

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0060

WASTE DISCHARGE REQUIREMENTS
FOR
BIG VALLEY POWER, LLC
BIG VALLEY SAWMILL AND COGENERATION FACILITY
LASSEN COUNTY

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

1. Big Valley Power, LLC is proposing to restart a sawmill and cogeneration power plant facility that was operated by the Big Valley Lumber Company. Big Valley Lumber Company operated a sawmill at the site from the mid-1950's to 2001. The cogenerating power plant was added in 1983. The sawmill and power plant facility most recently operated under Board Order 98-232/NPDES No. CA0081451. The sawmill ceased operations in 2001 and the sawmill properties and equipment were auctioned in November 2001 to meet creditor debt. The Regional Board rescinded Board Order No. 98-232 on January 30, 2004.
2. Big Valley Power, LLC purchased the power plant, property, building, and residual sawmill equipment in April 2004. The plant is located on parcels totaling approximately 110 acres (Assessor's Parcel Nos. 001-130-11, 47,61, 62,73, 74, and 34 and 001-150-34, 33, and 24). Additional land (Assessor's parcel Numbers 001-130-09 and 63) for the northern pond is leased from Norris D. and Dorothy M. Gerig. The plant is located along the north side of Highway 299 approximately ½-mile east of the town of Bieber (Section 14, T38N, R7E, MDB&M) as shown on Attachment A, which is attached hereto and made part of this Order by reference. The latitude and longitude of the plant is 41.13 degrees North Latitude and 121.14 degrees West Longitude.
3. Big Valley Power, LLC and Norris D. and Dorothy M. Gerig are hereafter are referred to as the "Discharger".
4. The project consists of restarting the power plant and sawmill. A projected 50,000 dry tons of wood waste will be burned each year at this steam powered plant to produce 7.5-megawatts (MW) of electrical power for sale to a utility company. The plant includes a boiler feed water treatment system, a boiler, a turbine, a condenser, and a two-cell evaporative cooling tower. The site layout is presented on Attachment B, which is attached hereto and made part of this Order by reference.
5. Plant process water will be supplied from one of six deep water supply wells onsite. Process water is currently supplied from the cooling tower well. The cooling tower well is screened at approximately 525 feet bgs and has an electrical conductivity of approximately 226 µmhos/cm. Approximately 110 gallons per minute (gpm) of process

water will be discharged to northern percolation pond. Water-use is summarized below and shown on Attachment C, which is attached hereto and part of this Order by reference:

- a. Approximately 2 gpm of boiler blow-down and 212 gpm of make-up well water are supplied to the cooling tower. Approximately half of the water fed to the cooling tower is lost to evaporation and the remaining (110 gpm) is discharged to the percolation ponds or log deck. The electrical conductivity of cooling tower discharge generally ranges from 700 to 820 umhos/cm.
 - b. Approximately 2 gpm of water are supplied to the boiler. Boiler feed water is treated using a cation/anion water softener (optional) followed by reverse osmosis. Approximately 12 gpm are supplied to the water softener/reverse osmosis system with 2 gpm of the output fed to the boiler and the remaining 10 gpm fed to the cooling tower.
6. The Discharger is currently evaluating alternative disposal options for cooling tower and boiler blowdown discharge.
 7. The facility has two sanitary facilities located on the site. The domestic sanitary waste generated at these facilities is discharged to the Lassen County Waterworks Sewage Treatment ponds located south of the town of Bieber through municipal water works system.
 8. The facility consists of sawmill buildings and appurtenant structures, and a power plant facility. There are 27 structures including the sawmill building, dry kiln building, boiler, chip storage bins, lumber, storage sheds, offices, and the power plant facility. The power plant was constructed in 1983 adjacent to the sawmill and was operational until 2001.
 9. The facility is located within the Big Valley Basin. Big Valley is a broad, flat plain extending approximately 12 miles north to south and 15 miles east to west. The Pit River enters the valley from the north and exits the valley to the south through a narrow canyon gorge. Topography in the vicinity of the facility is generally flat with slopes in the area generally less than five percent. The lowest nearby topographic point is the Pit River located approximately one mile to the west.
 10. There are no natural water bodies within 1500 feet of the facility. The Babcock Ditch runs to the southeast of the facility, and is an agricultural irrigation drain. Historically, storm water discharged from the facility drained into the Babcock Ditch that may discharge to the Pit River. The facility is not located within a FEMA flood zone.

11. Approximately five cubic yards of ash will be generated each day. Fly ash and bottom ash will be stockpiled on site until it is delivered to local farms and tilled into the fields as a soil amendment or disposed of at an approved landfill facility. Historically, ash has been stored in an area adjacent to the power plant prior to shipment offsite. The discharger proposes to continue to store ash in this area but will construct a berm to ensure ash and any storm water falling on the ash remains in the bermed area. As necessary to ensure containment, ash may be placed in metal bins and stored in covered areas of the site.
12. Due to high total dissolved solids and electrical conductivity, the water softener backwash is retained onsite and disposed offsite.
13. Petroleum tankage at the facility totals 9,000 gallons consisting of one 500-gallon gasoline, one 500-gallon diesel tank and one 8,000-gallon diesel tank. All gasoline and diesel will be stored in aboveground tanks capable of holding a minimum of 125 percent of the tank capacity. Turbine oil, hydraulic oil, and motor oils will be kept in 55-gallon drums. Secondary containment will be provided. The containment basin will be capable of holding 110 percent of the total drum capacity. Anti-corrosion chemicals added to the boiler will be kept in polyethylene drums in a separate containment facility. A secondary containment basin capable of storing 110 percent of the total drum volume will surround the polyethylene drums. The polyethylene and 55-gallon drums storage areas will be located under roofed structures to shelter the contents of the drums from the sun and precipitation. Each area of fuel storage will contain a spill cleanup kit in the event of a spill. The Discharger prepared a Spill Prevention Control and Countermeasure Plan (SPCC).
14. Storm water is directed to the water retention ponds or routed through existing drainage ditches to the Babcock Ditch. The general stormwater flow pattern is shown in Attachment D. Precipitation falling in the fuel storage log deck and truck unloading areas will be contained in the log deck ponds. Storm water in the immediate vicinity of the northern retention pond will be stored in the northern pond. A drainage ditch along the eastern property boundary captures storm water from the eastern half of the site. The ditch runs beneath Highway 299 through a culvert. A second culvert is available in the event that the primary route is blocked. The facility is located within the Pit River Hydrologic Unit, Big Valley Hydrologic Area No. 526.60 as depicted on the interagency hydrologic map prepared by the California Department of Water Resources (DWR).
15. The beneficial uses of the Pit River are; municipal and domestic supply (MUN), agricultural supply (AGR), contact (REC-1) and non-water contact (REC-2) recreation, warm (WARM) and cold (COLD) freshwater habitat, spawning (SPWN), and wildlife habitat (WILD).

