states that the unlined northern stormwater ditch on the northeastern and northwestern boundaries of the ash disposal area has been rerouted to prevent infiltration of surface water into the ash disposal area.
59. The Discharger proposes a detection monitoring network of piezometers and groundwater monitoring wells to be installed within and around the perimeter of the ash disposal area in order to monitor the effectiveness of the ash disposal area cover and to monitor the depth to groundwater beneath the landfill.
60. The Discharger states that the objectives of its proposed corrective action are to:
  - a. Isolate buried wastes,
  - b. Prevent accumulation of standing water,
  - c. Provide proper drainage to direct surface runoff away from the disposal area,
  - d. Limit surface water infiltration into the waste, and
  - e. Limit surface erosion of the waste due to rainfall or wind.

The Discharger's proposed corrective action method for the ash disposal area does not include groundwater containment or ex-situ water treatment.

61. The Discharger proposes deed restrictions at the ash disposal area property to preclude actions that would cause or contribute to negative water quality impacts.
62. On 12 December 2008, the Discharger submitted a conceptual *Closure Plan—Former Ash Disposal Area* requesting approval of an engineered alternative to the prescriptive standard requirements.

The Discharger's proposed engineered alternative for the top deck consists of, from the top down:

- a. 3 inches of asphalt;
- b. 1 foot of base rock;
- c. 10-ounce non-woven geotextile filter fabric or equivalent;
- d. A textured 50-mil linear low density polyethylene (LLDPE) Super Gripnet membrane liner with an integral drainage layer; and
- e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.

The Discharger's proposed engineered alternative for the side-slopes includes a vegetative cover with slopes not to exceed a 3:1 grade, consisting from top to bottom:

- a. Vegetative cover of native grasses seeded at a rate of 34.5 pounds per acre;
- b. 1-foot cover soil;
- c. 10-ounce non-woven geotextile filter fabric or equivalent;

- d. A textured 50-mil LLDPE Super Gripnet geomembrane liner with integral drainage layer, or equivalent; and
  - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.
63. Section 20080(b) of Title 27 allows the Regional Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative(s) provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.
64. The Discharger must also demonstrate that any proposed engineered alternative is consistent with the performance goal in accordance with Sections 20240, 20250, and 20310 of Title 27.
65. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
66. The Discharger proposes a cover system which will be designed, constructed, and operated to minimize the migration of stormwater through the waste in accordance with the criteria set forth in Title 27 for a Class II waste management unit.
67. The Discharger has adequately demonstrated that construction of the cover according to the prescriptive standard for Class II landfill, as described in Title 27 would be unreasonable and unnecessarily burdensome, when compared to the proposed engineered alternative design. The Discharger has demonstrated that the proposed engineered alternative is consistent with the performance goals of the containment structures for a Class II waste management unit, and affords equivalent protection against water quality impairment.
68. Construction must proceed only after all applicable construction quality assurance plans and final post-closure maintenance plans have been approved by the Executive Officer.

#### **DISCHARGER'S PROPOSED CLOSURE OF THE WOOD WASTE LANDFILL**

69. The ROWD from the Discharger has identified the continuation of the clean closure as the proposed corrective action for the wood waste landfill. This is consistent with the mandatory clean-closure per Title 27 section 21410(a)(1) and WDRs 98-094. The Discharger proposes multiple years of clean closure to excavate and process the

remaining wood waste and associated soils. Each year, prior to the rainy season an additional portion of landfill may or may not be verified clean closed.

70. The Discharger proposes for the wood waste now remaining in the landfill to be excavated and processed for reuse. At the end of each dry season, all or some of the area from which wood waste has been removed that year will be clean closed, graded and hydroseeded to prepare the surface for winter rains. Storm water that contacts the remaining wood waste area will be collected in unlined drainage ditches and routed to the unlined leachate basin. Storm water runoff from the clean closed area will be routed to a drainage ditch that traverses around the leachate basin and dischargers directly into the tributary to Rock Creek. Water collected in the leachate basin will be used for on-site dust control, in wood waste processing, and/or site irrigation. At the completion of clean closure of the wood waste landfill, the Discharger will sample and leave in place the leachate basin sediments, if appropriate, pending the Discharger's evaluation of and the Central Valley Water Board's concurrence with the sediment analytical results.

### **CEQA AND OTHER CONSIDERATIONS**

71. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, Section 15301.
72. Section 13267(b) of the California Water Code provides that: *“ In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge within its region, or any citizen domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”*
73. Technical reports required by this Order and the attached MRP are necessary to assure compliance with these WDRs. The Discharger owns and operates the facility that discharges the waste subject to this Order.
74. This order implements:
  - a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;*

- b. The prescriptive standards and performance goals of Title 27, effective 18 July 1997, and subsequent revisions;
- c. The attainment of water quality per State Water Board Resolution 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Section 13304 of the California Water Code*; and
- d. State Water Board Resolution 68-16, the *Policy with Respect to Maintaining High Quality Waters of the State*.

### PROCEDURAL REQUIREMENTS

- 75. All of the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.
- 76. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
- 77. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for post closure maintenance of the former surface impoundments, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
- 78. The Central Valley Water Board, in a public meeting, has heard and considered all comments pertaining to the discharge.
- 79. Any Person affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, CCR. The petition must be received by the State Water Resources Control Board at:

Office of Chief Counsel,  
P.O. Box 100  
Sacramento, California  
95812,

within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at [http://www.waterboards.ca.gov/water\\_laws/index.html](http://www.waterboards.ca.gov/water_laws/index.html) and will be provided on request.

**IT IS HEREBY ORDERED** that pursuant to Sections 13263 and 13267 of the California Water Code that Sierra Pacific Industries—Martel Division, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

## A. PROHIBITIONS

1. The transfer of liquids from the landfill leachate basin to Sierra Pine Limited is prohibited.
2. After 9 October 2011 designated waste in the leachate basin is prohibited. Designated waste in the leachate basin after 9 October 2011 may result in an enforcement action.
3. The discharge of designated waste to the wood waste landfill is prohibited.
4. The discharge of waste from the landfill leachate basin to surface water is prohibited.
5. The discharge of 'hazardous waste' at this facility is prohibited. The discharge of "designated waste" at this facility is prohibited, except as allowed by Section A.2, Prohibitions, of this Order. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Division 2 of Title 27 of the CCR.
6. The discharge of solid waste, leachate, or liquid waste to surface waters, surface water drainage courses, or groundwater is prohibited. Untreated leachate is allowed only at a location upstream of the Best Management Practices in the unlined drainage channel that discharges to the leachate basin.
7. The discharge of waste to the ash disposal area or wood waste landfill is prohibited.
8. The discharge of liquid or semi-solid wastes, or solid wastes containing free liquid or moisture in excess of the moisture holding capacity of the waste is prohibited.
9. The clean closure operation footprint at the wood waste landfill must not exceed seven acres during the yearly rainy season from 30 October to 15 April.

## B. DISCHARGE SPECIFICATIONS

1. The waste management units (wood waste landfill, ash disposal area, and leachate basin) shall be maintained to prevent inundation or washout due to flooding events with a 100-year return period.
2. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
3. Annually, prior to **15 October**, any necessary erosion control measures shall be implemented. Any depressions, potholes, tire tracks, rills, or other blemishes in the wood waste landfill and ash disposal area covers that may retain water must be

repaired. If necessary, these area covers must be re-graded and the vegetation reestablished in order to shed storm water. Any other construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

### C. RECEIVING WATER LIMITATIONS

#### Water Quality Protection Standards

The concentrations of Constituents of Concern in waters passing through each unit's Point of Compliance shall not exceed the Concentration Limits established for each constituent of concern at each monitoring point (i.e., for each monitoring point/constituent of concern pair) pursuant to Monitoring and Reporting Program Order R5-2009-0110, which is attached to and made part of this Order by reference.