16. The beneficial uses of the underlying groundwater are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).
17. The United States Environmental Protection Agency (USEPA), on 16 November 1990, promulgated storm water regulations (40 CFR Parts 122, 123, and 124) which require specific categories of industrial facilities which discharge storm water to obtain NPDES permits and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate industrial storm water pollution.
18. The State Water Resources Control Board (SWRCB) adopted Order No. 97-03-DWQ (General Permit No. CAS000001), on 17 April 1997, specifying waste discharge requirements for discharge of storm water associated with industrial activities, excluding construction requirements, and requiring submittal of a Notice of Intent (NOI) by industries covered under the permit. Because all storm water at this facility is not contained on-site, the facility is covered under the General Industrial Storm Water Permit. The Discharger submitted a Stormwater Pollution Prevention Plan dated October 2004 to the State Water Resources Control Board.
19. The Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the SWRCB and incorporated by reference, such as Resolution 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy). These requirements implement the Basin Plan.
20. The Antidegradation Policy requires the Board in regulating the discharge of waste to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives).
21. The Board has considered the Antidegradation Policy and finds that the current discharge may be inconsistent with this policy, and could cause an increase in groundwater constituents above water quality objectives, specifically electrical conductivity and metals. Additionally, it has not been demonstrated that degradation of groundwater by this discharge is consistent with maximum benefit to the people of the State. Therefore, groundwater limitations are necessary for the discharge to be in accordance with the Basin Plan requirements. To assure that the discharge as

permitted herein is consistent with the Antidegradation Policy, the Discharger is required to propose and fully implement Best Practicable Treatment or Control measures so that the discharge does not create a condition of pollution or nuisance and that the highest water quality will be maintained.

22. This Order establishes background groundwater limitations for the facility, and contains tasks for evaluating groundwater conditions and assuring that Best Practicable Treatment or Control measures are implemented. This Order also includes a provision to reopen the Order should it be determined that groundwater degradation is inconsistent with the maximum benefit to the people of the state. Based on the results of the scheduled tasks, the Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with the Antidegradation Policy.
23. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses and do not contain waste constituents in concentrations statistically greater than background water quality.
24. The Basin Plan contains narrative water quality objectives for chemical constituents, taste and odor, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
25. The DWR has established standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards). These standards are described in two DWR publications: California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981).
26. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance with Title 14, CCR, Section 15301.

27. The discharge authorized herein is exempt from the requirements of Title 27, CCR. The exemption, pursuant to Section 20090(b), is based on the following:
 - a. The Board is issuing these waste discharge requirements,
 - b. These waste discharge requirements implement the Basin Plan and allow discharge only in accordance with the Basin Plan, and
 - c. The wastewater is not hazardous waste and need not be managed according to 22 CCR, Division 4.5, Chapter 11, as a hazardous waste.
28. State regulations pertaining to water quality monitoring for waste management units are found in Title 27, CCR, Section 20380 et seq. These regulations prescribe procedures for detecting and characterizing the impact of waste constituents on groundwater. While the facility has been found exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order. As long as the discharge complies with these waste discharge requirements, the exemption remains warranted.
29. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
30. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastewater, including storm water, at locations or in a manner different from that described in Findings Nos. 5, 7, 11, 12 and 14 is prohibited without approval from the Executive Officer.
2. The by-pass or overflow of wastes to surface waters is prohibited.
3. The discharge of water from cooling tower blowdown, boiler blowdown, demineralizer regeneration wastewater, or any other waste of recognizable power plant origin to surface waters or surface water drainage courses is prohibited.
4. The discharge of leachate from ash stockpiles to surface waters, surface water drainage courses or groundwater is prohibited.

5. The discharge of leachate from wood fuel stockpiles to surface waters, or surface water drainage courses is prohibited.
6. The discharge of ash, bark, sawdust, wood, debris, or any other solid wastes recognized as originating from power plant operations to groundwater, surface waters, or surface water drainage courses is prohibited.
7. The discharge of hazardous or toxic substances, including water treatment chemicals, solvents, or petroleum products (including oil, grease, gasoline and diesel) to surface waters or groundwater is prohibited.
8. The discharge of process water to leachfields is prohibited.
9. Use of process water for irrigation of off-site lands (i.e. lands other than the Assessor's Parcel Numbers listed in this Order) is prohibited.
10. The burning of treated wood, and or the storage of chipped treated wood as fuel are prohibited.

B. Discharge Specifications

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
2. The Discharger shall maintain a minimum of two feet of freeboard in the percolation, log deck runoff and evaporation ponds (measured vertically to the lowest point of overflow).
3. Concentrations of the following constituents in the process water discharged to the percolation ponds shall be less than the following limits:

<u>Constituent</u>	<u>Unit</u>	<u>Limit</u>
Electrical Conductivity	umhos/cm	900
Chloride	mg/L	250
Fluoride	mg/L	1
Sulfate	mg/L	250
Aluminum	ug/L	200
Arsenic	ug/L	10
Iron	ug/L	300
Manganese	ug/L	50
Mercury	ug/L	2

4. The pH of process water discharged to evaporation/percolation ponds shall be within 6.5 to 8.5.
5. Discharges from the facility shall not cause degradation of any water supply.
6. The wood ash storage area shall be separated from the wood fuel stockpiles and adequately bermed to prevent runoff to surface waters or surface water drainage courses. As necessary to ensure containment, ash may be placed in metal bins and stored in covered areas of the facility.
7. Ponds shall be managed to prevent breeding of mosquitoes. In particular:
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
8. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year annual return frequency.
9. Process water may be used for irrigation on any of the Assessor's Parcel numbers listed in this order provided:
 - a. The water is not allowed to discharge off site ("site" includes only the areas included in the Assessor Parcel Numbers listed in this Order);
 - b. Irrigation water is applied at not more than agronomic rates; and
 - c. The irrigation plan submitted to the Regional Board Executive Officer in accordance with the Provisions of this order is approved by the Executive Officer.

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

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of

Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.

2. Any proposed change in sludge, wood waste, or ash use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.
3. Any changes to soil amendment application areas shall be approved by the Executive Officer prior to use.
4. Fly ash removed from the facility shall be:
 - a. If inert waste, tilled into agricultural fields as soil amendment; or
 - b. Disposed in a dedicated unit consistent with Title 27, Section 20200(b); or
 - c. Disposed in a Class III landfill consistent with Title 27 Section 20220(d).

Any other use shall constitute disposal and shall be subject to Title 27, CCR requirements unless approved by the Executive Officer.

D. Groundwater Limitations

Discharges from the facility shall not cause underlying groundwater or groundwater downgradient of the facility to:

- a. Contain waste constituents in concentrations statistically greater than background water quality;
- b. Exhibit a pH of less than 6.5 or greater than 8.5 pH units;
- c. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use

E. Provisions

1. The Discharger shall complete facility improvements designed to protect water quality, perform water quality studies, and implement an enhanced monitoring program according to the following time schedule. All reports shall be submitted pursuant to Section 13267 of the California Water Code, and shall be prepared by a California Registered Professional Engineer, Geologist, or Engineering Geologist. Any surveying shall be performed by a California registered Land Surveyor or Engineer qualified to perform surveying.
2. **At least 90 days prior to use of process water for irrigation**, the Discharger shall submit an irrigation plan to the Regional Board office for Executive Officer approval. The plan shall include an 8-1/2 x 11 inch map of the area to be

- irrigated, the proposed irrigation rates including supporting information showing that the irrigation rate is within the range of acceptable agronomic rates for the irrigated crop, location and season, description of how the irrigation water will be contained on the irrigated field including a description of any tail water return system, and assurances that excess water will not be discharged to surface waters. Process water may only be used to irrigate lands whose Assessor Parcel Number is included in this permit. Use of pond or process water on parcels not listed in this order requires re-opening of this permit.
3. Within **12 months of Order adoption**, the Discharger shall submit a *Pollutant Minimization and Control (PMC) Workplan*. The report shall include a comprehensive evaluation of the processes at the facility that can be improved to minimize the concentration and mass of pollutants in the discharge. The evaluation shall include an assessment of the implementability, effectiveness, and cost of each PMC. Effectiveness shall be measured by reduction of impacts to groundwater including estimated concentration or mass loading reductions for each PMC measure. Recommended PMC measures based on the PMC evaluation, as well as an implementation schedule shall be proposed. The schedule for implementation shall be as short as practicable, and in no case shall it exceed **12 months** past the Executive Officer's approval of the workplan unless specifically approved by the Executive Officer. The component evaluation, recommended improvements, and implementation schedule are subject to the Executive Officer's approval.
 4. Within **12 months of Order adoption**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in Monitoring and Reporting Program No. R5-2007-0060, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10). For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.
 5. Within **2 years of adoption of this Order**, the Discharger shall submit a technical report that proposes specific numeric groundwater limitations that reflect full implementation of PMC measures. Should numerical limits other than background be proposed, the Discharger shall: 1) describe how the numerical limits were determined considering actual data from compliance monitoring wells and impact reductions through full implementation of PMC; and 2) submit results of a calibrated groundwater model to support its proposal. In addition, the

- technical report shall describe the overall status of compliance with implementation of PMC measures and compliance with all groundwater background limitations.
6. Within **2 years of adoption of this Order**, the Discharger may elect to submit documentation demonstrating that that degradation of groundwater quality above background conditions resulting from activities at the facility is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives). This provision to provide this information is optional and at the discretion of the Discharger.
 7. Upon completion of tasks set forth in Provision Nos. E.3 and E.5, the Board staff shall consider the evidence provided and make a determination regarding whether the Discharger has implemented justified PMCs and the appropriate final numeric groundwater limitations that comply with the Antidegradation Policy. This Order may be reopened to incorporate final numerical limits.
 8. Should liners be used as a PMC, the Discharger shall inspect the liners every three years or more often, as recommended by the designer. Visual inspection above liquid surface shall be adequate if a leak detection system is installed. A written report describing the condition of the liners, and any necessary repairs that have been or will be made shall be submitted to the Regional Board within 60 days of the inspection. The report shall also include an assessment of the performance duration of the liner.
 9. The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) containing Best Management Practices (BMPs) to reduce pollutants in the storm water discharges. The Discharger shall amend the SWPPP whenever there is a change in construction, site operation, or maintenance that may affect the discharge of significant quantities of pollutants to surface water or groundwater. The SWPPP must also be amended if there are storm water related violations of this Order, or the Discharger has not achieved the general objectives of controlling pollutants in the storm water discharges.
 10. The Discharger shall comply with the standards contained in the Health and Safety Code, Chapter 6.67, Aboveground Storage of Petroleum. The Spill Prevention Control and Countermeasure Plan shall be updated a minimum of every three years or within 30 days of any significant process change. All updates shall be certified by a Professional Engineer registered in the State of

California and submitted to the Regional Board.

11. The Discharger shall comply with attached Monitoring and Reporting Program No. R5-2007-0060, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
12. The Discharger shall report to the Board any material change or proposed change in the character, location, or volume of the discharge or water treatment chemicals used within 30 days of any such change. Notification on water treatment chemical changes shall include information from the manufacturer on toxicity and hazardous classifications.
13. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," dated 1 March 1991, which are a part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."
14. The Discharger is ultimately responsible for the effectiveness of its treatment and control measures in assuring compliance with groundwater limitations, and liable for remediating any impact on groundwater. Degradation of water quality beneath the facility shall be grounds to rescind this Order, reclassify the waste as designated, and require compliance with Title 27 prescribed waste containment standards, or to initiate enforcement, as appropriate.
15. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.
16. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
17. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2007-0060
BIG VALLEY POWER, LLC.
BIG VALLEY SAWMILL AND COGENERATION PLANT
LASSEN COUNTY