### D. FINANCIAL ASSURANCE

1. The Discharger shall demonstrate financial responsibility for initiating and completing corrective action of all known or reasonably foreseeable releases, and shall submit a report for financial assurances by **April 30th each year** to the Executive Officer for review and approval. The assurances of financial responsibility shall name the Central Valley Water Board as beneficiary and shall provide that funds for corrective action shall be made available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation as well as any changes in facility design, construction, or operation
2. The Discharger shall demonstrate financial responsibility for closure and post-closure maintenance, and shall submit a report of financial assurances by **April 30th each year** to the Executive Officer for review and approval. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. Financial assurance must also include provisions for the cost of closure in-place, as an option, as stated in **Section E.20 Construction Specifications**. The Discharger shall adjust the cost annually to account for inflation as well as any changes in facility design, construction, or operation.
3. The Discharger shall, by **30 April of each year**, submit for approval by the Executive Officer, plans with detailed cost estimates for corrective action for all known or reasonably foreseeable releases, closure, and post-closure maintenance of each waste management unit in accordance with its approved closure and post-closure maintenance plans. The cost estimate must include closure in place as an option as stated in Section E.20 Construction Specifications. The Discharger must

adjust the cost estimate annually to account for inflation as well as any changes in facility design, construction, or operation.

## **E. CONSTRUCTION SPECIFICATIONS**

### **Closure of the Ash Disposal Area**

1. **Prior to construction**, the Discharger must submit to the Central Valley Water Board staff for review and approval the 100 percent design plans and specifications for closure of the ash disposal area. Construction may proceed only after all applicable construction quality assurance plans have been approved. The 100 percent design plans and specifications must include the following:
  - a. A complete Construction Quality Assurance Plan meeting the requirements of Title 27 Section 20324; and
  - b. A Final Post-Closure Maintenance and Monitoring Plan meeting the requirements of Title 27.
2. An electronic leak detection test must be performed on the cover of the ash disposal area, and a report documenting the results must be submitted in the Discharger's Construction Quality Assurance Report.
3. A third party independent of both the Discharger and the construction contractor must perform all of the construction quality assurance monitoring and testing during the construction of any cover system.
4. The cover of the ash disposal area top deck must consist of from the top down:
  - a. 3 inches of asphalt;
  - b. 1 foot of base rock;
  - c. 10-ounce non-woven geotextile filter fabric or equivalent;
  - d. A textured 50-mil LLDPE Super Gripnet membrane liner with an integral drainage layer or equivalent; and
  - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.
5. The ash disposal area side slopes must consist of from the top down:
  - a. Vegetative cover of native grasses seeded at a rate of 34.5 pounds per acre;
  - b. 1 foot of cover soil;
  - c. 10-ounce non-woven geotextile filter fabric or equivalent;
  - d. A texture 50 ml LLDPE Super Gripnet geomembrane liner with integral drainage layer or equivalent; and
  - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.

6. The unlined surface water drainage channel on the north, east, and western boundaries of the ash disposal area must be lined and/or rerouted to prevent infiltration of surface water into the ash disposal area.
7. The Discharger must install and maintain a detection monitoring network of piezometers and groundwater monitoring wells within and around the perimeter of the ash disposal area in order to monitor the effectiveness of the cap and to monitor the depth to groundwater beneath the cap.
8. The groundwater elevation must be monitored and maintained to provide a separation between the bottom of the ash material and the high groundwater elevation. Maintaining this separation includes, but is not limited to, properly draining the spring located adjacent to the ash disposal area, controlling intrusion of surface water, controlling intrusion of groundwater into the ash disposal area, transferring the waste out of the groundwater intrusion zone, and/or other mechanical means to physically separate the waste from the groundwater.
9. In order to prevent infiltration of stormwater, the existing stormwater diversion ditch located to the north-northwest (up gradient) of the ash disposal area shall be backfilled and covered with the engineered cover described in **Section E.4, Construction Specifications**.
10. A new drainage system shall be installed to the east-southeast (down gradient) of the ash disposal area. This drainage shall receive the inflow from runoff entering from offsite, and shall be routed to the south of the ash disposal area.
11. A groundwater interception drains shall be installed around the northern, eastern, and southern boundaries of the ash disposal area, pending review and approval of the June 2010 report. The drain shall extend vertically to a depth that will drain groundwater below the level of the bottom of the waste.
12. Prior to construction, five piezometers shall be installed within the ash disposal area to monitor groundwater levels.
13. Storm water runoff from the asphalt surface of the cover described in **Section E.4, Construction Specifications** shall be routed to the southwest corner of the site. Storm water will enter a dissipation structure or sump before discharging through a flume downdrain into the remnant of the existing drainage ditch beginning at the southwest corner of the site, and will flow around (north) of the leachate basin.
14. The closure of the ash disposal area shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.
15. The Discharger must provide evidence of deed restrictions for the ash disposal area property to preclude actions that would cause or contribute to negative water quality impacts.

### **Closure of the Wood Waste Landfill and Leachate Basin**

16. The wood waste landfill and the leachate basin must be clean closed according to the time schedule in **Section F., Provisions** of this Order.
17. The Discharger must perform and submit the results of an initial survey that documents the remaining volume of wood waste in the wood waste landfill. Submittal of the initial survey results must be reported as shown in the time schedule of **Section F., Provisions** of this Order.
18. The Discharger must extract and transport off-site a minimum of 40,000-cubic yards of wood waste each calendar year. A three-year moving average of extraction and off-site transport of wood waste must be a minimum of 55,000 cubic yards per year.
19. Beginning in 2010, the Discharger must perform a topographic survey of the wood waste landfill every three years that documents the volume of wood waste remaining in the landfill. The 2007 topographic map may be used as a baseline. The topographic maps must be stamped and signed by a California licensed Land Surveyor or Civil Engineer licensed to perform land surveying.
20. At final closure of the wood waste landfill and leachate basin, all residual wastes, including liquids, sludge, precipitates, settled solids, and liner materials and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to a waste management unit approved by Central Valley Water Board staff. If after reasonable attempts the Discharger demonstrates that the removal of all remaining contamination is infeasible, the wood waste landfill shall be closed as a landfill no later than 31 December 2020.
21. From 9 October 2009 to 9 October 2011, the total dissolved solids (TDS) in the leachate basin shall not exceed a monthly average of 650 mg/L, and no individual TDS sample shall exceed 750 mg/L, the monthly average for iron concentration shall not exceed 300 mg/L, and the monthly average for manganese concentration shall not exceed 50 mg/L. For field testing of the TDS, the conversion factor from EC to TDS must be submitted to and approved by the Regional Water Board. After 9 October 2011, the TDS must not exceed 500 mg/L or the background value as determined from monitoring well B-9, whichever is higher, and as approved by the Regional Water Board.
22. The closure of the wood waste landfill and leachate basin shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

23. A final verification of clean closure report for the wood waste landfill and the leachate basin must be submitted according to the time schedule in **Section F., Provisions** of this Order.

## **F. PROVISIONS**

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory personnel.
2. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated September 2003, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these WDRs.
3. The Discharger must comply with Monitoring and Reporting Program Order R5-2009-0110, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring groundwater throughout the post-closure maintenance period. A violation of Monitoring and Reporting Program Order R5-2009-0110 is a violation of these WDRs.
4. The Discharger has the continuing responsibility to assure protection of waters of the state from discharged wastes, seeps, gases, and leachate generated by discharged waste during the closure and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
5. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.
6. The Discharger must comply with all local permitting requirements.
7. The Discharger must comply with all conditions of this Order including timely submittal of technical and monitoring reports as directed by the Central Valley Water Board's Executive Officer. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action, imposition of civil monetary liability, or revision or rescission of this Order.
8. All reports and transmittal letters shall be signed by persons identified below:
  - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor.

- c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected or appointed official.
- d. A duly authorized representative of a person designated in a, b, or c above if:
  - i. The authorization is made in writing by a person described in a, b, or c of this provision;
  - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
  - iii. The written authorization is submitted to the Central Valley Water Board.
- e. Any person signing a document under this Section shall make the following certification:

*“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”*

- 9. In accordance with the California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and stamp of the seal.
- 10. In the event of any change in control or ownership of the facility, the Discharger must 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 as Discharger 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 telephone number of the persons responsible for contact with the Central Valley Water Board; and a signatory statement. The signatory statement shall comply with the signatory paragraph of the Standard Provisions, and shall 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 by the Executive Officer.