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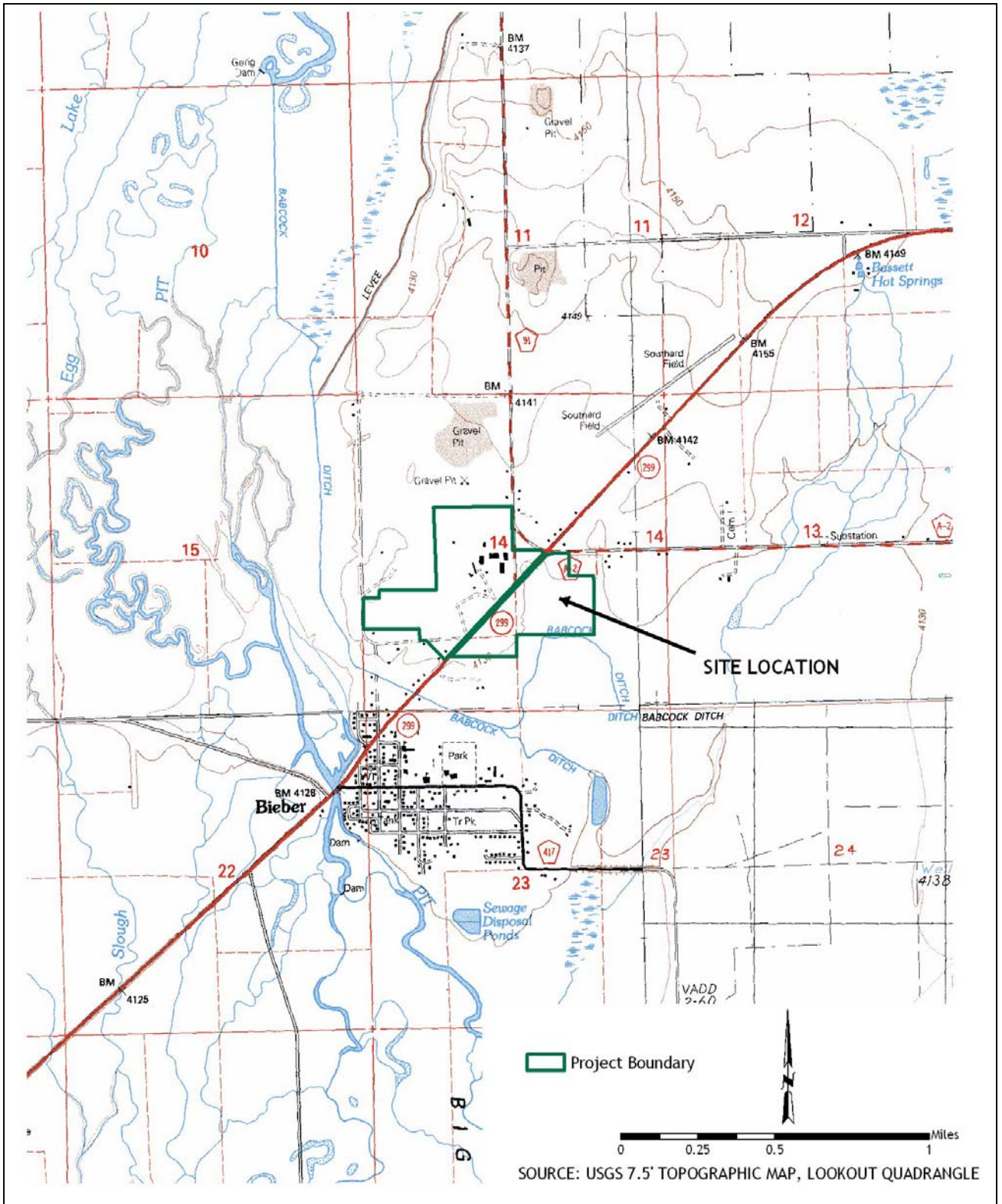
18. The Board will review this Order periodically and may revise requirements when necessary.

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 21 June 2007.