11. The Discharger shall complete the tasks contained in these WDRs in accordance with the following **Time Schedule**.

#### **TIME SCHEDULE**

- a. By **30 November 2009**, the Discharger must submit a water balance report that includes the wood waste landfill, the ash disposal area, and the leachate basin.
- b. By **30 March 2010**, the Discharger must submit to the CDFG and Regional Water Board its analytical results and plan to leave dioxin and PAH-impacted sediments in-place along the drainage channel to the leachate basin and within the leachate basin. Within 90-days of any directive from the CDFG to submit a site investigation work plan, report, remediation work plan, and remediation report, the Discharger must submit the required report(s) and plan(s) to the CDFG and the Regional Water Board.
- c. By **30 June 2010**, based on data obtained from the five piezometers installed into the ash disposal area, the Discharger must submit an evaluation of the causes and solutions for high groundwater levels beneath the ash disposal area. The evaluation must provide recommendations and a design basis for a system to lower and maintain groundwater levels beneath the ash disposal area, such that Discharger maintains a separation between groundwater and waste.
- d. By **30 November 2010**, the Discharger must submit a final construction design and Construction Quality Assurance/Quality Control Plan for the ash disposal area, and a final post-closure operation and maintenance plan for the ash disposal area.
- e. **In the annual 2010 monitoring report due by 31 January 2011**, the Discharger must submit a topographic survey that documents the volume of wood waste remaining in the wood waste landfill. The survey must be performed, signed, and stamped by a California licensed land surveyor. Thereafter, a topographic map documenting the volume of remaining wood waste must be submitted every third year in the annual monitoring report.
- f. By **31 December 2011**, the Discharger must submit a Construction Quality Assurance Report documenting completion of the Title 27 closure in place of the ash disposal area, including specified cover, drainage system, and monitoring wells for the ash disposal system.
- h. By **31 December 2014**, the Discharger must submit a report evaluating the effectiveness of the ash disposal area closure in achieving reduction of TDS, calcium, magnesium, and other constituent concentrations in groundwater. If the report demonstrates that closure has been effective in reducing

concentrations, and that water quality goals will be reached in a reasonable length of time, the Central Valley Water Board may revise or rescind WDRs for this site. Alternatively, if the report demonstrates that closure has not been effective, further corrective actions will be required.

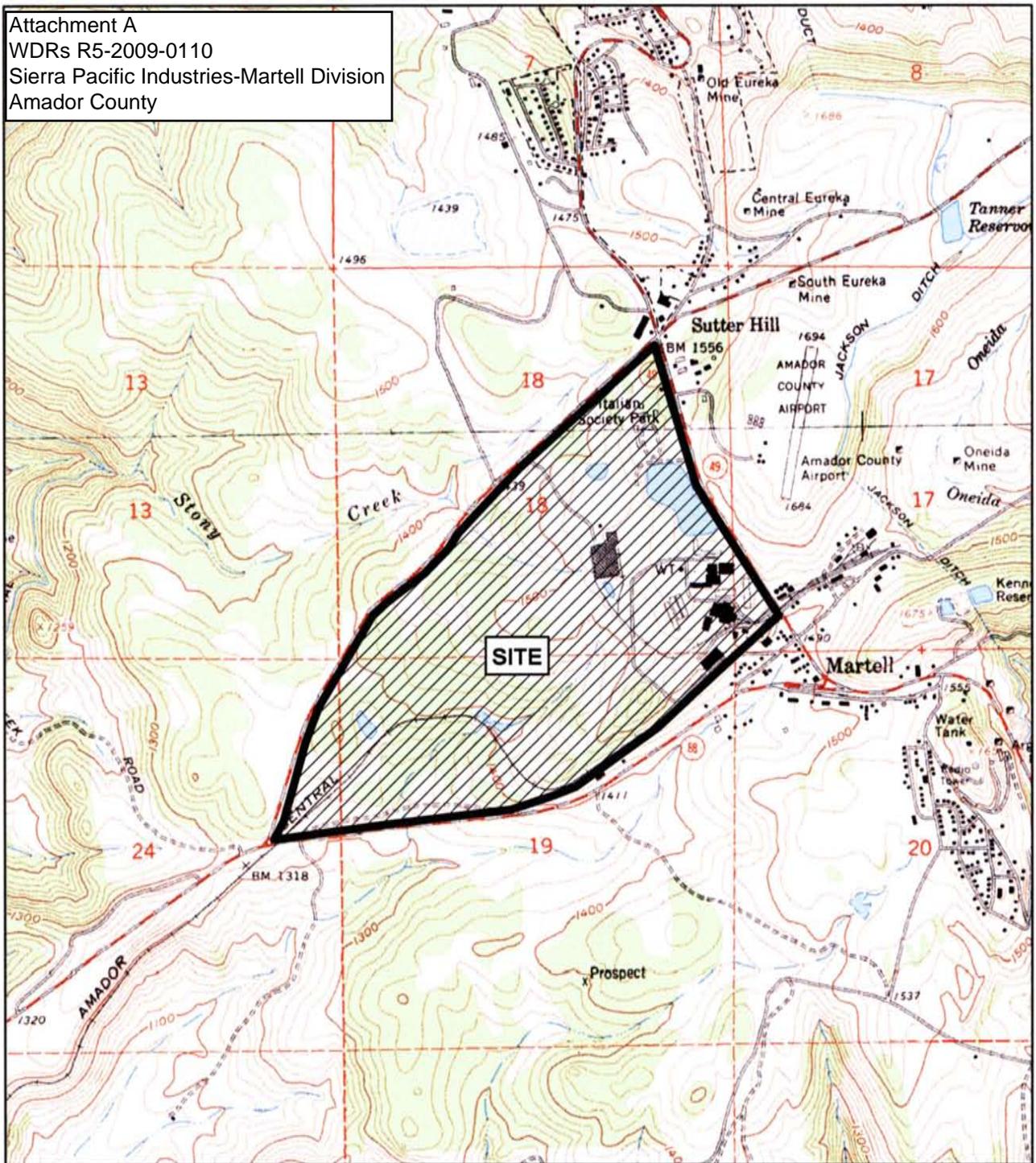
- j. By **31 January 2022**, the Discharger must submit the Verification of Clean Closure Report for the wood waste landfill and the leachate basin.

I, Pamela C. Creedon, 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 8 October 2009.

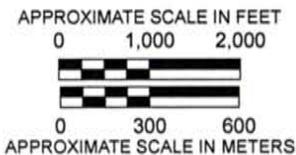
\_\_\_\_\_ original signed by \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

Attachments:  
Attachment A, Site Location Map  
Attachment B, Facility Map and Features

Attachment A  
WDRs R5-2009-0110  
Sierra Pacific Industries-Martell Division  
Amador County



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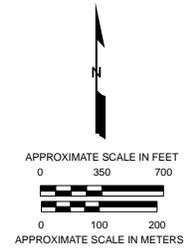


Basemap modified from U.S.G.S. 7.5 minute Amador City and Jackson, California topographic quadrangles.

Attachment A  
Sierra Pacific Industries-Martell Division  
Martell, Amador County

Source: Geomatrix, 19 June 2007

WDRs R5-2009-0110  
 Sierra Pacific Industries - Martell Division  
 Amador County



- Explanation**
- B-2 EXISTING WOOD WASTE LANDFILL MONITORING WELL
  - B-6 DESTROYED MONITORING WELL
  - WQ-1 AMPINE-SIERRAPINE MONITORING WELL
  - D13 DIP TANK AREA MONITORING WELL
  - B-9 EMP MONITORING WELL
  - AP1 EMP SEDIMENT SAMPLE LOCATION
  - SW-1 STORM WATER MONITORING LOCATION
  - GEOLOGIC CONTACT
  - Tm** MEHRTEN FORMATION (Pliocene and Miocene age) - Andesitic gravel and conglomerate.
  - Jlg** LOGTOWN RIDGE FORMATION (Upper Jurassic Age)
  - Jlg** Goat Hill Member - Thinly to thickly interbedded massive volcanic-breccia greenstone (with fine-grained clasts), tuffaceous greenstone, pumiceous-lapilli-tuff greenstone, and minor slate.
  - Jlr** Rabbit Flat Member - Augite porphyry greenstone flows, breccia, and minor bedded tuffaceous greenstone.

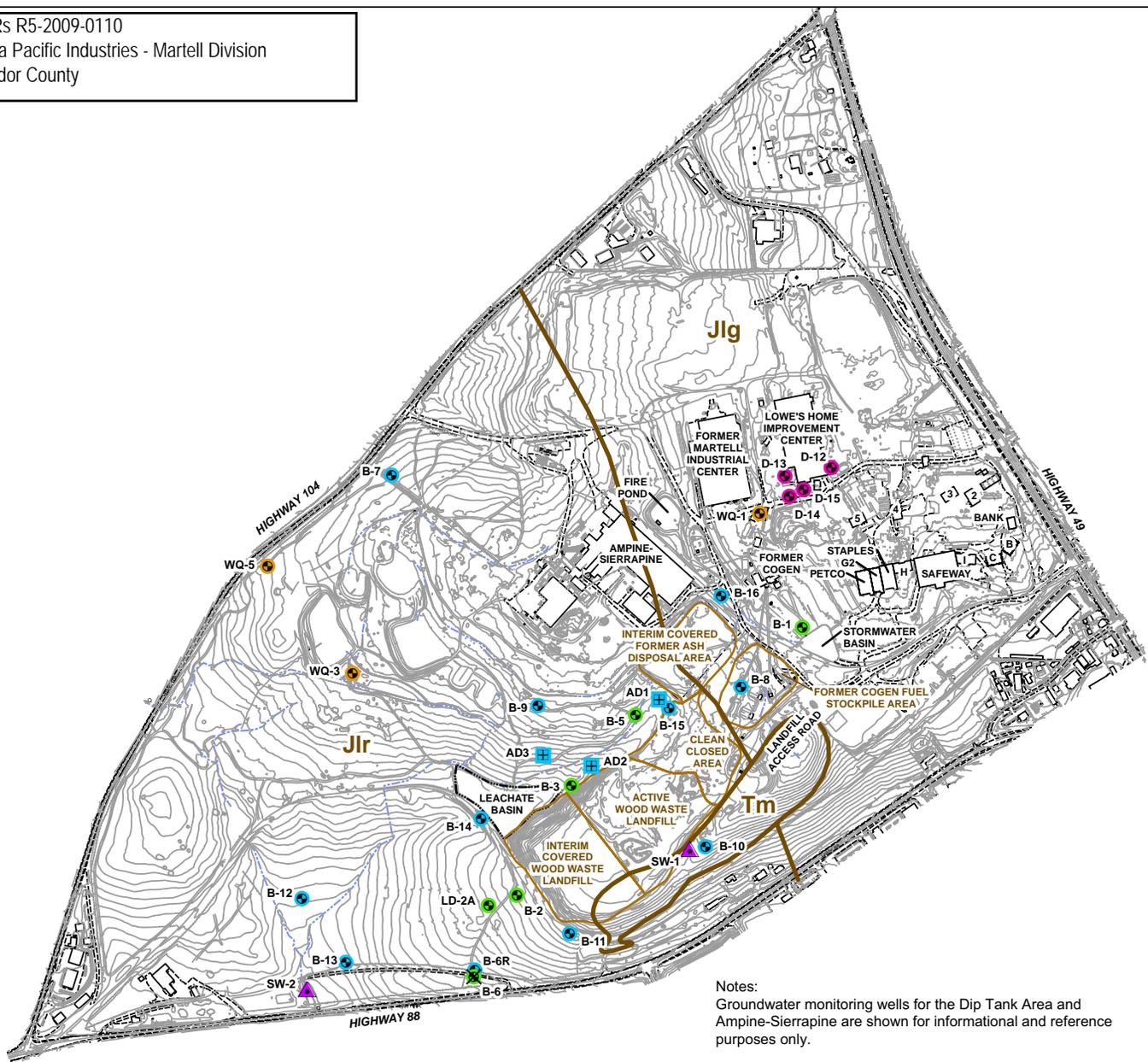
**Note:** Geology from Duffield and Sharp (1975).

Attachment B - Facility Layout  
 Sierra Pacific Industries  
 Martell Division Facility  
 Martell, California

Source: AMEC Geomatrix  
 5 May 2009

Notes:  
 Groundwater monitoring wells for the Dip Tank Area and Ampine-Sierrapine are shown for informational and reference purposes only.

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM ORDER NO. R5-2009-0110  
FOR  
SIERRA PACIFIC INDUSTRIES—MARTELL DIVISION FACILITY  
CLOSURE, AND POST CLOSURE OPERATION AND  
MAINTENANCE  
AMADOR COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a wood waste landfill, an unlined leachate basin associated with the wood waste landfill, an ash disposal area, groundwater, surface water, leachate, and seeps in accordance with the requirements of Waste Discharge Requirements Order R5-2009-0110 (Order). This MRP is issued pursuant to Section 13267 of the California Water Code. Sierra Pacific Industries Inc. (Discharger) shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

The Discharger must comply with this MRP, the *Standard Provisions and Reporting Requirements* dated August 1997 (Standard Provisions), and Waste Discharge Requirements Order No. R5-2009-0110 (WDRs). The Discharger must fully disclose any monitoring, sampling, and analysis performed at this facility as required in the Standard Provisions Section A.8. Failure to comply with this MRP constitutes noncompliance with the Water Code, which can result in the imposition of civil monetary liability.

#### A. MONITORING

The Discharger must conduct all monitoring in accordance with a Sample Collection and Analysis Plan (SAP) acceptable to the Executive Officer, and must include quality assurance and quality control standards as outlined in this MRP, the WDRs, and the Standard Provisions.

Title 27 §20415(e)(15) requires that the groundwater elevation be measured quarterly. The determination of quarterly groundwater elevations must begin **by October 2009**.

Groundwater sampling for field and monitoring parameters required under this MRP must be performed in January and July. All samples must be representative of the volume, nature, or matrix of material sampled. The time, date, and location of each sample must be recorded on the sample chain of custody form. If methods other than U.S. EPA-approved methods or *Standard Methods for the Examination of Water and Wastewater*, latest edition, are used, the exact methodology must be submitted for review and approval. All monitoring points must be sampled and analyzed for parameters and constituents of concern as indicated and listed herein. Unless otherwise approved by the Regional Water Board, any sampling and monitoring results must be reported. All relevant facts must be fully disclosed.

Constituents of Concern subject to monitoring under this MRP are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit (Unit) (i.e., the wood waste landfill, unlined leachate basin, and ash disposal area). The Constituents of Concern are the field and monitoring parameters listed in Tables 1 through 6 for the specified medium and Table 7 for the analytes and analytical methods. All groundwater monitoring wells, leachate basin,

leachate, seeps, and surface water monitoring points must be sampled and analyzed for the Constituents of Concern as indicated in Tables 1 through 6. Required analytes and test methods are listed in Table 7.

Under an evaluation monitoring program established in 2007, the Discharger installed groundwater monitoring wells B-6R, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, and B-16. In addition, in order to monitor the depth of groundwater within the waste at the ash disposal area, the Discharger installed four piezometers with a fifth piezometers scheduled to be installed in the near future: P-1, P-2, P-3, P-4, and P-5. At the completion of eight sampling events, this MRP may be re-evaluated and revised to eliminate the required monitoring of wells B-7, B-8, B-9, B-10, or B-12.

## 1. Monitoring Points

The monitoring system for evaluation, detection, and corrective action for this facility must include the following:

### Monitoring Points

#### Media

#### Location / Identification Number

Groundwater	B-1, B-2, B-3, B-5, B6-R, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, LD-2A; and ash disposal area piezometers P-1, P-2, P-3; P-4, and P-5. Monitoring Well B-9 is the background well for the leachate basin.
Surface Water	Existing locations SW-1 (located adjacent to the open face of the wood waste landfill) and SW-2.
Leachate Basin	Leachate Basin; and
Leachate	Within the drainage course and just before the inlet to the leachate basin.

The Discharger must maintain its storm water monitoring program for industrial activities. The Discharger is regulated under Water Quality Order No. 97-03-DWQ and General Permit No. CAS000001 (General Permit) for Discharges of Storm Water Associated with Industrial Activities, and must submit monitoring data according to the General Permit.