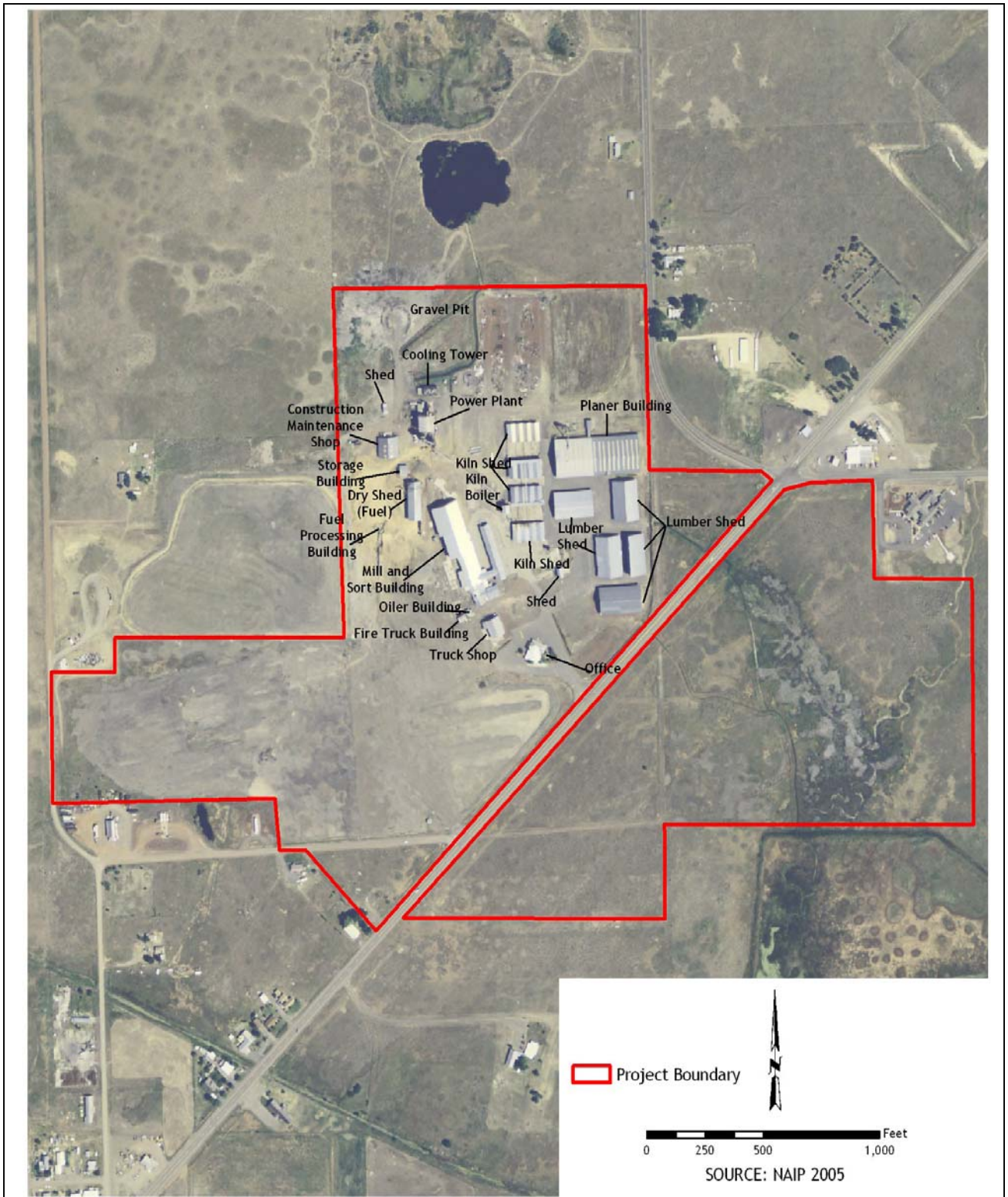
PAMELA C. CREEDON, Executive Officer

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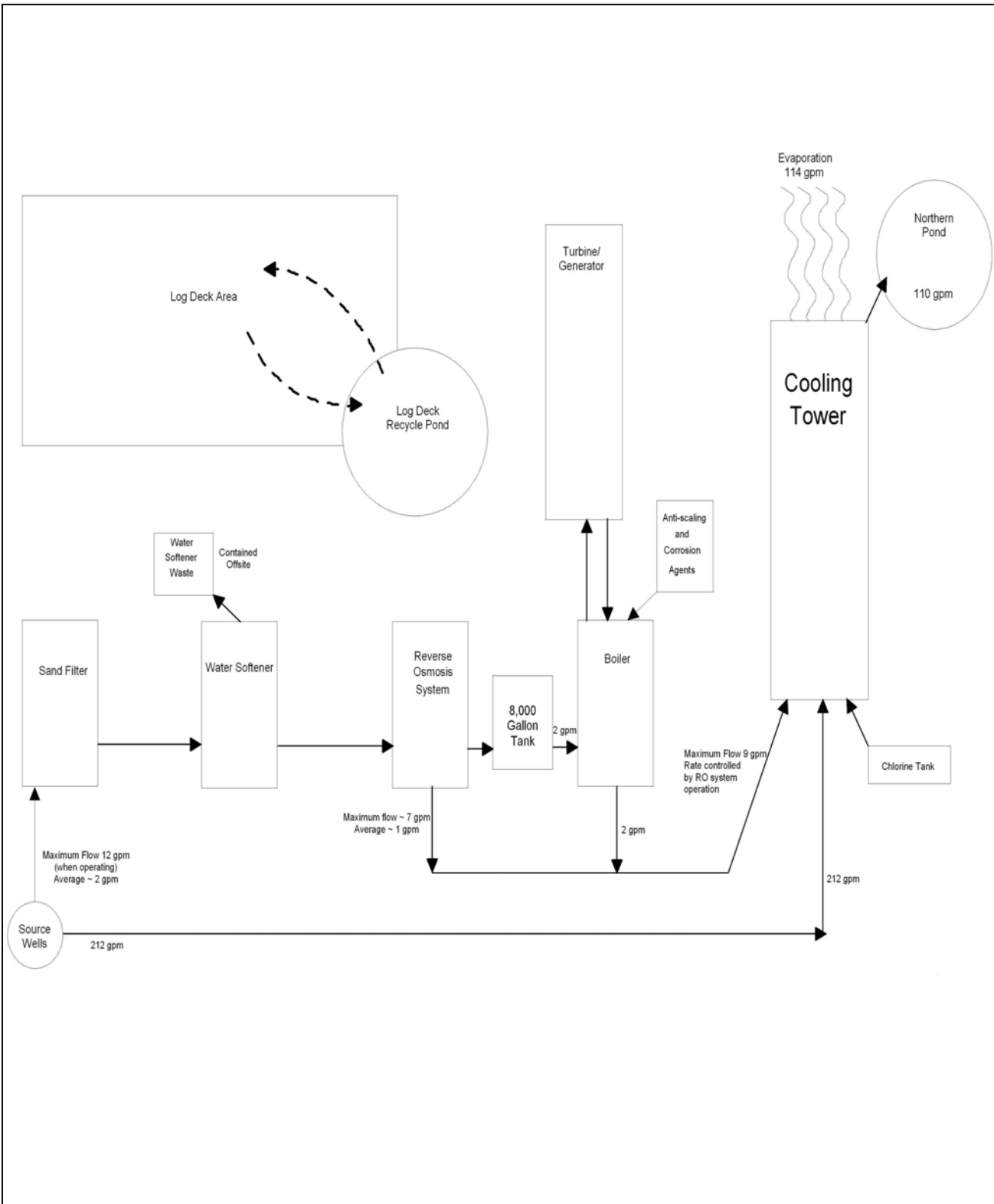
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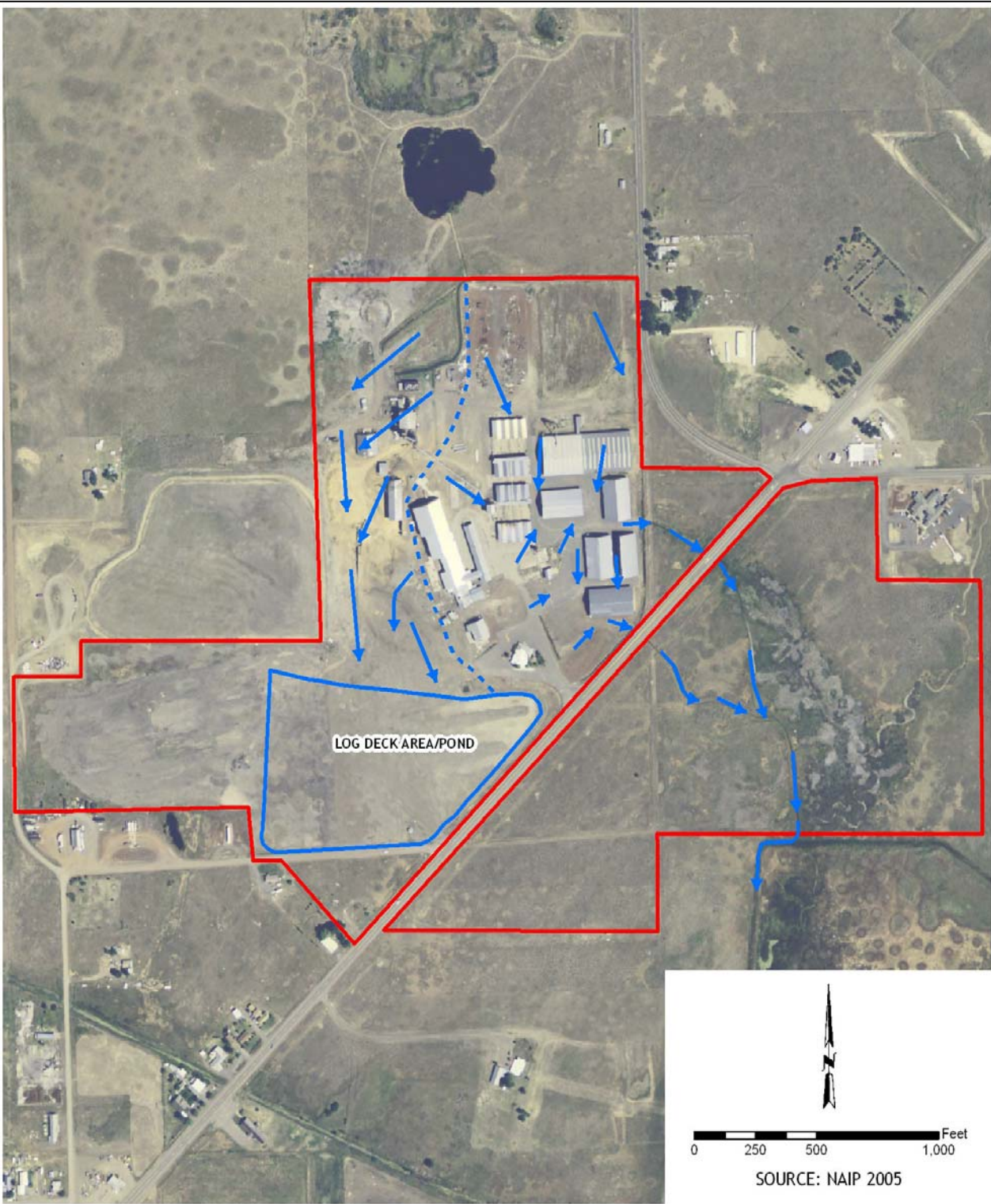
Attachment "A"
Big Valley Power
Location Map
41° 07' 49" North 121° 08' 09" West



Attachment "B"
 Big Valley Power
 Site Layout



Attachment "C"
Big Valley Power
Process Flow Diagram



Attachment "D"
Big Valley Power
Storm Water Flow Diagram

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0060
FOR
BIG VALLEY POWER, LLC.
BIG VALLEY SAWMILL AND COGENERATION FACILITY
LASSEN COUNTY

PROCESS WATER MONITORING

The following waters shall be sampled:

- plant process water samples from the last connection before process water is discharged to either of the following: ditch leading to the evaporation/percolation pond or the log deck pond (if process water is being discharged to the log deck pond)
- contents of the evaporation/percolation pond.

The date and time of collection shall be recorded. Monitoring of at least the following parameters shall be conducted:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Process Water Sampling Frequency</u> ¹	<u>Evaporation Pond Sampling Frequency</u>
Discharge Volume	gallons	Meter	Monthly	--
Freeboard ²	feet, inches	Staff Gage	Monthly	Monthly
Depth ²	feet, inches	Staff Gage	Monthly	Monthly
pH	units	Grab or Meter	Monthly	Monthly
Temperature	°C	Thermometer	Monthly	Monthly
Electrical Conductivity	umhos/cm	Grab or Meter	Monthly	Monthly
Chloride	mg/L	Grab	Quarterly	Quarterly
Fluoride	mg/L	Grab	Quarterly	Quarterly
Sulfate	mg/L	Grab	Quarterly	Quarterly
Aluminum	ug/L	Grab	Quarterly	Quarterly
Arsenic	ug/L	Grab	Quarterly	Quarterly
Iron	ug/L	Grab	Quarterly	Quarterly
Manganese	ug/L	Grab	Quarterly	Quarterly
Mercury	ug/L	Grab	Quarterly	Quarterly

¹ Process water sampling required only during months that discharge is occurring.

² Percolation and evaporation ponds only.

ASH MONITORING

The Discharger shall report the following information **monthly**:

- Volume of fly ash, and bottom ash generated (recorded individually)
- Volume of material stored at facility
- Volume of material removed from facility
- Disposal location or soil amendment application area

Should ash be used as a soil amendment, the following shall be described **monthly** for each application area:

- Area of land where ash is applied (acres)
- Volume of ash applied (cubic yards)

Each calendar year that ash is used as a soil amendment, stockpiled wood ash shall be sampled annually and analyzed for the constituents listed below. **By 1 February** of each year, these analytical results and the above information shall be summarized and submitted in a report.

<u>Constituent</u>	<u>Units</u>	<u>Sampling Type</u>	<u>Sampling Frequency</u>
pH	Standard Units	Grab	Annually
Moisture Content	% Solids	Grab	Annually
Total Organic Carbon	mg/kg	Grab	Annually
Sodium	mg/kg	Grab	Annually
Chloride	mg/kg	Grab	Annually
Antimony ¹	ug/L and mg/kg	Grab	Annually
Arsenic ¹	ug/L and mg/kg	Grab	Annually
Beryllium ¹	ug/L and mg/kg	Grab	Annually
Cadmium ¹	ug/L and mg/kg	Grab	Annually
Chromium (III) ¹	ug/L and mg/kg	Grab	Annually
Chromium (VI) ¹	ug/L and mg/kg	Grab	Annually
Copper ¹	ug/L and mg/kg	Grab	Annually
Lead ¹	ug/L and mg/kg	Grab	Annually
Mercury ¹	ug/L and mg/kg	Grab	Annually
Nickel ¹	ug/L and mg/kg	Grab	Annually
Selenium ¹	ug/L and mg/kg	Grab	Annually
Silver ¹	ug/L and mg/kg	Grab	Annually
Thallium ¹	ug/L and mg/kg	Grab	Annually
Zinc ¹	ug/L and mg/kg	Grab	Annually
Cyanide ¹	ug/L and mg/kg	Grab	Annually

¹Priority pollutant inorganics shall be analyzed using two methods: Total Metals Analysis (mg/kg) and Waste Extraction Test for soluble extract (ug/L) using deionized water as the extractant.