## 2. Groundwater Monitoring

### General

The Discharger must operate and maintain a groundwater monitoring system that complies with this MRP, the Standard Provisions, the WDRs, and a SAP. The Discharger must collect, preserve, transport, and analyze groundwater samples in accordance with a SAP that has been reviewed by, and received concurrence of, the Regional Water Board. Prior to initiating any new sampling, the Discharger must submit an addendum to its SAP to the Regional Water Board staff for review and approval. The monitoring system must be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27.

### **Installation of Any New Wells**

Whenever any new wells (including groundwater, gas, soil vapor, piezometers, and similar) are proposed, the Discharger must submit a monitoring well installation work plan that must include the information required by the Regional Water Board. **60-days after installation**, the Discharger must submit a monitoring well installation report that includes the analytical results and well construction details. The monitoring well installation report must include the information required by the Regional Water Board. Whenever any new wells are installed, such wells must be incorporated into this MRP beginning with the quarter in which such wells are installed.

### **Groundwater Flow Rate and Directions**

The Discharger must determine the groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored pursuant to this MRP. The Discharger states that groundwater monitoring well LD-2A is the only well at this site considered to be in an aquifer deeper than the uppermost aquifer; the groundwater flow rate and direction are not required for LD-2A.

### **Delineation of Extent and Boundaries of Groundwater Contamination**

Currently, the southern extent and boundary of identified releases of contaminants has not been defined. Discharger must install and operate additional monitoring wells to accurately determine southern extent and boundary of contaminant plumes south of State Highway 88. The Monitoring Well Installation Work Plan for this monitoring shall be submitted to the Central Valley Regional Board for review by **30 November 2009**.

### **Sampling and Analysis**

Groundwater samples must be collected from the existing wells and any additional wells or piezometers that may be installed at the facility in the future. Any groundwater sample obtained for monitoring must have a **turbidity of less than 10 NTUs**. For monitoring well B-10, a sample may be obtained when the pH, ORP, and specific conductance are relatively stable.

Samples must be collected and analyzed for the Constituents of Concern in accordance with the methods and frequency specified in the tables of this MRP. Organic Constituents of Concern must be analyzed for "total" concentrations. Filtering of organic samples is prohibited.

Providing that samples are obtained and documented under anoxic conditions, that the samples are obtained first, are immediately preserved and stored, and that a >10 micron polycarbonate membrane-type filter with uniform and sharp size cutoff is used, groundwater samples for metals as defined in Table 7 may be filtered. Pre-washing or conditioning of filters must be routinely performed and documented in the monitoring report. Further, the EPA has documented that there is a strong inverse correlation between turbidity and representativeness of samples, and that samples with the least disturbance (i.e., turbidity) produced the most reproducible samples irrespective of filtration.

The applicable inorganic Constituents of Concern must be evaluated with regards to the

cation/anion balance, and the results must be graphically presented using a Stiff diagram. Samples for the Constituents of Concern specified in Tables 1, 2, and 3 must be collected and analyzed in accordance with the methods listed in Table 7.

<b>Table 1</b>		
<b>Wood Waste Landfill Groundwater Monitoring Program</b>		
<b><u>Wood Waste Landfill Groundwater Monitoring Wells</u></b>		
<b>Wells B-1, B-2, B-3, B-6R, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, and LD-2A.</b>		
<b><u>Field Parameters</u></b>	<b><u>Units</u></b>	<b><u>Frequency</u></b>
Groundwater Elevation	ft. & hundredths, MSL	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	NTU	Semiannual
<b><u>Monitoring Parameters</u></b>	<b><u>Units</u></b>	<b><u>Frequency</u></b>
Total Dissolved Solids	mg/l	Semiannual
Total Suspended Solids	mg/l	Semiannual
Chemical Oxygen Demand	mg/l	Semiannual
General Minerals	mg/l	Semiannual
Dissolved iron and manganese	mg/l	Semiannual
Tannins & Lignins	mg/l	Semiannual
<b>Sample wells B-1, B-2, B-3, B-6R, B-8, B-10, B-11, B-12, B-13, B-14, and LD-2A as follows:</b>		
Dixons and Furans	pg/l	Semi-annual (January and July)
Polynuclear Aromatic Hydrocarbons	ug/l	Semi-annual (January and July)
<b>Sample wells B-7 and B-9 every 5-years</b> beginning in <b>January 2010</b> , and thereafter every 5-years alternating between July and January. <b>The next sampling after January 2010 must occur in July 2015.</b>		
Dixons and Furans	pg/l	5-years, beginning January 2009
Polynuclear Aromatic Hydrocarbons	ug/l	5-years, beginning January 2009

<b>Table 2</b>		
<b>Ash Disposal Area Groundwater Monitoring Program</b>		
<b><u>Ash Disposal Area Groundwater Monitoring Wells and Piezometers</u></b>		
<b>B-5, B-15, B-16 and piezometers P-1, P-2, P-3, P-4, and P-5.</b>		
<b><u>Field Parameters</u></b>	<b><u>Units</u></b>	<b><u>Frequency</u></b>
<b>Wells B-5, B-15, B-16 and piezometers P-1 through P-5</b>		
Groundwater Elevation	ft. & hundredths, MSL	Quarterly
<b>Wells B-5, B-15, and B-16</b>		
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	NTU	Semiannual
<b><u>Monitoring Parameters</u></b>	<b><u>Units</u></b>	<b><u>Frequency</u></b>
<b>Wells B-5, B-15, and B-16</b>		
Total Dissolved Solids	mg/l	Semiannual
Chemical Oxygen Demand	mg/l	Semiannual
General Minerals	mg/l	Semiannual
Dissolved iron and manganese	mg/l	Semiannual
Tannins & Lignins	mg/l	Semiannual
Dixons and Furans	pg/l	Semi-annual
Polynuclear Aromatic Hydrocarbons	ug/l	Semi-annual

### 3. **Wood Waste Landfill Leachate Monitoring**

Title 27 defines leachate as any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. It includes any constituents extracted from the waste and dissolved or suspended in the fluid. At this site, leachate is formed when rainwater contacts the open face of the wood waste landfill. This leachate contains soluble constituents extracted from the wood waste, including elevated concentrations of iron, manganese, calcium, total dissolved solids, and tannins and lignins. The leachate generated at the wood waste landfill traverses down an unlined surface water drainage course and into an unlined leachate collection basin. The Discharger must sample this leachate just before the inlet into the leachate collection basin.

Leachate samples must be obtained during the wet season that is defined as 1 October—30 April. Samples must be obtained during the first storm event, and a minimum of five additional storm events of the wet season that produces discharge into the drainage course with sufficient volume to obtain a sample.

Failure to obtain these samples is a violation of this Order. Samples must be collected, analyzed, and reported for the Constituents of Concern for all monitoring points assigned to the wood waste landfill leachate monitoring program in accordance with the methods and frequency specified in Table 3.

**Table 3  
 Wood Waste Landfill Leachate Monitoring Program**

**Wood Waste Landfill Leachate Sampling Locations**

The sample location must be within the drainage course and just before the inlet into the leachate collection basin.

**Field Parameters**

Temperature	°C
Specific Conductance	µmhos/cm
pH	pH units
TDS	mg/l

**Monitoring Frequency**

Once during the first storm event of the season, and a minimum of five additional times during the wet season.

**Monitoring Parameters**

Total Dissolved Solids	mg/l
Total Suspended Solids	mg/l
Chemical Oxygen Demand	mg/l
Dissolved metals	mg/l
General minerals	mg/l
Tannins and Lignins	mg/l

**Monitoring Frequency**

Once during the first storm event and once during any other storm event of the season that produces discharge into the drainage course.

**4. Surface Water Monitoring**

All surface water monitoring parameters must be analyzed for total concentrations, including organic and inorganic constituents. The Discharger must sample and analyze surface water at monitoring locations SW-1 and SW-2. Each surface water location must be sampled for two events **during the first hour of discharge during regular business hours** from:

- (1) The first storm event of the wet season, and
- (2) At least one other storm event in the wet season.

If no rain event occurred during a monitoring period, this must be so stated in the monitoring report.

Samples must be collected, analyzed, and reported for the Constituents of Concern for all monitoring points assigned to surface water monitoring, in accordance with the methods and frequency specified in Table 4.