GROUNDWATER MONITORING

A groundwater monitoring program to assess upgradient conditions and impacts to groundwater quality shall be implemented. The monitoring network shall consist of a minimum of three monitoring wells. The date and time of collection shall be recorded. The following parameters shall be measured when sampling groundwater:

<u>Constituent</u>	<u>Unit</u>	<u>Sample</u>	<u>Frequency</u>
Depth to Water Table	ft below TOC ¹	Measurement	Monthly ²
Water Table Elevation	ft above msl	Calculated	Monthly ²
pH	Units	Measurement	Monthly ²
Temperature	°C	Grab or Meter	Monthly ²
Electrical Conductivity	µmhos/cm	Grab or Meter	Monthly ²
Chloride	mg/L	Grab	Quarterly
Fluoride	mg/L	Grab	Quarterly
Sulfate	mg/L	Grab	Quarterly
Aluminum	ug/L	Grab	Quarterly
Arsenic	ug/L	Grab	Quarterly
Iron	ug/L	Grab	Quarterly
Manganese	ug/L	Grab	Quarterly
Mercury	ug/L	Grab	Quarterly

¹ Top of Casing.

² After one full year of monitoring the Discharger may request that the sampling frequency be reduced to quarterly.

REPORTING

Monitoring results shall be submitted to the Regional Board quarterly. Reports shall be submitted by the **1st day of the second month** after the sampling quarter, as follows:

- First Quarter Report (January to March) is due by 1 May
- Second Quarter Report (April to June) is due by 1 August
- Third Quarter Report (July to September) is due by 1 November
- Fourth Quarter Report (October to December) is due by 1 February.

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

Additionally, the Fourth Quarter Report shall summarize all data collected during the previous calendar year. Tabular and graphical summaries of the monitoring data

obtained during the previous year shall be included. The Report shall discuss the compliance record. If violations have occurred, the Report shall also discuss the corrective actions taken and plans to bring the discharge into full compliance with the waste discharge requirements.

To be included in the Fourth Quarter Report, the Discharger shall submit a statement listing the analytical procedures performed on-site. The statement shall certify that these procedures are being performed in accordance with an approved quality assurance/quality control program. The last date when the QA/QC program was revised and reviewed must be included (Standard Provision C.2).

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

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

Ordered by

PAMELA C. CREEDON, Executive Officer

21 June 2007

(Date)

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INFORMATION SHEET

ORDER NO. R5-2007-0060

BIG VALLEY POWER, LLC, AND NORRIS AND DOROTHY GERIG
BIG VALLEY POWER SAWMILL AND COGENERATION FACILITY
LASSEN COUNTY

Big Valley Power, LLC is proposing to restart a wood burning steam power plant and sawmill formerly operated by the former Big Valley Lumber Company. Big Valley Lumber Company operated a sawmill and co-generator power plant at the site from the mid-1950's to 2001. The power plant facility was added in 1983. The sawmill and power plant facility most recently operated under Regional Board Order No. 98-232 (NPDES No. CA0081451). The facility ceased operations in 2001 and the property and equipment were auctioned in November 2001 to meet creditor debt. Regional Board Order No. 98-232 was rescinded on January 30, 2004.

Big Valley Power, LLC purchased the power plant, property, building, and residual sawmill equipment in April 2004. The plant is located on parcels totaling approximately 110 acres (Assessor's Parcel Nos. 001-130-11, 47,61, 62,73, 74, and 34 and 001-150-34, 33, and 24). Additional land (Assessor's parcel Numbers 001-130-09 and 63) for the northern pond is leased from Norris D. and Dorothy M. Gerig. The plant is located along the north side of Highway 299 approximately ½-mile east of the town of Bieber (Section 14, T38N, R7E, MDB&M) as shown on Attachment A, which is attached hereto and made part of this Order by reference. The latitude and longitude of the plant is 41.13 degrees North Latitude and 121.14 degrees West Longitude. The discharge ponds are on land owned by Norris D. and Dorothy M. Gerig. Big Valley Power, LLC and Norris D. and Dorothy M. Gerig are named as the Discharger.

The project consists of restarting the power plant and sawmill. A projected 50,000 dry tons of wood waste will be burned each year at this steam powered plant to produce 7.5 megawatts (MW) of electrical power for sale to a utility company. The plant includes a boiler feed water treatment system, a boiler, a turbine, a condenser, and a two-cell evaporative cooling tower. The sawmill equipment is still incomplete though it is anticipated that sawmill operations will be similar to the historic sawmill operation.

Process water is supplied from the "cooling tower" well which is screened at approximately 525 feet bgs and has an electrical conductivity of approximately 226 umhos/cm however there are five other wells on the site which may be used for water supply. Approximately 110 gallons per minute (gpm) of process water will be discharged to the northern percolation pond. Approximately 2 gpm of boiler blow-down and 212 gpm of make-up well water are supplied to the cooling tower. Approximately half the water supplied to the cooling tower is lost to evaporation and the remaining (110 gpm) is discharged to the percolation ponds or log deck. The electrical conductivity of cooling tower discharge generally ranges from 700 to 820 umhos/cm.

Most cooling tower water will be discharged to two retention ponds to the north of the power plant. A portion of the cooling tower water may be used to wet the logs on the log deck. The ponds are connected such that the primary pond overflows to a second pond (overflow pond) located to the north of the main pond. Though no measurements exist for the ponds, according to facility staff, the primary pond ranges in depth from approximately 3 feet to a maximum of over 17 feet. The overflow pond is larger but shallower with an average depth of 5 to 6 feet and a maximum depth of approximately 12 feet. According to facility staff, the ponds were originally borrow pits. They were not constructed as disposal ponds.

Groundwater elevation data from a previous investigation at the facility shows the groundwater depth to range from approximately 21 feet below ground surface to 34 feet bgs varying seasonally. Groundwater information was also obtained from the Red Barn gas station located less than 1000 feet east of the facility. Big Valley is gently sloping and there is little ground surface elevation difference between the two sites. The Red Barn data shows depth to groundwater ranging from approximately 13 to 20 feet below ground surface. Data from the Red Barn site shows electrical conductivity of the shallow ground water to be highly variable and ranges from the mid 300 umhos/cm to over 1,200 umhos/cm.

The Discharger uses various chemicals in the storage tanks, cooling tower, and boiler to control pH, corrosion, and scaling. Material Safety Data Sheets for all chemicals are available on-site and were provided to the Board.

Domestic wastewater is discharged through Bieber's municipal water works system to the Lassen County Waterworks Sewage Treatment ponds located to the south of the town of Bieber.

Fuel, in the form of chips, bark, logs, brush, etc. are stored in the uncovered fuel storage areas located outside. A storage building adjacent to the boiler building contains relatively moist wood chips that are used as needed for fuel moisture consistency. Only untreated wood products currently fuel the plant.