**Table 4  
 Surface Water Monitoring Program**

**Surface Water Sampling Locations**

Samples to be obtained at locations SW-1 and SW-2

<b><u>Field Parameters</u></b>	<b><u>Units</u></b>	<b><u>Monitoring Frequency</u></b>
Temperature	°C	Sample during the first hour of discharge during regular business hours from (1) the first storm event of the season, and (2) from at least one other storm event of the season.
Specific Conductance	µmhos/cm	
pH	pH units	
ORP	mv	
<b><u>Monitoring Parameters</u></b>		<b><u>Monitoring Frequency</u></b>
Total Dissolved Solids	mg/l	Sample during the first hour of discharge during regular business hours from (1) the first storm event of the season and (2) from at least one other storm event of the season.
Total Suspended Solids	mg/l	
Chemical Oxygen Demand	mg/l	
Total iron and manganese	mg/l	
General minerals	mg/l	
Tannins and Lignins	mg/l	

**5. Leachate Basin Liquids and Seep Monitoring**

**Leachate Basin Liquids**

The leachate basin freeboard must be recorded weekly during the wet season (1 October—30 April) and monthly during the dry season (1 May—30 September). Whenever the leachate basin is dry, this must be reported in lieu of the freeboard. Analytical methods must be those listed in Table 7. Frequencies and parameters must be sampled and monitored as indicated in Table 5.

**Seeps**

Any leachate which seeps to the surface from the wood waste landfill, the unlined leachate basin, or the ash disposal area must be immediately sampled and analyzed for the Constituents of Concern, including the Field Parameters and Monitoring Parameters upon detection of any seep. Analytical methods must be those listed in Table 7. The quantity of leachate from any seep must be estimated and reported as Leachate Flow Rate (in gallons/day). After the initial sampling upon detection, any seep must be sampled and monitored at the frequencies listed in Table 6.

**Table 5  
 Leachate Basin Liquids Monitoring Program**

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Freeboard, pond	feet & inches	Weekly whenever liquids are present
Specific Conductance	µmhos/cm	Weekly whenever liquids are present
TDS	mg/L	Weekly whenever liquids are present
pH	pH units	Weekly whenever liquids are present
ORP	mv	Weekly whenever liquids are present
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Total Dissolved Solids	mg/l	Semiannually (January and June)
Chemical Oxygen Demand	mg/l	Semiannually (January and June)
Biochemical Oxygen Demand	mg/l	Semiannually (January and June)
General Minerals	mg/l	Semiannually (January and June)
Dissolved metals	mg/l	Semiannually (January and June)
Tannins & Lignins	mg/l	Semiannually (January and June)

**Table 6  
 Seep Monitoring Program**

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Leachate Flow rate, seep	gallons/day	On detection, then <b>weekly</b> thereafter
Temperature	°C	On detection, then <b>monthly</b> thereafter
Electrical Conductivity	µmhos/cm	On detection, then <b>monthly</b> thereafter
pH	pH units	On detection, then <b>monthly</b> thereafter
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Total Dissolved Solids	mg/l	On detection, then <b>quarterly</b> thereafter
Total Suspended Solids	mg/l	On detection, then quarterly thereafter
Chemical Oxygen Demand	mg/l	On detection, then quarterly thereafter
Biochemical Oxygen Demand	mg/l	On detection, then quarterly thereafter
General Minerals	mg/l	On detection, then quarterly thereafter
Dissolved metals	mg/l	On detection, then quarterly thereafter
Tannins & Lignins	mg/l	On detection, then quarterly thereafter

**6. Facility Monitoring**

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger must conduct an inspection of the facility. The inspection must assess the condition of the groundwater monitoring equipment (including wells, etc.), any damage to the drainage control system, and must include the Standard Observations. Any necessary construction, maintenance, or repairs must be completed by **31 October**. By **15 November** of each year, the Discharger must submit an annual report describing the results of the inspection and repair

measures implemented, including photographs of any problems encountered and the repairs made.

b. Storm Events

The Discharger must inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs must be completed **within 30 days** of the inspection. The Discharger must report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

## B. WATER QUALITY PROTECTION STANDARD

### 1. Water Quality Protection Standard Report

- a. For each waste management unit (Unit), the Water Quality Protection Standard must consist of all Constituents of Concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium. For the Water Quality Protection Standard Report, the Units include the wood waste landfill, leachate basin, and the ash disposal area. The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Water Quality Protection Standard, or any modification thereto, shall be submitted in a report for review and approval.
- b. The Water Quality Protection Standard report must:
  - i Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit, or portion of a Unit. At minimum, this list must include the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
  - ii Include a map (both hard copy and digital format) showing the monitoring points, including the background monitoring points, for the surface water monitoring program, the groundwater monitoring program, any identified seeps, and the leachate basin monitoring point. The map must identify each monitored waste management Unit's respective point of compliance as a line just outboard of the side(s) of the Unit that is/are downgradient with respect to direction of groundwater movement within the uppermost groundwater zone under that Unit (see Title 27 §20405).
  - iii Evaluate and determine the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
  - iv Include an electronic file with all historical and current laboratory analytical data in an Excel spreadsheet. The spreadsheet must include the location identifier (e.g., well number), results, units, method detection limits (MDLs), practical quantitation limits (PQL), trace concentrations, analyte, CAS number, analytical method number, sample date, and laboratory. A PDF file is not acceptable and will be rejected.

- c. The Water Quality Protection Standard report must be signed and stamped by a California-registered civil engineer or geologist as meeting the requirements of Title 27, and as required in Section E.3, *Reporting Requirements*, of this MRP.
- d. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

## 2. **Constituents of Concern**

The Constituents of Concern include all the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The Constituents of Concern for all Units are those listed in Tables 1 through 6 for the specified monitored medium, and Table 7 for the analytes and analytical methods.

## 3. **Concentration Limits**

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern must be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8); or
- b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

On 15 June 2009, the Discharger submitted a Water Quality Protection Standard Report with proposed reference concentrations. On 20 August 2009, the Regional Water Board staff commented on the Discharger's Water Quality Protection Standard Report and required that the Discharger submit a revised report with staff's comments incorporated into the revised report. .

## 4. **Monitoring Points**

All monitoring wells established for the monitoring program must constitute the monitoring points for the groundwater Water Quality Protection Standard.

## 5. **Point of Compliance**

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

## 6. **Compliance Period**

The compliance period for the wood waste landfill, unlined leachate basin, and ash

disposal area must be the number of years equal to the active life of the wood waste landfill and ash disposal area plus the closure period. The compliance period is the minimum period during which the Discharger must conduct a water quality monitoring program subsequent to a release from any Unit. The compliance period must begin anew each time the Discharger initiates an evaluation monitoring program. For this site, the compliance period is 53 years.

## **7. Background Monitoring Points**

For the leachate basin, the background monitoring point is groundwater monitoring well B-9. The Discharger submitted its proposal for background monitoring wells on 12 December 2008. The Regional Water Board is in the process of reviewing the Discharger's proposal.

## **E. REPORTING REQUIREMENTS**

### **1. Record Maintenance**

The Discharger must retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records must be maintained throughout the life of the facility including the postclosure period. Such legible records must show the following for each sample:

- a. Sample identification number, the monitoring point or background monitoring point from which it was taken, and the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the responsible personnel and laboratory performing each analysis;
- d. Complete procedure used, any deviations from the procedure, and the method of preserving the sample;
- e. Calculation of results; and
- f. Results of analyses, and the method detection limit (MDL), practical quantitation limit (PQL), and trace quantities for each analysis.

### **2. Transmittal Letter and Certification**

A transmittal letter explaining the essential points must accompany each report. The transmittal letter must include the WDRs Order number, and the date of the Standard Provisions. In addition, the transmittal letter must identify and discuss any violations found since the last report was submitted, and if the violations were corrected. The Discharger must reference any previously submitted time schedules for any corrective action, other enforcements, or evaluation monitoring. If no violations have occurred since the last submittal, this must be clearly stated in the transmittal letter. The transmittal letter must contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions, General

**Reporting Requirements.** All reports and transmittal letters must be signed by persons identified below:

- a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
- b. For a partnership or sole proprietorship: by a general partner or the proprietor.
- c. A duly authorized representative of a person designated in a or b above if the authorization is made in writing by a person described in a or b of this provision; the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and the written authorization is submitted to the Board.

### **3. Report Prepared Under Supervision of Registered Geologist or Civil Engineer**

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments must be performed by, or under the direction of, registered professionals competent and proficient in the fields pertinent to the required activities. All monitoring reports, sampling and analysis plans, and any other reports or plans must be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each monitoring report, other report, or plan submitted by the Discharger must contain the professional's signature and stamp of the seal.

### **4. Report of Seeps**

The Discharger must report by telephone any seepage from any Unit **immediately** after it is discovered. A written report must be filed with the Regional Water Board **within seven days**, containing at least the following information:

- a. A map showing the location(s) of seepage;
- b. An estimate of the flow rate;
- c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
- d. Verification that samples have been submitted for analyses of the Constituents of Concern listed in Table 7 of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and
- e. Corrective measures underway or proposed, and corresponding time schedule.

### **5. Reporting Schedule**

The Discharger must submit reports with the data and information required in this MRP, the WDRs Order No. R5-2009-0110, and the August 1997 Standard Provisions and Reporting Requirements.

**Monitoring Reports**

Any reports for monitoring, sampling, and analysis required under this MRP must be submitted by the Date Due as shown on the table, below:

**Monitoring Reports**

<b><u>Report Type</u></b>	<b><u>Sampling Frequency</u></b>	<b><u>Reporting Period</u></b>	<b><u>Date Due</u></b>
Semiannual	Weekly, monthly, quarterly, semiannual, annual, and 5-year COC	1 January – 30 June 1 July – 31 December	<b>31 July</b> <b>31 January</b>

**Other Reports**

<b><u>Report Type</u></b>	<b><u>Date Due</u></b>
Annual Monitoring Summary Report	<b>31 January</b> of each year
Facility Monitoring Report	<b>15 November</b> of each year
Response to a Release	<b>As necessary</b>

**6. Semiannual Monitoring Reports**

Semiannual monitoring reports must include the following information:

- a. Surface water monitoring results must be reported in the semiannual reports. If no surface water was present during the monitoring period, then this must be stated in the report.
- b. The Discharger must determine and report the groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored pursuant to this MRP. Results must be reported semiannually, including the times of highest and lowest elevations of the water levels in the wells. Groundwater flow rate and direction of flow are not required for LD-2A, located in a deeper aquifer as stated by the Discharger.
- c. In reporting the monitoring data, the Discharger must arrange the laboratory-reported data in tables so that the date, the constituents, the concentrations, units, qualifiers, and compliance or lack thereof is readily discernible. Showing readily discernible compliance or lack thereof must include shading a cell with gray fill or using bold, italics, and underlined font. The data must be summarized in such a manner so as to illustrate clearly the compliance with the WDRs or lack thereof. All historical and current groundwater, leachate, seep, and surface water analytical results must be tabulated and submitted.
- d. Field and laboratory tests must be reported in each monitoring report. Weekly, monthly, quarterly, semiannual, and annual monitoring reports must be submitted in accordance with the schedule, above, for the monitoring period in which samples were taken or observations made.
- e. A discussion of the monitoring results, including notations of any water quality

violations must precede any tabular summaries. Increasing and/or decreasing concentration trends must be identified.

- f. For the wood waste landfill, each monitoring report must have a tabulated summary of the monthly total quantity of wood waste hauled off site during the reporting period, the annual quantity of wood waste hauled off-site for each year beginning with 1997, and the total cumulative quantity since the start of this Discharger's clean closure in 1997.
- g. The Discharger must include a site map showing the facility features, existing and historical monitoring wells, direction of groundwater flow, and stormwater and surface water monitoring locations.
- h. The Discharger must include hard copies of all analytical reports as signed by the laboratory's responsible personnel. Alternatively, the discharger may submit a CD with the analytical reports, provided that a summary table is provided that shows the sample location number with each analyte cross-referenced to its laboratory report number, and page number(s) in the laboratory report.
- i. The Discharger must include the monitoring well data sheets, including the date and time, sampling mechanism or type of pump, purging and sampling method, and water disposal method.
- j. The Discharger must provide a description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name, and any other observations).
- k. Each monitoring report must include a compliance evaluation summary. The summary must contain at minimum:
  - 1) Laboratory statements of results of all analyses evaluating compliance with requirements.
  - 2) A technical evaluation of the effectiveness of the leachate monitoring and control facilities.
  - 3) A technical evaluation of the effectiveness of the run-off/run-on control facilities.
  - 4) The quantity and types of wastes discharged into the wood waste landfill, and the locations in the wood waste landfill where waste has been placed since submittal of the last such report.
  - 5) A **summary and certification of completion** of all **Standard Observations** for the wood waste landfill and ash disposal area, for the perimeter of the wood waste landfill and ash disposal area, and for the receiving waters. Standard observations must be conducted **weekly** during the wet season (1 October to 30 April) and **monthly** during the dry season (1 May to 30 September). The Standard Observations must include:

For the wood waste landfill, ash disposal area, and associated perimeters:

    - a) Evidence of ponded water at any point on the facility (show affected area on map);

- b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;
  - c) Evidence of erosion and/or of day-lighted refuse; and
  - d) Evidence of seeps and/or liquid leaving or entering the wood waste landfill and ash disposal area, estimated size of affected area, estimated flow rate, and color of liquids (show affected area on map).
- 6) For each monitoring point and background monitoring point addressed by the report, a description of:
- a) The time of water level measurement;
  - b) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
  - c) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove of the water that was in the well bore while the sample was being taken;
  - d) The type of pump - or other device - used for sampling, if different than the pump or device used for purging;
  - e) A statement that the sampling procedure was conducted in accordance with the approved SAP;
  - f) A discussion of upward trends in any constituent concentration; and
  - g) A discussion of violations
- k. For non-naturally occurring organic Constituents of Concern (e.g., tannins and lignins, volatile organic compounds, polynuclear aromatic hydrocarbons, chlorinated phenols, total petroleum hydrocarbons, BTEX, and etc), the Discharger must conclude that a release is tentatively indicated if the data for any Monitoring Point contains either:
- a) Two or more qualifying constituents that equal or exceed their respective MDLs, or
  - b) One qualifying constituent which exceeds its PQL

Specifically for dioxins and furans, the specified non-statistical method for evaluation of dioxin and furan monitoring data is the presence of two or more dioxin or furan constituents above its respective minimum level as described in EPA Method 1613B.

Based on the above, if the Discharger determines that there is measurably significant evidence of a release from the wood waste landfill, leachate basin, or ash disposal area at any monitoring point, the Discharger must **immediately** implement the requirements of the **Standard Provisions', Response to a Release.**

## 7. Annual Monitoring Report

The Discharger must submit an **Annual Monitoring Summary Report** to the Regional Water Board staff covering the reporting period described in the table, above. This report must contain:

- a. All Constituents of Concern must be graphed so as to show the concentrations and historical trends at each monitoring point and background monitoring point for all historical samples. Each such graph must plot the concentration of one constituent for the period of record for monitoring points or background monitoring point, at a scale appropriate to show trends or variations in water quality. Each concentration line for a specific well must be readily discernable from that of any other well's concentration line. The graphs must plot each laboratory-reported datum, and must **not** plot mean values. For any given constituent or parameter, the scale for background plots must be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
- b. All historical monitoring data, including all data for the previous year, must be submitted in tabular format and in a digital file format (e.g., an electronic file with an Excel spreadsheet) acceptable to the Regional Water Board. The Regional Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Water Board. The electronic Excel spreadsheet must include the location identifier (e.g., well number or other monitoring point), analytical results, units, MDLs, PQLs, trace concentrations, analyte, CAS number, analytical method number, sample date, and laboratory. The acceptable format is shown below:

Sample Location ID	Date Sampled	Analyte	Result	PQL	MDL	Qualifier	Units
Location ID #1	Mm/dd/yy	Analyte 1	.004	.005	.0025	J	mg/L
Location ID #1	Mm/dd/yy	Analyte 2	ND	.005	.0025		mg/L
Location ID #1	Mm/dd/yy	Analyte 3	40	25	12		ug/L
Location ID #2	Mm/dd/yy	Analyte 1	.6	.005	.0025		mg/L
Location ID #2	Mm/dd/yy	Analyte 2	10	.005	.0025		mg/L
Location ID #3	Mm/dd/yy	Analyte 1	.6	.005	.0025		mg/L
Location ID #3	Mm/dd/yy	Analyte 3	26	25	12		ug/L

- c. A comprehensive evaluation and determination of the Discharger's compliance record, and the result of any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with the WDRs.
- d. The groundwater flow rate and direction, including the dates of highest and lowest elevations of the water levels in the wells.