Approximately five cubic yards of ash will be generated each day. Fly ash and bottom ash are stored in the central portion the property.

Based on information from the investigation of the facility in the 1990's, the investigation of the Red Barn site to the east and the county landfill adjacent to the Big Valley site to the west, the area is predominately underlain by silty sands and silty clays with interbedded sand lenses. In general silty sands and gravels were encountered to a depth of approximately 5 feet bgs and silty clays were encountered between approximately 5 feet bgs to at least 40 feet bgs. As a result, the subsurface is relatively impermeable.

Storm water will be directed to the disposal ponds or routed through existing drainage ditches to the Babcock Ditch. Precipitation falling in the fuel storage log deck and truck unloading areas will be contained in the log deck ponds. Storm water in the immediate vicinity of the northern disposal pond will be stored in the northern pond. A drainage ditch along the eastern property boundary captures storm water from the eastern half of the site. The ditch runs beneath Highway 299 through a culvert. A second culvert is available in the event that the primary route is blocked. The facility is currently regulated under a General Industrial Storm Water Permit.

Petroleum tankage at the facility totals 9,000 gallons consisting of one 500-gallon gasoline, one 500-gallon diesel tank and one 8,000-gallon diesel tank. All gasoline and diesel will be stored in aboveground tanks capable of holding a minimum of 125 percent of the tank capacity. Turbine oil, hydraulic oil, and motor oils will be kept in 55-gallon drums. Secondary containment will be provided. The containment basin will be capable of holding 110 percent of the total drum capacity. Anti-corrosion chemicals added to the boiler will be kept in polyethylene drums in a separate containment facility. A secondary containment basin capable of storing 110 percent of the total drum volume will surround the polyethylene drums. The polyethylene and 55-gallon drums storage areas will be located under roofed structures to shelter the contents of the drums from the sun and precipitation. Each area of fuel storage will contain a spill cleanup kit in the event of a spill. The Discharger prepared a Spill Prevention Control and Countermeasure Plan (SPCC).

Basis of Order Conditions

Groundwater Limitations and Provisions E.2 and E.3. The California Department of Health Services Recommended Electrical Conductivity Secondary Maximum Contaminant Level (MCL) is 900 umhos/cm and the Agricultural Water Quality Goal is 700 umhos/cm. Electrical conductivity in the discharged waters was found to be 698 umhos/cm during the October 5, 2006 test run sample and 817 umhos/cm in the June 29, 2005 test run sample. As this is higher than anticipated background groundwater levels, the Discharger is required to install monitoring wells up and downgradient of the disposal ponds to assess the impact the facility will have on local groundwater. The results of the groundwater monitoring will be used to in evaluating the discharge with respect to State Water Resources Control Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California.

Interim background groundwater limitations have been established because it has not been demonstrated that degradation of groundwater quality above background conditions resulting from activities at the facility is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies. Under Provision E.2, should the Discharger propose final groundwater limitations other than background, the

Discharger may provide economic, water quality, and water use evaluations to show that groundwater limitations other than background are consistent with the Antidegradation Policy. Under Provision E.3, the Regional Board may reopen this Order to establish numerical groundwater limitations based on information provided by the Discharger.

Cooling tower blowdown samples taken during facility test runs were compared to applicable water quality limits to determine water quality monitoring requirements. Constituents that may exceed water quality limits or have a reasonable potential to impact ground water quality were included in the **Monitoring and Reporting Program** as shown in the table below.

Upgradient groundwater well(s) will be sampled to establish background levels. Downgradient wells will be sampled to assess impact of the ponds to groundwater.

As discussed in **Sludge, Wood Waste, or Ash Disposal Management Requirement C.4**, ash removed from the facility can be tilled into agricultural fields as soil amendment, disposed in a dedicated unit (such as an ash monofill), or disposed in a Class III landfill. Any other use would constitute disposal and would be subject to Title 27, CCR requirements.

Table 1. Big Valley Power Monitoring Rationale

Constituent	Units	BVP range	Limit	Inc. in M&R?
Hardness	mg/L	156-169	None	No
pH	pH units	8.26-8.76	6.5-8.5 Basin Plan	Yes
Chloride	mg/L	49.2-58.4	250	Yes
Fluoride	mg/L	0.37	1 Ag use	Yes
Nitrate as N	mg/L	0.04-0.06	45 P-MCL	No
Nitrite as N	mg/L	0.02-0.16	1 P-MCL	No
Sulfate	mg/L	23.4-32.2	250 S-MCL	Yes
Sulfide	mg/L	<0.02-0.03	--	No
Electrical Conductivity	umhos/cm	698-817	900 S-MCL	Yes
Total Dissolved Solids	mg/L	478-548	Regulated under EC	No
Ammonia as N	mg/L	0.11-0.29	1.5 T&O	No
Total Phosphorus as P	mg/L	0.64-0.75	--	No
MBAS	mg/L	0.03	0.5 S-MCL	No
Cyanide - Total	ug/L	<5-3	150 P-MCL	No
Metals – Total				
Aluminum	ug/L	10.3-36.2	200 S-MCL	Yes
Antimony	ug/L	0.2	6 P-MCL	No
Arsenic	ug/L	2.8-5.2	10 P-MCL	Yes
Barium	ug/L	81.5-118	1000 P-MCL	No
Beryllium	ug/L	<0.5	4 P-MCL	No
Cadmium	ug/L	<0.06-<0.25	5 P-MCL	No
Chromium	ug/L	3.1-6.8	50 P-MCL	No
Chromium, +6	ug/L	<2.0-3.0	100 Ag use	No
Copper	ug/L	4.1-7.2	200 Ag use	No
Iron	ug/L	809-1030	300 S-MCL	Yes
Lead	ug/L	0.4-0.5	15 P-MCL	No
Manganese	ug/L	184-206	50 S-MCL	Yes
Mercury	ug/L	1.59-2.52	2 P-MCL	Yes
Mercury Field Blank	ug/L	0.22-0.74	Not applicable	--
Nickel	ug/L	1.2-2.0	100 P-MCL	No
Selenium	ug/L	0.6	20 Ag use	No
Silver	ug/L	<0.12-<0.62	100 P-MCL	No
Thallium	ug/L	<1.0	2 P-MCL	No
Zinc	ug/L	10.7-10.8	2000 Ag use	No

Limits: P-MCL = Primary MCL, S-MCL = Secondary MCL, Ag use = agricultural use.

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