- e. Hydrographs of each well must be submitted annually showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well must show the cumulative quarterly data.
- f. The applicable Constituents of Concern must be evaluated with regards to the cation/anion balance, and the results must be graphically presented annually using a Stiff diagram. Plots of each well must be prepared semiannually and submitted annually.
- g. Tabulated data showing the annual historical volume of material extracted and excavated out of any waste management unit (i.e., the wood waste landfill, ash disposal area, and Leachate Basin) and transported off-site.
- h. Tabulated data for the current calendar year showing the monthly and cumulative total quantity of any extracted material that has been transported off-site.
- i. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- j. A discussion and evaluation of any statistically increasing/decreasing trends in constituent concentrations at any monitoring well must be provided.
- k. Annually beginning with the report due **31 January 2010**, the Discharger must list in tabular format all groundwater monitoring wells (both historical and existing), depth of boring, the horizontal survey coordinate, the vertical survey coordinate, the surveying reference datum (e.g., NAD 83, NVD 88, etc), the date installed, and the date decommissioned.
- l. The Discharger must include all information required to be reported by the Standard Provisions, this MRP, and the Waste Discharge Requirements.
- m. Beginning with the 2010 annual report, a topographic map showing the remaining volume of waste must be included. Thereafter, a revised topographic must be included every three years (i.e. 2010, 2013, 2016, etc) that shows the current volume of waste remaining in the wood waste landfill.

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
8 October 2009  
(Date)

**TABLE 7 CONSTITUENTS OF CONCERN AND ANALYTICAL METHODS\***

<b><u>Field Parameter</u></b>	<b><u>Method</u></b>
Specific conductance	Calibrated field instrument
pH	Calibrated field instrument
Turbidity	Calibrated field instrument
ORP/Dissolved oxygen	Calibrated field instrument
TDS	Calibrated field instrument with conversion factor approved by Regional Water Board

<b><u>Monitoring Parameter</u></b>	<b><u>Method</u></b>
<b><u>Metals, Dissolved**</u></b>	
Iron	EPA 6020
Manganese	EPA 6020
Arsenic	EPA 7061

<b><u>General chemistry</u></b>	
Specific conductance	EPA 120.1
Tannins & Lignins	SM 5550B
Chemical Oxygen Demand	EPA 410.4
Biochemical Oxygen Demand	SM5210B
Total Dissolved Solids	SM2540C
Total Suspended Solids	SM2540D

<b><u>General minerals</u></b>	
Chloride, total	EPA 300
Sulfate, total	EPA 300
Carbonate, total	2320B
Bicarbonate, total	2320B
Calcium**	EPA 6020**
Magnesium**	EPA 6020**
Sodium**	EPA 6020**
Potassium**	EPA 6020**

**Polynuclear Aromatic Hydrocarbons, Selective Ion Monitoring (SIM) USEPA Method 8270C**

- Naphthalene
- Pyrene
- Acenaphthene
- Fluorene
- Phenanthrene
- Anthracene
- Fluoranthene
- Benzo(a)anthracene
- Chrysene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Indeno(1,2,3-c,d)pyrene
- Dibenzo(a,h)anthracene
- Benzo(g,h,i)perylene

**TABLE 7 CONSTITUENTS OF CONCERN AND ANALYTICAL METHODS\***

**Tetra- through Octa-Chlorinated Dibenzodioxins and Dibenzofurans (dioxins/furans), USEPA Method 1613B, Total Concentrations**

2,3,7,8-TCDD  
Total TCDD  
2,3,7,8-TCDF  
Total-TCDF  
1,2,3,7,8-PeCDD  
Total-PeCDD  
1,2,3,7,8-PeCDF  
2,3,4,7,8-PeCDF  
Total-PeCDF  
1,2,3,4,7,8-HxCDD  
1,2,3,6,7,8-HxCDD  
1,2,3,7,8,9-HxCDD  
Total-HxCDD  
1,2,3,4,7,8-HxCDF  
1,2,3,6,7,8-HxCDF  
1,2,3,7,8,9-HxCDF  
2,3,4,6,7,8-HxCDF  
Total-HxCDF  
1,2,3,4,6,7,8-HpCDD  
Total-HpCDD  
1,2,3,4,6,7,8-HpCDF  
1,2,3,4,7,8,9-HpCDF  
Total-HpCDF  
OCDD  
OCDF

Acronyms:

TCDD = Tetrachlorodibenzo-*p*-dioxin;  
TCDF = Tetrachlorodibenzofuran;  
PeCDD = Pentachlorodibenzo-*p*-dioxin;  
PeCDF = Pentachlorodibenzofuran;  
HxCDD = Hexachlorodibenzo-*p*-dioxin;  
HxCDF = Hexachlorodibenzofuran;  
HpCDD = Heptachlorodibenzo-*p*-dioxin;  
HpCDF = Heptachlorodibenzofuran;  
OCDD = Octachlorodibenzo-*p*-dioxin  
OCDF = Octachlorodibenzofuran

\* Constituents of Concern must be prepared and analyzed for "total" concentrations unless otherwise approved by the Regional Water Board.

\*\* Dissolved metals are to be obtained with a >10 micron filter as required under this Monitoring and Reporting Program. Calcium, magnesium, sodium, and potassium may be field-filtered with a >10 micron filter as required under this Monitoring and Reporting Program.

## INFORMATION SHEET

ORDER NO. R5-2009-0110

### WASTE DISCHARGE REQUIREMENTS FOR SIERRA PACIFIC INDUSTRIES-MARTEL DIVISION FACILITY CLOSURE, AND POST CLOSURE OPERATION, MAINTENANCE AND MONITORING AMADOR COUNTY

#### Background

Sierra Pacific Industries, Martell Division, (Discharger) owns, or owned, a 242-acre former lumber mill located in Martell, California, in Amador County. The facility includes a former Ash Disposal Area covering approximately 5.3 acres, a Class III Wood Waste Landfill covering approximately 24 acres, and an unlined leachate basin of approximately 2 acres, located on the southern boundary of the property.

These facilities were previously regulated by Waste Discharge Requirements (WDR) Order No. 98-094, which permitted closure-in-place of the ash disposal area, and clean closure of the wood waste landfill. WDR Order 98-094 required that the clean closure of the wood waste landfill be completed by 2004. As of 2008, closure of the wood waste landfill had not been completed, and closure of the ash disposal area had not yet begun.

#### Ash Disposal Area

The approximate combined volume of waste and soil in the ash disposal area is 80,000 cubic yards. In the 18 May 1999 Waste Characterization Report, the Discharger reported all samples taken at the ash disposal area contained concentrations of dioxins/furans which exceeded the EPA Industrial Regional Screening Levels. At the request of the Amador County, the ash disposal area was covered with an interim 1-foot clean soil cap, and reseeded to mitigate erosion.

On 12 December 2008 the Discharger submitted a revised Report of Waste Discharge (ROWD) for the facility. The closure plan includes capping the area with an engineered alternative; diverting, repairing and upgrading the drainage courses; and installing interception drains to maintain a minimum separation of five feet between groundwater and the bottom of the waste pile.

#### Wood Waste Landfill

The discharger is currently performing clean closure of the wood waste landfill under WDR No. 98-094. In 2007 and 2008 the discharger clean closed approximately 3.8 acres, and 1.5 acres respectively.

This Order requires that the Discharger perform a survey of the remaining wood waste volume; clean close the landfill at a rate of at least 40,000 cubic yards per year; and submit verification of clean closure of the entire wood waste landfill.

**Monitoring and Reporting Program**

This Order includes a monitoring and reporting program which will begin by October 2009. Monitoring required in Title 27 for evaluation, detection and corrective action will include groundwater sampling, surface water sampling, sampling of the leachate basin, and sampling of leachate within the drainage course prior to reaching the leachate basin. In addition, prior to the anticipated rainy season, the Discharger must conduct a facility inspection to assess the condition of the monitoring system. Reporting must be made both semi-annually and annually.